Transforming Government

Six Years of Continuous Improvement in the Federal Lands Highway Organization

1990 to 1995

U.S. Department of Transportation
Federal Highway Administration

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Transforming Government

Six Years of Continuous Improvement in the Federal Lands Highway Organization

1990 to 1995

A thoroughly indexed, easy-to-read set of articles, anecdotes, facts, graphs, illustrations, editorials, and references to help organizations and individuals change for the better.

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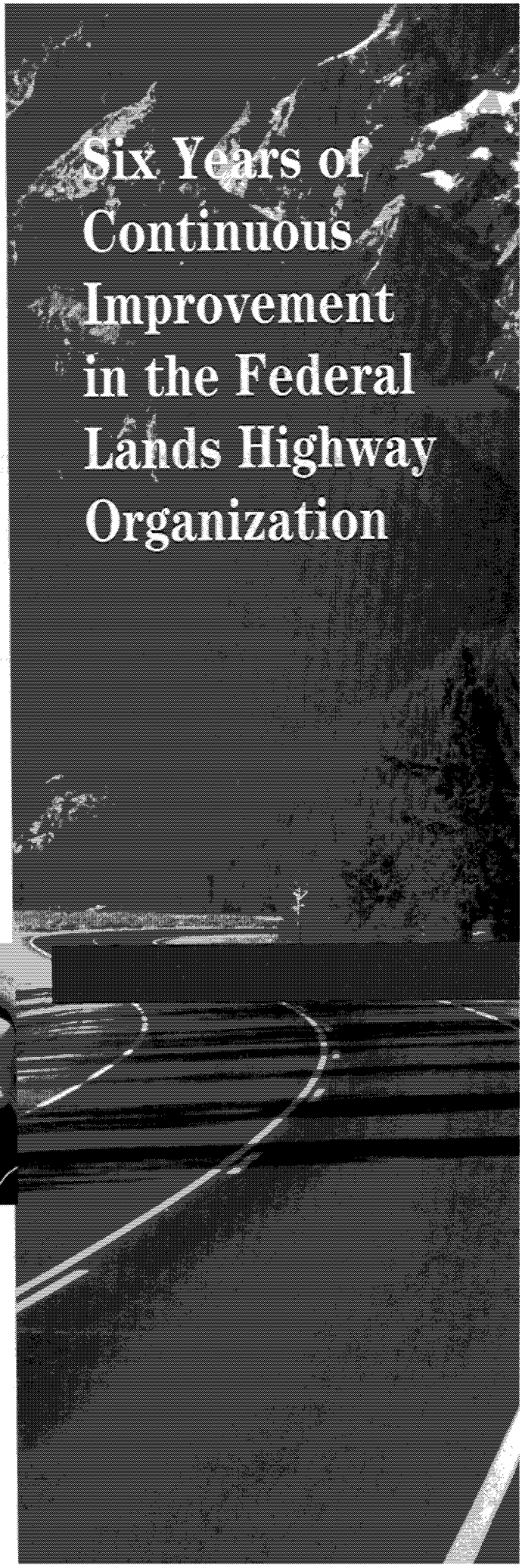
Preface

Time is precious. Don't take the time to read this book if these statements are true:

- You are satisfied with the way government is perceived by the public.
- You are pleased with the way your Department is organized and carrying out its mission.
- You like your organization's use and treatment of its human resources.
- Your people all know how they contribute to the mission, help direct the long-range plan, and are increasingly enthusiastic about their jobs.
- Your leaders ask for and receive meaningful data showing the quantity as well as the quality of the organization's primary products and services.
- You love all the latest buzzwords and TLA's (Three Letter Acronyms) but are not interested in documented evidence and testimonials from employees and leaders of a real-world operating organization.
- You are looking for a document by TQM'ers for TQM'ers because TQM is the elixir we've all been waiting for.

If, on the other hand, **you'd like to make some changes,** read on...



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Introduction

Six Years of Continuous Improvement in the Federal Lands Highway Organization

The problems listed in the Preface are what this book is all about.

The Federal Lands Highway Office is a relatively small organization within the Federal Highway Administration, part of the United States Department of Transportation. The experiences of this group of 615 people are of interest to all organizations, both public and private.

In the pages that follow, you will find examples of soaring success and bone-jarring failure. You will read about moments of inspiration and periods of despair. You will be able to see an organization change from one where decisions came from the top to one that is driven from every part.

Attempts at transforming organizations have met with more failure than success. This book describes how one organization successfully navigated the tricky waters of change.

Overview

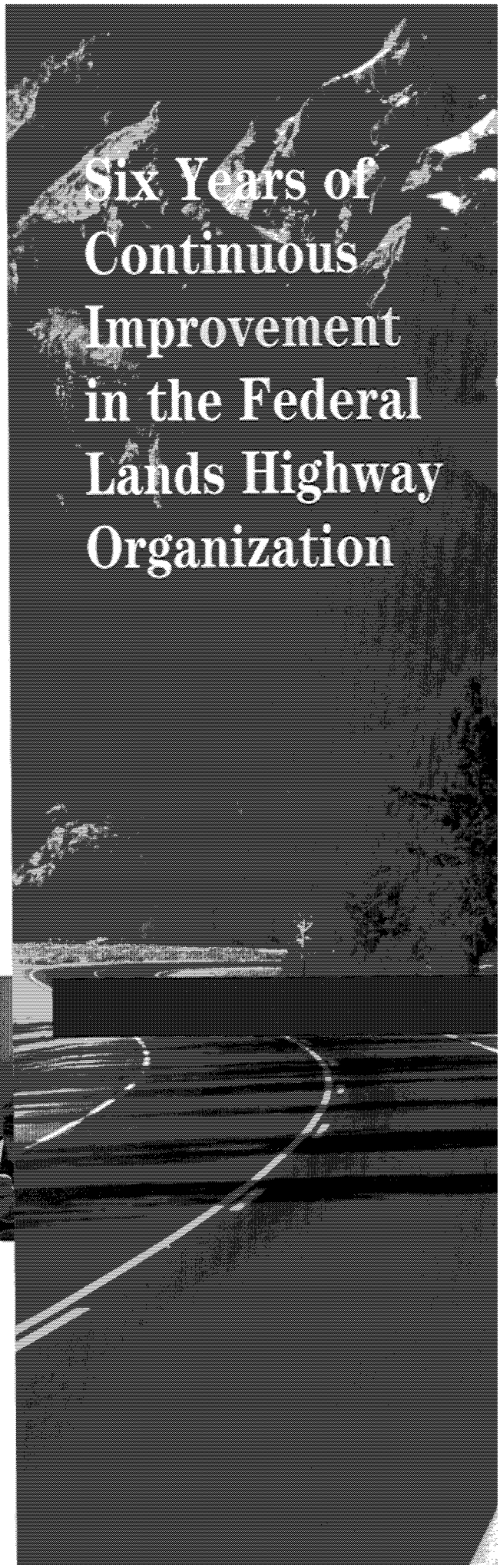
U.S. Department of Transportation Federal Highway Administration Federal Lands Highway Office

The Role of the Federal Lands Highway Office: Excerpts of Key Issues

The Federal Highway Administration (FHWA) is responsible for the U.S. Department of Transportation's role in ensuring the safety, efficiency, and economy of the Nation's highway transportation system. The FHWA is the Federal Government's recognized authority on all phases of highway policy, planning, research, design, operations, construction, and maintenance.

Two principal programs within the FHWA accomplish the organization's vital tasks:

- The Federal-Aid Highway Program and the Office of Motor Carrier Safety, in cooperation with the State Departments of Transportation, manage the Nation's comprehensive highway system.
- **The Federal Lands Highway (FLH) Program** manages highway programs in cooperation with other agencies that



Six Years of Continuous Improvement in the Federal Lands Highway Organization

manage Federal lands. FLH also provides transportation engineering services for planning, design, construction and rehabilitation of the highways and bridges on federally owned lands. In addition, we provide training, technology, and further services and products to other customers from this base.

Organization and Mission—Serving the Public

The 615 employees of the FLH Office are located in a Washington, D.C. Headquarters office (with 18 employees) and three field divisions (which have about 200 employees each). The mission is to develop and carry out the Federal Lands Highway Program through the following mission areas:

(1) Program administration
(2) Highway and transportation engineering services
(3) Training and development of engineers
(4) Development and dissemination of technology

Typically, FLH people plan, locate, and design a highway project for a client agency, award a contract for the project's construction, and manage the contract through full time monitoring and direction provided by Federal engineers and technicians at the construction site. The employees of FLH carry out this mission through a multitude of highway related responsibilities for more than 20 external agencies and groups, including, of course, the motorist. We regularly provide the following products and services:

- Constructed roads, bridges, and related structures
- Transportation planning
- Surveys and mapping

- Location studies
- Environmental documentation and studies
- Geotechnical studies
- Hydraulics studies
- Materials studies
- Highway statistics
- Highway needs studies
- Automatic data processing
- Road inventories and ratings
- Pavement management
- Bridge inspection/ratings
- Designs and specifications for roads, structures, and transportation facilities
- Contract procurement
- Contract administration
- Emergency relief for federally owned roads
- Technical assistance
- Trained highway engineers (highway engineering training/co-op students)
- Transportation research
- New technology support services (implementation, development)
- Right-of-way and utility plans and descriptions

Partnerships

FLH has interagency partnering agreements with several Federal land management agencies. Cooperative efforts involving many technical activities are always underway. We take great pride in providing engineering technical services to a wide range of public agencies at their request. A list of recent partners and customers includes the following:

- Department of Interior—including the National Park Service, Bureau of Indian Affairs, Bureau of Land Management
- Department of Transportation—including the Federal Highway Administration Headquarters, Regions, and Divisions; and the Federal Aviation Administration
- Graduate Civil Engineers
- University Cooperative Education Programs
- Department of Agriculture's Forest Service
- Department of Defense
- Department of Energy
- National Academy of Science
- American Association of State Highway and Transportation Officials
- Small Business Administration
- State and Local Governments
- United States Congress
- Taxpayers
- Motorists
- Foreign Countries
- Highway Contractors and Suppliers

A Brief History of Initiating TQM—Why and When

Changes in FLH

In the late 1970's the FLH office was known as Direct Federal Program and was reorganized from a dispersed effort into a single managed program with redefined and expanded responsibilities. In 1980 and 1981, a new coordinated Federal Lands Highway program began. This new program authorized more than a 200 percent increase in our planning, design, and

construction responsibilities starting in 1983. At the same time the number of our staff decreased by 15 percent (from 1982 to 1985).

To better deliver the much increased program more efficiently and effectively, FLH undertook coordinated management plans, work method improvement programs, and other cost avoidance and program initiatives.

But as program requirements continued to expand and delivery schedules became more difficult to meet, we found that traditional top-down management was not resulting in improved product and service quality.

The Federal Lands Highway managers tried to cope with the increasing program demands while trying to accommodate losses of personnel levels. Without a new focus on the quality of our services, products, customers, and resources, we had no foreseeable way to improve the situation.

New Possibilities

The Government-wide productivity improvement program established by Executive Order in February 1986 offered us a frame work for continuing our quest for improvement. This helped focus leaders on the issues and when the Office of Management and Budget issued Circular A-123 in April 1988, the Federal Lands Highway program concentrated on a broader business strategy to empower employees, develop customer relationships, and work toward total program quality through continuous improvement.

In July and August of 1988 our division engineers, the FLH Program Administrator, and other key staff members met to discuss management system needs and consider future actions. These discussions followed several top level meetings with the Office of Management and Budget, Departmental officials and key agency managers. During the week of October 10, 1988, an interim coordination group recommended that the FLH management system be directed toward Total Quality Management.

The Journey Begins

In 1989, FLH began assessing the organization's work culture. The office's 1989 Cultural Survey scores showed an overall organizational culture that was about average in terms of employee satisfaction. The median rating on the scale of 1 to 7 is 3.5, with 7 being the best. Our first overall score was 3.8.

The Federal Quality Institute sponsored a 2-day Federal Quality and Productivity Conference in 1989. FLH sent 11 managers to this conference. Also in 1989, 26 of FLH's managers and supervisors attended a 3-day session that included Federal Quality Institute curricula. Shortly after this meeting, we established the Executive Quality Council (EQC) and the Quality Coordination Team (QCT) to provide structure and direct resources to carry out principles of quality throughout FLH. The EQC has six members: the FLH Program Administrator, the two Headquarters Division Chiefs, and the three field Division Engineers. The QCT has four members: the FLH Quality Coordinator in Headquarters and one coordinator in each of the three field divisions.

TQM actions that started by the end of 1989 included development of the Program and Resource Management System, the Quality Assessment Plan, and the *FLH Quality News*. This last item, the quarterly newsletter, has become the primary

information sharing mechanism in FLH on quality related matters. From its humble beginnings to its current form, the newsletter documents the key accomplishments in summary fashion. Liberally illustrated with tables, graphs, and photographs, the newsletter now communicates quality throughout the highway community.

Now that we've set the background, you are ready to see how the transformation of FLH has taken place through the five years of publication of the *FLH Quality News*. You may want to start at this book's beginning and read through to the end for an overview of our progress since the first newsletter issue of Winter 1990. You will find the comprehensive index at the end a valuable way to find articles and other material concerning a subject of particular interest.

Our hope is that this book will contribute to improving government organizations (or "management") by heightening the awareness of government executives and managers. The goal is nothing short of encouraging and challenging leaders in government to move their organizations toward being the world's best-led public agency.

America has been led to heightened distrust of government. This negativism is undermining the Nation and the principles on which it was founded. Excellence in government is one of many necessary approaches to neutralize the trend.

We can transcend the 30-second sound bite short-term thinking by helping reestablish proven values. Specifically, these values are continuous improvement and appreciating other people. This is quality.

Looking Outside the Box

One of the first obstacles leaders of an organization must overcome is the monkey trap syndrome. African bushmen discovered many years ago how to trap monkeys in a way that is simple, inexpensive, and humane. The bushmen construct a small cage of rigid sticks just large enough to accommodate a piece of the monkeys' favorite fruit. The sticks are spaced to permit the monkey to reach in with one hand and grab the fruit. However, a monkey won't remove its hand once it's gotten hold of the fruit. Since it will not let go, even under threat of capture, the monkey is easily caught and led away to a life of servitude.

Leaders of many of today's organizations have the monkey trap syndrome. They, like the monkey clinging to the fruit, hold fast to old ideas even when they see their thinking is leading them in the wrong direction.

One of the reasons our organization has succeeded in changing for the better is that our leaders were willing to look outside the boxes of their own personal experience and learn new ways of doing things.

Key Articles Showing Continuous Improvement Over the Years...

Winter 1990

TQM Startup in FLH

Introduction

This is the first of what is planned to be a periodic communique to keep Federal Lands Highway (FLH) employees nationwide informed as to what is going on in our organization. This edition is a summary to bring everyone up-to-date on what has come to be known as "Total Quality Management." For future editions, we encourage your input and participation in making this a publication for all of us.

History

For several years, the three FLH Divisions and headquarters have felt the need for tools or improved techniques for effective management of shrinking human resources to meet increased program requirements while maintaining or improving the quality of our products and services. By 1988, Clara Conner, working under the direction of Gary Klinedinst, in Eastern and Pat Wlaschin, at the direction of Jim hall, in Western were working on development of computerized work activity scheduling systems. Division Engineer Jerry Budwig was looking at the New Mexico State Highway and Transportation Department's automated system for scheduling and monitoring projects.

Concurrent with this, the Federal Highway Administration (FHWA) was in the process of developing an inventory of program functions for possible inclusion in the Government-wide Productivity Improvement Program. This program was established by Executive Order in February 1986 to provide a framework for improving Federal productivity. The office of Management and Budget (OMB) issued Circular A-132, Federal Productivity and Quality Improvement in Service Delivery (April 1988), to provide guidelines for the development and implementation of a productivity and quality improvement process in the Executive departments and agencies.

Productivity Pays
Quality Saves

The FLH Program was included on FHWA's inventory of program functions. In 1988, the Program Administrator agreed to participate in the productivity Improvement Program through the development of a Total Quality Management (TQM) Plan for the FLH Office, and development of a resource monitoring and program scheduling system to support the TQM effort.

The Program Administrator called a meeting of Division Engineers and appropriate Division and headquarters staff members in New Mexico in August 1988 to discuss management system needs and to receive a demonstration of the scheduling/monitoring system then in use at the Highway Department. Out of the New Mexico meeting there emerged a project for development and installation of TQM principles in Federal Lands supported

by systems to schedule and monitor work activities and manage resource usage while keeping tabs on quality. The project is guided by a steering committee (Executive Quality Council) consisting of the Program Administrator; headquarters Division Chiefs Al Burden and Larry Smith; Division Engineers Gary Klinedinst, Jerry Budwig, and Jim Hall. The project is staffed with a team (Quality Coordination Group) consisting of Division Coordinators Pat Wlaschin, Bert McCauley, and Clara Conner; Karen Kabel and Bill Marshburn from headquarters Office of Management Systems; and Project Manager Jerry Rolland.

Quality and TQM

So what is "quality" and what is "total quality management?" Quality is defined as consistently meeting the customer's expectations. Total Quality Management, or TQM, is a strategic, integrated management system for achieving customer satisfaction which involves all managers and employees and uses quantitative methods to continuously improve an organization's processes. Key elements of TQM are top management support, customer focus, long-term commitment, employee involvement, effective and renewed communications, reliance on standards and measures, and the provision of training, rewards, and recognition.

Employee Involvement Emphasizes Open Communications, Participative Practices, and Teamwork.

The figure illustrates some of the key elements of TQM and their relationships to the three primary strategies.

Spring 1990

Blossoming Quality Action Teams

Teams and Teamwork
by Pat Wlaschin
(TQM Coordinator, Western)

Great Beginnings
The spring of 1990 will be remembered as a time of blossoming Quality Action Teams (QATs) in Federal Lands Highway. At latest count there have been over 25 QATs formed throughout headquarters and the three Divisions. The Executive Quality Council and the Division Quality Councils have been formed and have discussed their composition and operational procedures. A Multi-Division QAT has been formed by headquarters to address employee suggestion and incentive programs. In the Divisions, teams are addressing how to increase customer satisfaction and how to provide continuous improvement within office services, CADD usage, materials, safety, and others.

Many of these teams have been formed by management to solve a specific problem. Others have been formed by groups of employees intent on improving the quality of their products and the quality of their work environment.

Why Facilitate?
What is the difference between the way we used to hold meetings and the way we hold them now? The answer is, we now have a **facilitator.** The facilitator's role is to guide the process by which the QAT reviews and resolves their issues. The facilitator uses a structured approach, brainstorming, and nominal group technique to resolve problems. Statistical Process Control (SPC) is another tool the facilitator can use to track the QAT's progress and success. Our facilitators will continue to improve as they receive more feedback from you, their customers, and as they receive more training.

High Performance Teams
What makes a team successful? Why does one team seem to get more done than another similar team? The answer to these questions is addressed in a training class sponsored by a company called "Performance Training Corporation." Their belief is that a team needs vision, responsibility, development, synergy, and power to become **a high performance team.**

- **Vision**—The team is united in its work toward common goals and objectives. The team members begin their project by initially agreeing on their common purpose.
- **Responsibility**—The team shares and accepts responsibility. All team members have duties and responsibilities. All share in the work toward the common vision.
- **Development**—The team develops its members, their capabilities, and their communication methods. As the team progresses the members grow as individuals and as a unit.
- **Synergy**—The team experiences synergy through trust and support. Synergy is the energy that holds the team together. It allows the team to do more than the separate individuals could have done working alone. It is based on mutual trust and support.

- **Power**—The team is powerful in its ability to get the job done. Coordination of effort and unity in direction give the team its power to achieve great results.

Teamicide
There are many traps and pitfalls that a team may encounter during its life. Several of these have been listed in a book titled, *Peopleware, Productive Projects and Teams.* This list consists of Defensive Management, Bureaucracy, Physical Separation, Fragmentation of People's Time, Quality Reduction of the Product, Phony Deadlines, and Clique Control. This book devotes several pages to these items and how to recognize and avoid these dangers.

Employee Responsibility
One of the three principles of TQM is to increase the employees' involvement in increasing the quality of our products. Full participation on QATs is an excellent method of increasing employee involvement. Membership on teams is often requested by management and by supervisors. Other team positions are often filled by volunteers. Your involvement is encouraged.

Early Successes
The major successes from some of these early QATs is the large number of brainstorming ideas that are being suggested as possible solutions to problems. Congratulations everyone!

Teamwork Can Move Mountains

Several teams have focused their efforts on reviewing the processes they use to add value to their products. This is one of the key aspects of TQM, the process review. Other teams are meeting and brainstorming ways in which to increase their customer's satisfaction. They have found that to increase these values, they must first establish a measurement system. Customer surveys are being used more and more. Remember, when you fill out one of these questionnaires, you are helping FLH to continuously improve in many areas.

Fall 1990

Generating Momentum

Congratulations to Contest Winners!
What better way to say what we are all about? "COMMITMENT TO EXCELLENCE" is our new Federal Lands Highway slogan thanks to Jane McClaugherty, Secretary, Administration Section, CFLHD who submitted it. The Executive Quality Council notified the symbol and slogan contest winners on July 3. Dan Van Gilder, EFLHD, and Bill Standley, WFLHD, sent in the two co-winning symbols. The winning entries are shown below.

Each of the three finalists will receive $500 and a plaque engraved with their name and the winning submission. A graphic artist is combining the two winning symbols for our use.

Seventeen other entries also won money in the contest. Ten semi-finalists were chosen in each group (symbols and slogans), and those 20 winners each won $125 for

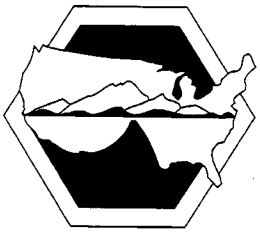
making it to the semifinals. The contest semifinalists were:

SLOGAN:
Walter Langlitz, WFLHD
Rhonda Powell, WFLHD
Ed Sprague, WFLHD
Jane McClaugherty, CFLHD
Allan Miller, CFLHD
Judy Tancreti, CFLHD
Vivian Hanna, EFLHD
Donald Patrick, EFLHD
Julia Perry, EFLHD
Curtis Page, HQ

SYMBOL:
Rhonda Powell (2), WFLHD
Bill Standley, WFLHD
Darlene Puleo, CFLHD
Helen Strauch, CFLHD
Judy Tancreti, CFLHD
Gail Board, EFLHD
Gary Jackovitch, EFLHD
Dan Van Gilder, EFLHD
Curtis Page, HQ

Look for the winning symbol and slogan on future FLH publications and promotional materials, including a brochure explaining the FLH TQM mission, vision, and guiding principles, as well as this newsletter.

by Dan Van Gilder, EFLHD



by Bill Standley, WFLHD

Winter 1991

Training Begins in Earnest

In-House Training to be Available Soon
Pat Wlaschin, Clara Conner, and Bert McCauley are feverishly working on the final touches to a course they will begin presenting early in 1991. The 5-day course is titled, "Team Building, Facilitation, and Quality Process Control." The outline looks great for anyone interested in developing skills in quality. Be looking for an opportunity to attend the session that is coming soon to your Division. These are the planned topics:

- Team Building
- Communication among team members
- Roles of team members
- Operating guidelines and contracts
- Making meetings work
- Leadership styles and skills
- Behavior of individuals in groups
- Problem solving techniques
- Quality process controls
- Selecting a quality project
- Data collection
- Analyzing and presenting data
- Case studies

Spring 1991

Partnering Initiative

Partnering in EFLHD

by Clara Conner,
Eastern Federal Lands Highway Division

In Total Quality Management, we have talked a lot about developing teamwork within our organization, developing better communication and cooperation among individuals with differing strengths to make continuous improvements through shared goals and objectives. With partnering, we talk about using communication and cooperation to recognize and develop the complementary objectives of two separate organizations. In the last couple of months, a contractor and the Cumberland Land Gap Project office of EFLHD have developed a partnering agreement with the assistance of a neutral facilitator, Dr. J. Sullivan of Performance Training Corporation. Partnering in this case consisted of:

- Establishing a partnering team made up of key players from the contractor and the Cumberland Gap project office.
- Interviewing team members to determine key issues.
- Meeting with the partnering team and the facilitator on a regular basis to discuss and resolve key issues.
- Surveying the partnering team after the first two meetings to assess the partnering process, and providing team members with feedback about the process.

The following are excerpts from "The Partnering Process, Federal Lands Highway, The Wright Brothers Construction Co., Inc." It is dated March 4, 1991, and was prepared by Dr. Sullivan of Performance Training Corporation:

From the Federal Lands side, this willingness [to enter into partnering arrangements] is driven by a commitment from the top of the organization. The willingness is also driven on the job site by the hope that some substantial gains can be made in improved relationships with all contractors on the job site. Further, it is hoped that improved relationships with contractors would result in the furthering of FLH organization-wide vision. In general terms this means that FLH would see high quality projects done on time and within budget, that claims and litigation would be reduced and eventually eliminated, and that the application of state-of-the-art technology would lead to improved construction techniques and lower total project costs nationwide. Specific to the Wright Brothers, the FLH people hope to gain:

- Experience which can be used with other construction organizations to create a relationship as good as this one. To learn what we are doing right and how to build excellent relationships.
- Elimination of the perception that we are "cops." All too often FLH engineers get cast in a role of being the tough guy enforcer who makes rigid and unyielding demands, levies fines and creates an adversarial relationship with the contractor. The "new" realization is that we hope to be able to accomplish our quality objectives through

communication and cooperation rather than confrontation.

- To enter into a problem solving and decision making partnership with the Wright Brothers.

"...this means that FLH would see high quality projects done on time and within budget..."

From the Wright Brothers' perspective, the partnering process is also driven by participation at the top of the organization. They insure that decision making and resource allocation will be clearly visible at the top of the organization. Their champion on the job ensures that the principles of partnering are followed on a day-to-day basis. The Wright Brothers Team's willingness to participate is dependent on the fulfillment of some prerequisites:

- The FLH Project Manager (PM) must participate as a member of the FLH team.
- The Wright Brothers will be able to run their equipment as they choose. The expectation is that entering into a partnering arrangement does not mean that day-to-day decisions regarding construction operations will become FLH decisions. In order to operate effectively the Wright Brothers must retain final decision making authority over their men and equipment.
- The Wright Brothers have the right to withdraw from the partnership if it is in their financial interest to do so. This does not mean that the Wright Brothers are in any way suggesting changes to existing agreements.
- If the Wright Brothers Team and the FLH Team cannot gain mutual agreement on goals, then both teams will dissolve the partnership.
- Before the partnering team-building session, each team will receive a list of expected outcomes from the other team so that we can see what is expected on both sides.

Not only do the above prerequisites apply to the Wright Brothers team but they also apply in reverse to FLH.

On the Wright Brothers Team there are two kinds of desirable outcomes from the partnering process. The first set of outcomes are those things of greatest benefit to the Wright Brothers. These objectives include:

- To convince Wright Brothers people that FLH is fair and reasonable.
- The Wright Brothers Team wants to get the most out of The Critical Path Method (CPM) so that Wright Brothers Construction can benefit from using the system on those projects where it makes sense to do so.
- To reduce paperwork is an important consideration for the Wright Brothers. Paperwork represents lost time and overhead when it does not contribute to the bottom line. As an example, the Cumberland Gap project represents an estimated 5% of the Wright Brothers' business but 50% of their paperwork.
- The Wright Brothers Team seeks ways to work more profitably.

The following list represents a list of those things of initial importance to the Wright Brothers Team in their working

relationship with FLH. This should not be considered a final list.

- The Wright Brothers Team would like to establish an agreement that if somebody recognizes a problem, the person who recognizes the problem brings it to the attention of both teams...let's not let it grow just because the other team is trying to figure out a solution.
- The Wright Brothers Team would like to streamline the CPM process. Both teams recognize that there are advantages to the CPM. These advantages help both the Wright Brothers and FLH stay on schedule, identify problem areas, and discover the most cost effective solutions in some cases. However the problem with the CPM lies in its implementation. Specific areas that need help include:
  - Cut paperwork.
  - Right to review changes in the CPM.
  - Minimize the amount of time it takes to make changes in the CPM.
  - Be certain that we are measuring the right things on the CPM. (Example: excavation vs. fill.)
  - Gain more of the FLH input on the CPM at the right time to minimize reworking the CPM.
  - Get advance warning on changes. An example is the 60 pipeline replacement. We thought that we would be extending a line but it turned out that we had to replace pipe, too. No one told us about this until we had the hole dug.
  - We would like the right to move from one phase to another phase.

Summer 1991

Keeping the Effort in Perspective

The Dead Toreador
by Mark Chatfield, HFL-1

Edouard Manet in 1864 painted The Dead Toreador. It is on display at the National Gallery of Art. The painting presents a life-sized image; a dramatic, striking portrait of death and also of the intense life which immediately preceded.

There is a lesson here for those of us who are wondering when we'll be done with TQM. The question, "How will we know we've arrived?" discloses the need for a better understanding about the journey. The various awards which are available for organizations are also misleading. We don't stop our efforts to improve just because we apply for and win awards. These are encouraging confirmations of our being on the right path; maybe even an indication we have completed a particularly steep climb. It does not mean we have arrived at a destination. Neither does it mean we can now go downhill for a while.

The Japanese use the term "kaizen" to describe small improvements, every day or week. The little things which make our work easier. Kaizen is to make the worker happier. It doesn't take a Rhodes scholar to figure out that the whole organization will benefit when the workers are happier.

We plan and hope for big, innovative improvements. I don't want to diminish the value of these upward "spikes" in

The Dead Toreador; Edouard MANET; National Gallery of Art, Washington; Widener Collection (Date: probably 1864; Canvas; 0.759 x 1.533 (29 7/8" x 60 3/8").
Reproduced by permission to FLH Quality News from the National Gallery of Art.

productivity and quality which will come to anyone who is taking reasonable risks and is continuously improving. The problem is our way of thinking. We seem to habitually seek the revolutionary rather than the evolutionary. We often go after the huge innovative improvements, the quantum jumps like the advent of the assembly line or the moon landing or the microcomputer chip. We love knowing our job was big, we were bigger, and now we are done and can move on to an even larger task.

We seem to love to be toreadors who set aside responsible long-term improvement, take maximum risk, and accept the greatest challenge for the possibility of a great one-time success. It is a fatal disease.

Fall 1991

Formal Quality Policy Adopted

FLH Quality Policy
Vancouver, Washington, September 11, 1991

The Federal Lands Highway organization now has an official Quality Policy. The six Executive Quality Council (EQC) members each signed the policy statement at their September meeting. What is our policy on quality?

"The Federal Lands Highway organization is committed to excellence in everything we do through continuous improvement, employee involvement, and customer satisfaction."

We are dedicated to the principles of Total Quality Management as explained further:

Customer Focus
Meeting customer requirements means quality in Federal Lands Highway.
We explore and develop relationships with partners, customers, and suppliers, emphasizing problem prevention. Every employee identifies and develops professional relationships with their partners and customers and works directly with them in order to anticipate their requirements.

Employee Involvement
We foster a culture where every employee has the opportunity for self improvement and to enhance our products, and services. We encourage employees to concentrate on process improvements and take full advantage of spot improvements by widely sharing ideas. We increasingly empower our teams and employees through coaching, training, and appropriate delegation. We accept the risks that accompany team and employee empowerment and responsibility.

Continuous Improvement
We work to improve endlessly the quality of our products and services. In its most

general sense, this means getting better at what we do—forever. We act to eliminate barriers and provide the resources (including time, environment, and support) necessary to incorporate quality into our way of doing things and in all we produce. We reduce variation in our work and know the costs and benefits of quality. We expect everyone to measure the quality of what they do in order to raise their own job satisfaction, improve overall performance, and increasingly please our internal and external customers.

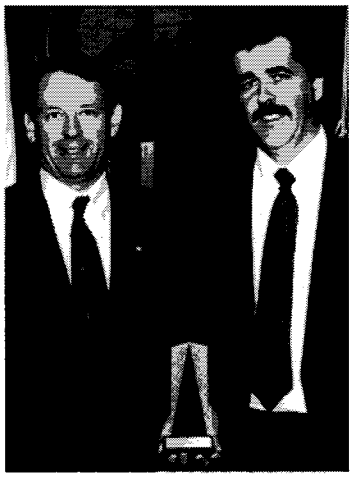
The EQC also documented the reasons we need a policy on quality:

- Reinforce what top management wants.
- Establish a management commitment to the organization.
- Communicate with new and existing employees.
- Communicate with clients/customers.
- Provide a framework for decision making.
- Help set goals and priorities.
- Establish an overriding value for the organization.
- Set the organizational direction.
- Resolve conflicts and conflicting objectives.

Winter 1992

Winning, Yet Staying the Course

Employees of Federal Lands Highway together won the first ever Secretary's Annual Quality Award. The award was presented by Secretary Skinner October 18,



1991 at the Secretary's 24th Annual Awards Program. Receiving the award on behalf of the entire FLH organization was Greg Dolson, Eastern Federal Lands' Project Development Engineer. Tom Edick, FLH Program Administrator commented, "We were looking for someone who represented a group which is, without fanfare, successfully and measurably implementing quality management at the working level. Greg's office is doing this and we were thrilled to have him accept the award on behalf of the whole organization."

The award is given by the Secretary of Transportation in recognition of an outstanding Departmental organization which is customer-focused and committed to achieving excellence through continuous quality improvement. The citation for FLH states, "The Federal Lands Highway Office is recognized for providing leadership in implementing and sharing quality management principles in the Federal Highway Administration." It was quite a privilege to represent Federal Lands Highway in accepting the award," Greg said. "I felt an immense sense of pride in our accomplishments in TQM. It was teamwork throughout FLH which enabled us to receive this recognition. Since the introduction of TQM into FLH almost three years ago, there have been many improvements in our organization—both big and small. The more we have achieved, the closer the team has become. Accepting our award was my moment of celebration,

and I hope when our people see their award they will also take a moment to celebrate."

The competition was open to any organization in the Department of Transportation. Several groups in the Department have quality initiatives underway and applied for the award. The criteria for the award is tough but is intended for organizations which are still in the implementation phase. The idea behind the award is to encourage quality in the Department by providing recognition for agencies that are not only taking the initiative to improve their own work, but are also sharing their experiences with others.

The seven criteria for the award must each be addressed by facts and figures. A panel of reviewers from other organizations spent a week examining the applications. The criteria and the panel's approximate evaluations were: Leadership (70%), Information and Analysis (60%), Quality Planning (70%), Human Resource Utilization (80%), Quality Assurance of Products and Services (80%), Customer Focus (50%), and Quality Results (80%). So what did the panel specifically say about all our work over the past three years? They provided a list of strengths and areas for improvement for each of the criteria:

1. Leadership

STRENGTHS

- High level of organizational support as evidenced by significant involvement and visibility of top executives in developing the quality related efforts.
- Top executives form the Executive Quality Council which provides policy and strategic planning.
- Established formal quality goals and a vision statement.
- Key executives actively "spread the word" to internal and external groups, e.g., the Program Administrator visited each Division to discuss TQM, established peer reviews, held sessions between Division Engineers and employees, and networked with private industry.
- Committed significant resources to training employees.

AREAS FOR IMPROVEMENT

- Encourage many levels of employees to participate in setting and evaluating goals and objectives.
- Provide feedback to work groups on survey results and actions taken to address issues.

2. Information and Analysis

STRENGTHS

- Conducted a climate survey of employees, and questionnaires of external customers.
- Incorporated quality into existing productivity initiatives such as Value Engineering, project development and design manual.
- Established SOP's for external customers, e.g., the National Park Service and the Forest Service.
- Initiated efforts to improve quality processes such as PRMS, and the Quality Assessment Plan.

AREAS FOR IMPROVEMENT

- Increase users' access to databases.
- Develop formal action plan based on feedback for the Quality Assessment Plan and Climate survey.
- Supplier data is addressed minimally.

3. Quality Planning

STRENGTHS

- Established hard, measurable short and long-term quality goals.
- Established over 60 QAT's which monitored quality goals.
- Surveyed customers annually.
- Encouraged employee participation in the planning process.
- Benchmarked data for several cost factors against like organizations.

AREAS FOR IMPROVEMENT

- Expand on and refine the principal types of data used in the planning process.
- Feedback of customer requirements into the planning process appears limited to external customers.

4. Human Resource Utilization

STRENGTHS

- Established "Eddie" awards for peers, which is an innovative approach to employee recognition.
- Encouraged employees to participate in QAT's which instituted process improvements without higher level approval.
- Trained top management and a portion of middle managers.
- Scheduled facilitator and statistical quality control training.
- Established newsletter and TQM handbook.

AREAS FOR IMPROVEMENT

- Expand training to include "field" personnel since they are closest to tasks and represent the Federal Lands Highway Office to customers.

5. Quality Assurance of Products and Services

STRENGTHS

- Established proactive as well as reactive formal means for problem identification and detection.
- Developed and effectively used quality control plans for projects.
- Developed standards and SOP's for contractors and suppliers.
- Reviewed and updated standards, specifications, and manuals.
- Evaluated data using numerous statistical techniques.

AREAS FOR IMPROVEMENT

- Consider including contractors on QATs to increase solicitation of input and feedback.

6. Customer Focus

STRENGTHS

- Instituted Quality Assessment Plan and formalized service goals.
- QATs processed feedback and complaints from a systemic viewpoint.

AREAS FOR IMPROVEMENT

- Methods for obtaining feedback are largely reactive.
- Consider supplementing annual meetings with external customers with other forms of communication.

7. Quality Results

STRENGTHS

- Documented growth in involvement and strong improvement process.

- Demonstrated improvements in many areas, e.g., in program administration, technology, and training.
- Initiatives such as the TQM handbook, newsletter, and the annual Climate survey greatly improved communications with employees.
- The PRMS system included provisions for continuous expansion and improvement.
- Evidence of strong, formalized structure and processes.

AREAS FOR IMPROVEMENT

- Increase frontline involvement and expand work group focus.

Our challenge is to stay the course. Our latest assessment shows that we are passing through the halfway mark toward institutionalizing quality in Federal Lands Highway. Receipt of the Secretary's Award is a signal that we are on the right road. The trophy is circulating to each of our field Divisions. A framed photo will be on permanent display in all our offices. We have much to do—but then continuous improvement implies we will always have much to do. Congratulations, FLH—WE WON!

Spring 1992

Strategic Planning Integrates TQM

Strategic Business Plan Concept

Planning—It's not a mystery, it simply means working smart. We all work hard. We don't always work smart. Planning is essential to working smart.

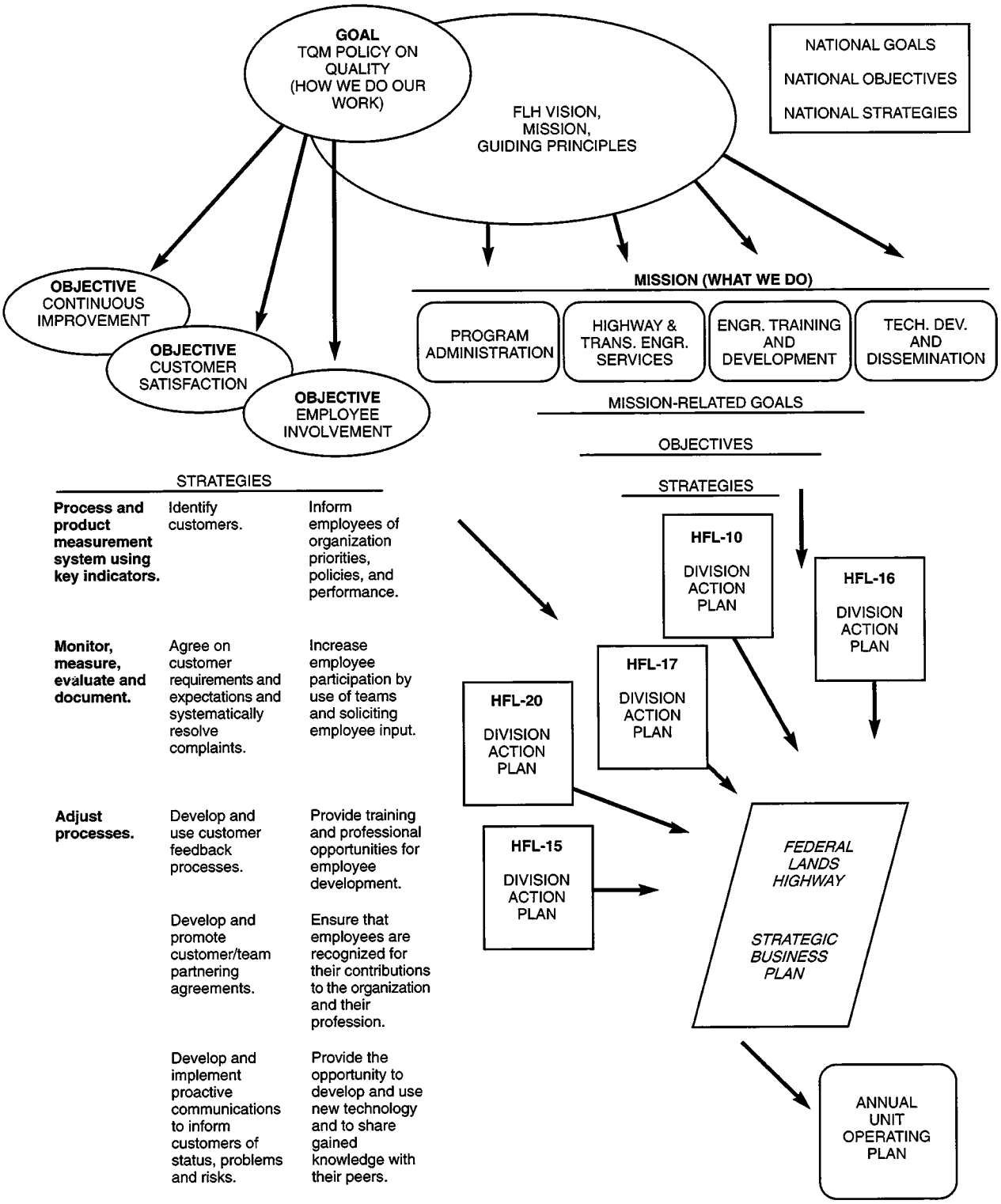
In FLH, we have planned our work. Divisions develop annual work plans. Offices, as well as individuals, plan their work. So, what's all this interest in planning? We have been "planning" for years. Some of these plans are active, some are dormant. Here is a partial list of planning items from the FLH Program Manual:

- Coordinated Management Plans
- Year Management Action Plan
- Annual Work Plan
- Program Emphasis Areas
- Mandatory Plans, Reports, and Information Listing
- Program Planning
- Project Development Plan
- Road and Bridge Management Plan
- Technology Development Plan
- Corridor Studies and Environmental Assessment Action Plan
- Personnel Management Evaluation Plan
- Performance Evaluation Plan
- EEO/Affirmative Action Plan
- Career Development Plan
- Annual Training Plan
- Budget Estimate and Fiscal Plan
- Travel Plan
- Equipment Plan

In the past couple of years, we have seen efforts to provide a meaningful framework for all these plans. We don't have our strategic planning process in place yet, but we are getting there.

The schematic titled Strategic Business Plan Concept—Federal Lands Highway, is our attempt to graphically depict how National strategic planning through FHWA 2000 provides a framework for FLH and all

STRATEGIC BUSINESS PLAN CONCEPT—FEDERAL LANDS HIGHWAY



that we do. The schematic depicts our fourfold mission as **What we do** and TQM as **How we do our work.** In other words, TQM is cross-cutting. It provides tools for us to better perform our work.

One question came up at the workshop related to our mission of engineering training and development: Does this mean no one besides engineers is to have training? Tom Edick explained that each of our mission areas describes a major element of the FLH business. In the case of this mission area, the Federal Highway Administration looks to FLH to train and develop engineers for the whole of FHWA. For us to do this, we must be capable and trained in many disciplines not just engineering. For example, we can't train and develop engineers without having administrative, personnel, fiscal, clerical, technical and other skills to make it happen. Those skills require our people in all disciplines to be trained. The same goes for our other three mission areas.

One might ask where the schematic shows that training is for all. It is part of "How we do our work." It is one of the cross-cutting strategies under Employee Involvement for TQM. It is stated, "Provide training and professional opportunities for employee development."

Summer 1992

Continuous Quality Assessment

Fourth QIP Assessment

This is the fourth year FLH has used the Federal Quality Institutes (FQI) "Quality Improvement Prototype" (QIP) criteria. The eight categories in the evaluation give us a measure of our overall progress in implementing Total Quality Management. This year we departed from previous methods used to complete the assessment by expanding the assessment to include four Division Quality Councils (DQC). This not only multiplied the input, but also assured every DQC member was thoroughly exposed to the criteria and standards we are trying to achieve.

Criteria	**1990**	**1991**	**1992**
Quality Environment	49%	63%	59%
Quality Planning	61	60	57
Employee Training	42	60	60
Quality Assurance	51	53	39
Employee Involvement	48	50	58
Customer Focus	25	44	39
Quality Measurement	23	41	33
Results	10	18	36
Average	**38.6**	**48.6**	**47.6**

Scoring is on the basis of 200 points. Some categories are weighted more heavily by FQI than others. For our internal purposes, we do not weigh the categories, but merely look at the percentage of the possible which we believe we have achieved.

The three focus areas for now are quality assurance, quality measurement, and

FEDERAL QUALITY INSTITUTE

customer focus. We should score higher in all these categories given our other areas of progress. It is not uncommon for many organizations who have implemented or are in the process of implementing quality management principles. There are studies and reports written on this which refer to "hitting the wall." It is at this critical juncture, that many organizations begin to falter and even fail in their quest to change. W. Edwards Deming speaks to this and offers a couple of principles to overcome such obstacles. He says to create constancy of purpose and institute leadership.

The first question to ask is how this came about in FLH with two years of good progress, and then ask ourselves what FLH is doing to overcome the apparent stagnation. When we look at the data and indicators to see which goal areas (criteria) have shown significant and continuous progress, we can point to TQM strategies and actions which we have taken that made the differences. Likewise, for those areas which have shown little progress or have reached a plateau, we see that our TQM plan has not emphasized certain strategies and actions which would be necessary to achieve the objectives as measured by the QIP criteria indicators. For these very reasons, we continue to measure our progress and use this information to help guide our organization in undertaking the most important strategies and correct actions.

What are our plans to go forward if we are to reach our October 1994 goal? The Executive Quality Council and the Division Quality Councils with the support of the Quality Coordination Team are in the process of updating the FLH Strategic Business Plan (unit plan) and the Division's Action Plans (sub-unit plans). The FLH Unit Plan covering the next 3 fiscal years will be completed in July and the Divisions' Action Plans are scheduled to be updated in September. For many years we have updated Division Action Plans. This year we will identify resources more by showing work years and contracted services more clearly. Some of the activities and actions which are planned have been sent already to each FLH employee in a memorandum report from the Federal Lands Highway Program Administrator.

The analogy is not completely on target, but we might think of an organization as an old horse-drawn cart going to market. Along the path toward the market are items to be taken for sale: a crate of fresh carrots, a bushel of apples, a suckling pig, etc.—the list is endless. Sitting on the seat at the front of the cart is the cart's owner. She [Don't let your old paradigms get in the way here.] gets a percentage of everything that is sold so she knows what to look for in the way of quality and only selects the best items. She wants to make sure the cart is full when she gets to market, so she loads up at the first stop with six bales of hay. At the second stop there are 50 watermelons which are sure to sell. By the fifth stop, the cart is overflowing, but she can't pass up the ten 20 kilo sacks of potatoes which are tossed on top. Unnoticed, four dozen eggs are smashed three feet below. The gooey mess drips down on several hay bales. At the

last stop there is just no room for the fine carrots which would have made a handsome profit.

The cart wheels bow out under pressure on the overloaded axle. On a level pathway, the cart creaks along. Downhill progress is hampered by overheated bearings. Then, on the last uphill climb to the market, the cart stalls. The exhausted horse lays down to rest. By the time the damaged merchandise is off loaded, the beast is fed, and the cart makes it to the top of the hill, and the load is transferred to the truck for final delivery, it is already afternoon and the customers have gone back home.

What is missing in the example? A thorough, up-to-date plan. If the cart owner doesn't know most of what is available to pick up, she can't efficiently load-up. If the horse or the cart are not in good condition, she can't expect to carry out the plan. If she doesn't know the weather is going to be bad, she can't plan for the fact that the customers may not even be there when the goods arrive.

The employees, of course, are represented by the horse. The cart is the total workload capacity—all the work that can theoretically be done. The merchandise along the way represents all the projects the organization has the opportunity to take on. The cart owner is the manager who makes the decisions about what work is to be done.

FLH is an overloaded cart. Management has known this, our ASCE Peer Review told us. Our employees are telling us this. Most recently, the Booz-Allen, & Hamilton management review suggested the same thing. We have asked for additional personnel, but this will only help a little even if the request is granted. Fortunately, we are well along the way to having a plan to deal with the situation. The plateau we are encountering is one which will be overcome by the immediate actions we are taking to complete and carry out our FLH Strategic Business Plan.

Summer 1992

Teams Deliver Successes

Correspondence Guidelines Developed by Quality Action Team

The GREENEST book you ever will see is called the Federal Lands Highway's Correspondence Guidelines. The book, developed by the Headquarters Correspondence Quality Action Team in September 1992, provides the standards and processes for improving correspondence quality. The team, sponsored by Larry Smith, produced guidelines that set the stage for measuring the quality of our correspondence.

Team members Sharon Minnich (team leader), Curtis Page, Alfred Logie, Deena Purvis, Gloria McGraw, and Jeffrey Rapol coordinated and received feedback from customers throughout FLH. The team worked together to provide a consistent, easy-to-read set of guidelines complete with sample documents, lists of acronyms, and other essential information. Now even an engineer can produce a QUALITY document (assuming they can use the word processing spell-checker)!

Bukota's Typographical Truths:

(1) Typographical errors will be found only after the final copy is bound and mailed.

(2) Typographical errors appear in inverse proportion to the number of syllables in the misspelled word.

(3) Engineers can catch misspellings only in words written by someone that's not an engineer.

(4) The incidence of missed typographical errors increases in direct proportion to the number of people who will see the copy.

(5) The incidence of missed typographical errors increases in direct proportion to the size of the letters in the copy (about 1.3 errors per point size, but that proportion isn't proven beyond doubt).

(6) Success in finding typographical errors is in inverse proportion to the finder's income and number of years of education. Ask the janitor.

Fall 1992

Innovative Suggestion Program Initiated

Becoming the Best Through Suggestions, Awards, and Recognition
by Pete Perros, HFL-12

This newsletter has chronicled steps in FLH's quality management journey, undertaken as a means for dedicated employees to make it the best highway engineering organization in the business. We identified the three key elements of quality management as customer satisfaction, employee involvement, and continuous improvement. Early on, the Executive Quality Council (EQC), our TQM "board of directors," recognized the positive relationship between the latter two elements and an effective employee suggestion program. The agency suggestion program that existed at the time did not encourage large numbers of employees to become involved with the improvement of their organization. Consequently, the EQC commissioned FLH's first Multi-Division Quality Action Team (MDQAT) and charged it with developing a suggestion program that would meet the organization's unique needs. The team was comprised of representatives from the FLH Headquarters office, its three field divisions, and the FHWA Office of Personnel and Training.

The result of the team's efforts is the "Bridge to Improvement." It combines new and proven elements into a single, innovative system. The most unique feature of the Bridge to Improvement is that it goes after both large and small ideas by offering users a choice of two distinct suggestion-processing options. The "formal" option pays cash for ideas that result in monetary savings or significant intangible benefit to the organization. This option is modeled after the U.S. Coast Guard's suggestion program and is intended to capture the potentially "big" ideas. It recognizes a survey finding by the National Association of Suggestion Systems that cash is the biggest motivator for employee suggestions in the U.S. The less formal "Shortcut" option provides non-cash awards for smaller, everyday ideas. It makes using the system easy by minimizing eligibility, documentation, and processing requirements. The Shortcut option is based on the Japanese "kaizen" principle of significant organizational improvement

through the continuous flow of small, incremental ideas.

Besides integrating both of these approaches within a single suggestion system, the Bridge to Improvement suggestion program offers other improvements:

- Short, defined response times for processing suggestions—10 days for the formal option, 3 days for the Short-Cut.
- Acknowledgment gifts for all valid suggestions submitted, and nominal cash evaluator awards (both for formal option only).
- In Headquarters and each division, a Suggestion Committee to manage the system and foster local ownership of it, and a dedicated Suggestion Program Coordinator to handle its day-to-day administration.
- An automated data base for tracking suggestions in process.
- Emphasis on (1) keeping suggestors informed throughout process, (2) publicizing suggestion awards, and (3) sharing successful ideas among all FLH locations.
- The FLH Quality Action Team process: Following the plan-do-check-act cycle, the team will monitor system performance and implement necessary improvements.

The Bridge to Improvement program was launched throughout FLH in June. During its initial 2½ months of operation, it captured 31 formal and 11 Shortcut ideas from the 600-person FLH work force. All of these ideas, both large and small, are improving the organization's ability to fulfill its stewardship mandates and serve its customers.

The members of FLH's Multi-Division Quality Action Team for Suggestions, Awards, and Recognition are:

Sponsor
Allen Burden, Chief, Program Planning, Development, and Administration Division, FLH Headquarters

Chairman
Peter Perros, Executive Officer, FLH Headquarters

Members
LaVice Andre, Secretary, Central Division

John Arriaga, Project Engineer, Western Division

Terri Miller, Personnel Officer, Eastern Division

Ruth Burley, Personnel Management Specialist, Office of Personnel and Training

Joseph Clem, Construction Operations Engineer, Central Division

Lonnie Moss, Division Quality Coordinator, Western Division

Vern Smith, Civil Engineering Technician, Eastern Division

Winter 1993

Process Improvement Teams Initiated Across FLH

Federal Lands Highway is in a very unique and exciting position. It serves partner Federal and State agencies by providing tourists and other travelers with access to the most beautiful and significant sites the United States has to offer. We permit the

public to "connect" with the environment. When the public experiences the wonders of the National Parks, National Forests, Indian lands, and other scenic and recreational lands, their sensitivity to protecting these vital resources is heightened. We directly participate in one of the Nation's positive balance of trade industries—international tourism. The processes we use to provide environmentally enhancing roads and bridges which are safe and cost effective largely dictate our ability to meet customer needs.

David Osborne and Ted Gaebler in their book *Reinventing Government* say, "Governance is the process by which we collectively solve our problems and meet our society's needs. Government is the instrument we use. The instrument is outdated, and the process of reinvention has begun... We need an American *perestroika.*" J.M. Juran says, "The end result of process design is a definition of the means to be used by the operating forces for meeting the product goals." He goes on to say, "the process designers should also be trained in the skills and tools associated with the planning process. These include understanding of the anatomy of processes, of the concept of process capability, and the nature and use of flow diagrams and spreadsheets."

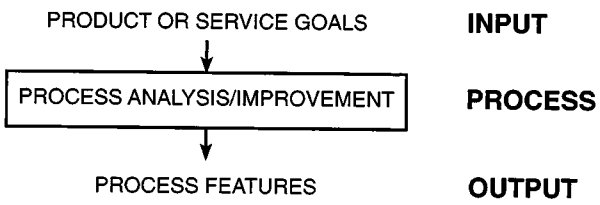
In late November, FLH kicked off an organization-wide initiative to understand, document, and improve our work processes. The first part of the initiative was a 3-day training session in Atlanta. Bill Hayden, a consultant who specializes in quality for architect/engineer firms, presented review material and introduced concepts of process management to FLH leaders and managers. Following Bill's presentation, Dick Smith and Mike Hierl of the Pacesetter Group introduced a detailed and highly structured approach to process analysis. This technique, the "Process Map," is a step-by-step method which uses trained facilitators supplemented by computer software.

Background

A little pre-Atlanta workshop history is needed to let everyone know where we have been and where we are going. The FLH Strategic Business Plan shows this activity as a top program improvement priority emphasis for 1993 and 1994. All this emphasis, however, does not mean the FLH has been idle in process management and improvements over the years. In fact, one of the very first quality improvement steps started years ago was the initial flow charting of the FLH project development process and subsequent work by the several Management Unit Teams (MUT). In 1988, a quality assessment program was initiated to emphasize improvement of the total design process. The effort began with the development of the Project Development Design Manual (PDM). In 1989, the MUTs were assembled to develop the Program and Resource Management System (PRMS). PRMS is a project scheduling system that tracks the status of highway and bridge design projects by tracking completion status and resources for a sequence of activities defined for each project.

Goals of Process Management Teams

During the Atlanta workshop, the MUT's were replaced by Process Management Teams (PMT) to better align the teams with the objectives of process improvement. The PMT's have been established to define each process, complete the development of quality standards, and identify key



measures. The goals of the PMT's are to improve processes, achieve continuous quality improvement, develop an action plan to address the process and map the processes/problems to enhance benchmarking opportunities. Following lessons learned from the initial efforts, the process improvements will be made accurate for all engineering and administrative systems.

Processes to be Analyzed

The eight teams or processes identified are: Location, Roadway Design, Environment, Geotechnical, Hydraulics, Bridge, Right-of-way and Utilities, and Contract Development. The teams will be comprised of subject experts at each division, a lead facilitator, a support facilitator, a process owner, suppliers to the activity, customers (both internal and external to the activity) and contract support from CH2M Hill and the Pacesetter Group. Initially, attention will be focused on two processes, Location and Design, with each Division working independently to evaluate the processes within each area.

Structured Analysis

The Pacesetter Group was chosen to lead the Federal Lands through the process assessment. Pacesetter developed an interactive PC software system identified as Process Map (PMAP) which is a highly structured process analysis tool to insure consistent PMT processes and documentation of each activity. The Process Management Teams will identify the inputs and outputs, verify the suppliers and customers, and determine customer expectations needed to establish quality attributes and quality criteria for the products and measurements for each activity. The project development activity process currently used in each Division will be identified and analyzed to determine the best process. After analysis and review of the existing processes, the PMT will make recommendations as to the most efficient process to be used for the particular activity. The PMT's recommendations will be the basis upon which the continuous process improvement will begin.

Time Frame

The PMAP technique is organized into several sessions which will include project planning, facilitator training, stakeholder identification and expectations, five PMT meetings, and eventually project evaluation. It is anticipated that PMT members will spend approximately 40 hours to complete the requirements through Session 3. This figure includes approximately 10 hours of "homework" between Sessions 1 and 2. The facilitators would be required to spend up to 50 hours for this same process. The homework would involve talking to customers, and developing and verifying the data required by the Process Map program. PMT Sessions 4 and 5 will use the action plan processes, quality standards, and measurements developed in Sessions 1 through 3 to begin the measurement process to help identify process improvement needs. This process improvement will be developed into a system for continuously evaluating key indicators to determine conformance to standards and customer expectations. Finally, performance measures will be maintained and monitored to permit analysis of the process to identify

problems, develop permanent solutions, and make continuous improvements.

The PMT's are scheduled to begin work in January 1993 on the Location and Design processes at the division level. Sessions 1 through 5 are scheduled to be completed by the end of March 1993. Once the divisions have developed an action plan to address and map the processes they will work on developing an action plan at the multi-divisional level. This multi-divisional action plan will strive to achieve continuous quality improvement uniformity throughout all divisions within the Federal Lands Highway. This same sequence, of process identification and action plan formulation, will be repeated far each Project Development process through January 1994, the scheduled completion date.

Product and service outputs are no better than the processes used to produce them.

"This is what TQM is all about."
The workshop in Atlanta generated new enthusiasm within the Federal Lands Highway Divisions to achieve and deliver a quality product to our clients. The highly structured approach used by the Pacesetter Group and the associated PMAP software system is a tangible object that we can use to analyze our process management and the processes. One reassuring factor is the commitment of the top management of the Federal Lands to empower the process management teams to make changes and strive for continuous improvement. Future articles will track the progress of the PMT's.

At the end of the training, the group was asked for their reactions. Overwhelmingly, participants found the techniques relevant to FLH and to their jobs. One comment was, "This is what TQM is all about. Let's get on with it."

With the help of the engineering firm, CH2M Hill and the Pacesetter Group, we are now aggressively going forward with process improvement teams in each Division and Headquarters. The teams will first be working in the project development aspects of the Division's work. The overall project leader is Tony Welch, Program Development Engineer in the Headquarters Engineering and Operations Division. Field Division contacts for the teams are: Greg Dolson, EFLHD, Charmaine Farrar, CFLHD, and Scott Rustay, WFLHD.

Spring 1993

Listening Sessions Challenge Leaders

FLH Listens!
Federal Lands Highway Program Administrator, Thomas O. Edick, last November directed FLH-wide listening sessions as part of the Executive Quality Council's plan to implement Total Quality Management. Over 450 employees participated in one of eight 4-hour listening sessions in a 2-week period ending February 3, 1993. The sessions were held on-site and were organized completely in-house to minimize cost. The purpose of the sessions was for employees to listen to the FLH leadership and for the leaders to listen to employees.

The Division Engineers, Gary Klinedinst, Jerry Budwig, and Jim Hall; the Program Administrator, Tom Edick; Headquarters Division Chiefs, Al Burden and Larry Smith; and the Quality Coordinator, Mark Chatfield reported directly to employees on overall FLH programs and resources, of organization initiatives, the strategic business planning process, the Division's link to the FLH-wide plan, and areas of importance for the future. They listened and responded to employees in terms of what is working well and where there are opportunities for improvement.

One of the employees who came forward to report from a break-out group was surprised when she stepped up on the platform to speak. She had glanced to her right to acknowledge the entire power structure of FLH and she thought there was something wrong. Every one of the EQC members was head-down, busily preparing to take notes. They were definitely listening. Employee input from the listening sessions was summarized and quickly fed back to employees in the form of a flyer.

The most obvious and immediate result of the sessions was that employees mentioned Customers/clients, Training, and Employees as the top three areas in both the Best Practices list and the Change Opportunities list. The message at first seems conflicting. Employees are saying they recognize FLH has done an excellent job, but there is still room for improvement. The expectations of employees has no doubt increased along with the improvements which have been made.

"We have developed a habit of top-down management. What we need to do is create a habit of teamwork."

—Rodney Slater, Federal Highway Administrator designate, discussing Total Quality Management with Federal Lands Highway officials on April 20, 1993.

In the Customers/clients area, people seem to acknowledge the orientation of FLH to its customers but also recognize there are key customers who are not yet adequately considered in our work. All FLH personnel responded strongly in this area.

For Training, employees understand the effort, funding, and time which FLH has dedicated to assuring people learn. However, the training is not always focused and is often too general. The FLH is not training people sufficiently for their day-to-day work in many cases. There also is a need to focus individual training plans on job skill requirements and career plans. There seemed to be a good system for scheduling people for training in "soft" areas like communications, time management, personnel issues, and quality theory. The organization needs to do more to make sure people understand how to do their job before they are asked to do it. The concept of cross-training and development assignments was favored. Training issues were pointed out by every field Division almost equally; it was not a major point at the Headquarters session.

The area of Employees received attention in all field Divisions. The substance of the comments was spread over many issues. Some of the more prevalent are outlined

here. The FLH employees have high morale and believe the organization has top-notch people. They appreciate being asked about their perceptions in surveys and meetings. Empowerment was brought up in several sessions. Construction people believe their ability to meet customer requirements is hampered by the need for them to obtain higher level approval before responding to certain kinds of project changes. Project mobility requirements place hardships on many field employees. Whether it is work schedules, resources, or assigning people, employees asked for more operating decision authority. Employees expressed some frustration in having the desire to do quality work but not the time to do it. There was some indication that employees would like less project "micro-management" and more management concentration on providing resources.

The EQC met the day after the last listening session to consider what they had heard and how to incorporate it into the FLH Strategic Business Plan for 1994-96. The meeting was professionally facilitated by Ms. Rosemary Booth of the Volpe National Transportation Systems Center. The EQC considered the status of the 1993 FLH Strategic Business Plan, the Critical Change Factors from the FHWA's Environmental Scan, employees' input from the listening sessions, and their own priorities for the organization. Using the framework of the Total Quality Management Implementation Plan, the EQC developed seven "focus" areas for further consideration at the FLH Strategic Planning Workshop on March 22-24, 1993.

The workshop was a single issue planning meeting. It was not like the multi-faceted Quality and Planning sessions held the past two years in San Antonio and Nashville. It was a high-level strategy meeting which was part of the FLH's strategic planning process. As pointed out throughout the listening sessions and during our last few years involved with planning, we simply had to be more strategic in our thinking and focus on the critical few. Top leaders took all they have heard from employees, stakeholders, and customers and put it into a plan for FLH-wide continuous improvement.

Immediately after the workshop, the Executive Quality Council met to refine the strategies for 1994–96. Although further considerations are being given to assure certain parts of the Engineering Technicians Task Force recommendations are implemented, the draft strategic plan calls for nine focus areas. These are the top change areas or new directions the FLH leadership has identified for the future.

- Fourth quarter contract awards.
- Financial management.
- Standardization/Uniformity.
- Business processes.
- Training.
- Procurement.
- Technology development and transfer.
- Metric conversion.
- Total quality leadership/customer measurement.

These are the **change** initiatives. The everyday work of FLH is described in our four mission areas. In FY 1993, Divisions attempted to centrally report progress on about 100 separate work areas which were tied to the FY '93 FLH Strategic Business Plan. In an effort to simplify reporting, the EQC will track just the nine focus areas and related objectives plus the four mission areas and related objectives.

Although not yet finalized, this is expected to include about 40 items. During the May–July period, each FLH Division will plan its entire workload to include new initiatives and priorities.

After the FLH's experience, E. Dean Carlson, Federal Highway Administration's Executive Director recently encouraged all Regional Administrators, Staff Office Directors to hold listening sessions. The purpose being to involve employees in the task of identifying the changes that should be made to the current National Strategic Plan. Specifically, FHWA is updating the objectives and strategies to strengthen focus and accountability.

Summer 1993

Dramatic Partnering Results

Partnering—It's Working!
In his new book, *Making Quality Happen*, George Labovitz spells out the essence of partnering. "Partnering customer and supplier organizations behave as if they were one company (at least in the areas in which they've agreed to partner), helping to improve each other's work processes and sharing each other's successes and failures. Underlying the partners' interactions is a belief quite contrary to caveat emptor: For me to succeed, you must succeed. Ironically, customer and supplier achieve this high level of trust, communication, and mutual understanding by shifting their focus away from each other to concentrate instead on a superordinate goal: Satisfy the ultimate customer."

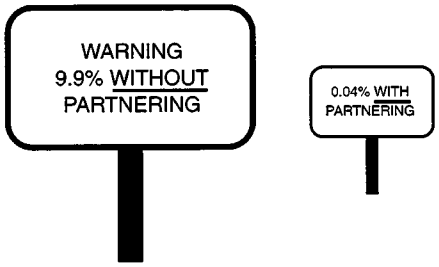
The goal of partnering is to reduce the cost of quality. There are two parts to this cost. First, the cost to make products and services right the first time. This is the cost of producing high quality and is a necessary cost although it can be minimized. Second, the cost resulting from deficiencies. This is the cost related to poor quality and is a waste of time and money.

One of the most pervasive areas of waste in highway construction and contract administration is that of claims by contractors for unresolved disputes. Because resolution requires dramatically increased resources, claims represent a lose-lose situation for both the contractor and the contract administrators.

The reduction in waste that Federal Lands Highway is achieving with partnering is very encouraging. The results are now starting to become evident. In 1990, before partnering, there were 23 active claims on construction contracts totaling $12.4 million. In 1991, as a FLH initiated a few formal partnering projects, twelve claims were settled but ten more were added for a total of $14.6 million. As of the end of FY 1992, when partnering was begun and continued on multiple projects, there were virtually zero (0.04 percent) claims on the $73 million of contractor earnings for the 13 partnered projects underway. Claims as a percent of the $143 million in contractor earnings for all 108 projects active during FY 1992 was 9.9 percent, or $14.1 million. Using the 9.9 percent rate, the claims on partnered projects could have been expected to be $7.2 million. Even assuming all of the additional 4.7 percent, $3.4 million, contract growth on partnered projects is attributable to partnering (an unreasonably conservative assumption),

PARTNERING RESULTS IN FLH

CLAIMS AS A PERCENTAGE
OF CONTRACTOR EARNINGS

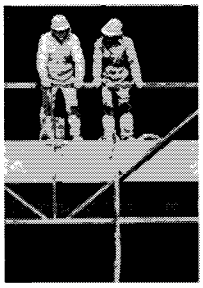


the reduction in waste would be $2.5 million.

Although early indications are very positive, other factors must be considered. For example, FLH has had only two years' experience in partnering; there is insufficient completed project data to reach statistically significant conclusions. Some of the projects were selected to solve difficult problems on expensive projects, some were selected for their potential for early success. Partnering in FLH has been encouraged, not mandated. In some cases contractors have turned down the opportunity to enter into partnering agreements. Some of this may be due to their being satisfied with existing relationships and some may be due to fear of additional management resource commitments vs. anticipated benefits. There has been no directive from management to eliminate claims on partnered projects. Indeed, as might be expected in any human endeavor, some partnering efforts have been very difficult and one or two have been considered by some to have failed. The real failure, however, would have been never to have tried.

The positive facts which cannot be avoided are:

- Nearly 50 percent of contractor earnings for the Fiscal Year 1992 were on projects which included formal partnering.
- Claims on partnered projects have been virtually nil.
- Engineers and contractors have good things to say about their experiences as exemplified in the following articles.



Fall 1993

Employee "Peer" Awards Generate Enthusiasm

The Central Division's New "UXL" Peer Award Program

In June, the Central Division began a new award program—the "UXL" Peer Award Program. The first "open season" was from June 3rd to July 31st to coincide with the end of the fiscal year for distributing award money.

To involve everyone in the naming of the program, we held the "Name The New Central Peer Award Contest." Darrell Harding, our Materials Laboratory Supervisor, had his entry chosen out of a list of 26 names. He submitted the name "UXL" that translates to "You Excel." Darrell received $100 for winning the contest.

The "UXL" Peer Award Program process models the Eastern Division's Demonstration of Individual Excellence (EDDIE) Peer Award and the Western Division's Cheer-for Peers Award. During a fiscal year, each GS-12 or below graded Central employee can give one UXL award

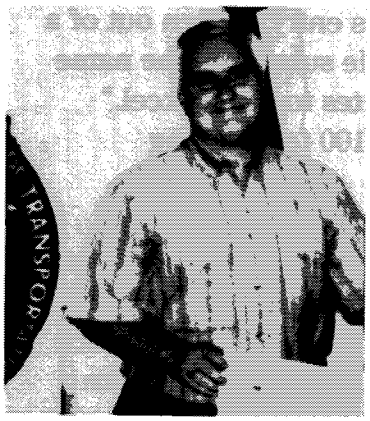
to any other employee except to those who supervise or are supervised by that employee. There are no restrictions as to the number of awards a Central employee can receive. Each recipient receives a certificate and $25 in a future paycheck.

The nomination form requests the nominator to provide the criteria for his or her selection. Examples that are given on the form include:

- Promoting teamwork
- Sharing knowledge, skills, and time with others
- Having a positive outlook and persistence in accomplishing their job
- Providing high quality service, service beyond the expected level, and/or exceptional courteous service

In addition, employees are asked to describe the situation(s) in which their nominee demonstrated the above criteria. Also they are asked to write a citation that is printed on a certificate.

In August, a "cookies and punch" awards ceremony was held to honor those employees who received awards during the first open season. Of the 197 nomination forms distributed, 27 were returned for a 13.9% rate of return. One employee received three awards and five employees received two awards. The remaining nominees received one award each. Although the participation level was low, employees attending the ceremony agreed that this would be a beneficial program to continue.



Darrell Harding is recognized for naming the "UXL" Peer Award.

During the ceremony, the citation on each award was read as the employee received a hand shake from Division Engineer Jerry Budwig. The citations included: Thanks for always being so helpful...For exceptional service above and beyond the call of duty...For willingness to share knowledge and expertise ...Exceptional service in spite of DAFIS...For unselfishly sharing his expertise to help us do our job better...

Winter 1994

TQM Efforts Put FLH in Leadership Role

FLH Pilot Project

The FLH is participating in a Pilot Project for Performance Plans and Program Performance Reports under P.L. 103-62; the Government Performance and Results Act (GPRA) of 1993. FLH is the only approved Pilot for FHWA and is one of four approved in the Department of Transportation. The incentive is the potential for early waiver of certain non-regulatory requirements such as employment ceilings. Part of the Pilot Project relates to partner involvement in strategic plan development.

The real purpose of the GPRA is to make sure agencies can show meaningful performance through strategic planning and measurement of program outcomes rather than just productivity or

expenditure. The outcomes show how a program is benefiting the public. In order to show this, agencies are to measure key program elements. The outcomes and measures are to be developed in conjunction with partner organizations.

On November 16, 1993, FLH initiated direct partner agency involvement activities under ongoing strategic planning. A one-hour session as part of a previously arranged meeting with Forest Service directors was held to develop draft outcomes for the Forest Highway Program. FLH presentations by Al Burden and Mark Chatfield asked for input from key Forest Service leaders. Although we used minimal time, participants provided valuable information on outcomes. A follow-up memo to the Forest Service is planned to have them supplement the list of outcomes and provide suggestions on output measures before any attempt is made to finalize a list. The Forest Service's entire program will also be a GPRA pilot project.

The Bureau of Indian Affairs (BIA) is implementing recommendations of the National Performance Review and is beginning to implement Total Quality Management. At a meeting of BIA Area Road Engineers on November 29, 1993, the BIA reviewed their work relating to the National Performance Review. This led to FLH's presentation on the GPRA. Al Burden provided 15 minutes of background on FLH's strategic plan to the 60 attendees. Mark Chatfield presented a 10-minute overview of GPRA and then facilitated a work session during which the Area Road Engineers individually wrote down their ideas for one key outcome and from two to four related output measures. Groups of six to ten then discussed their individual items and a representative of each group presented one outcome with its related measures. All the information was collected and compiled with excellent results. A follow-up memo to the BIA is planned to provide an opportunity to adjust the list of outcomes and measures as the next step in reaching agreement.

FLH is scheduling one- to two-hour meetings with additional partner Federal Agency leaders: the National Park Service, the Bureau of Land Management, and the Military Traffic Management Command. The reason for this "outreach partnering" effort is to complement our measurements and to get partner buy-in to our strategic planning process. This was needed without regard to the Pilot Project. However, the Pilot effort caused us to do it sooner that we probably would have otherwise. Our intent is to complete these meetings by the end of January 1994.

Under the Pilot Project, the FLH will track performance by rating progress in three areas:

- Internal customer and employee involvement,
- External customer focus, and
- Continuous improvement and productivity.

The performance goals that would be the essence of this pilot would be made up of multiple measures indexed under the three primary categories.

The FLH is currently measuring most of the proposed elements. Managers document performance measurements in various annual stewardship, budget, and system-condition reports. In order to carry out the pilot project, FLH will initiate the remaining measurement processes. As soon as all measurement processes are on-line,

an indexing technique will be agreed upon and used for the duration of the project. Reporting is currently done on key finance-related elements and summarized as part of FHWA's annual report under the Chief Financial Officers Act of 1990. The reporting will be expanded in the future to explain program outcomes in addition to providing financial information.

The FLH/FHWA would pursue designation for follow-on pilot initiatives relating to Managerial Flexibility. A Managerial Flexibility Pilot would permit FLH to further its current quality management initiatives in concert with the recommendations arising out of the President's National Performance Review initiatives. So far, program outcomes and associated measures which partner agencies are identifying are very close to the goals of Secretary Pena and Administrator Slater:

- Support the economy,
- Promote safety,
- Link transportation and environmental policy,
- Advance technology, and
- Foster intermodalism.

Spring 1994

FLH Turned Upside Down!

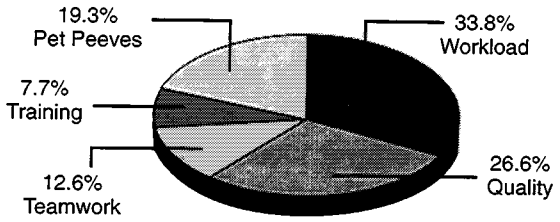
Results of Internal FLH Surveys and Assessments
by Mark Chatfield

FLH uses three special techniques to give employees the opportunity to direct the future of the organization. In the past, only top executives had this privilege. In a way, FLH's decision-making structure has been turned upside down. For five years in a row, FLH has conducted a Cultural Survey which goes to all employees asking about their perceptions of 20 categories of the FLH work environment. Another assessment which has been ongoing for 5 years is the Quality Improvement Prototype assessment. This rather painful evaluation is completed annually by Division Quality Council members. It provides specific information to managers and supervisors on 8 criteria which show how well FLH is implementing quality initiatives. Finally, for the past 2 years, top FLH leaders have conducted listening sessions to provide face-to-face communications with employees. The listening sessions and all survey data are timed to be available before the Spring Strategic Business Planning meeting.

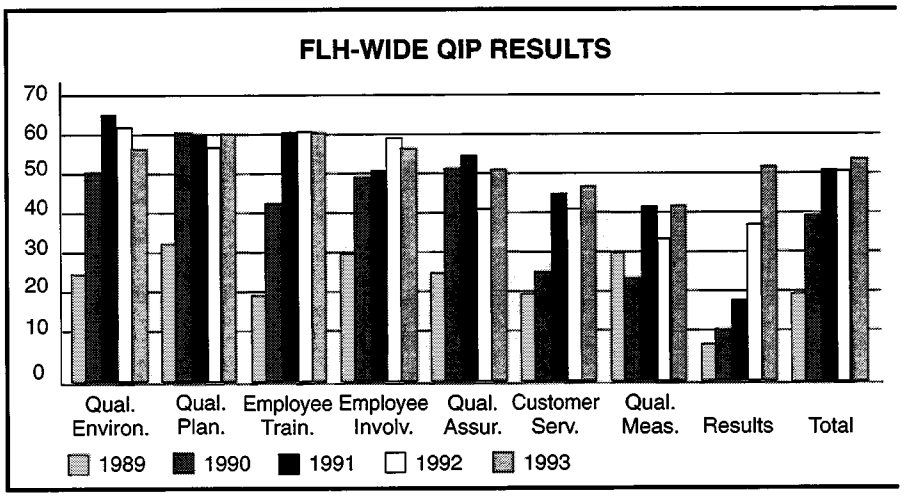
What does all the information tell us? What do you get when you combine the results of the FLH Cultural Survey, the FLH Listening sessions, the QIP assessment?

First, you get a pretty good idea of what is on the minds of FLH employees these days. The surveys may have missed a few FLH employees, but only if they wanted to be missed.

FLH LISTENING SESSIONS 1994
AREAS WHICH NEED IMPROVEMENT



- The Cultural Survey received responses from 390 (63%) employees on a voluntary basis. Less than one percent of all the possible responses resulted in no answer. Fewer than 5% used the "Don't Know" response.



- Listening session involved about 400 employees.
- The QIP assessment included all DQC members.

Second, you see that people are quite pleased with the social environment in FLH. We get along pretty well with one another.

- The second highest category on the cultural survey was, "Employee Interactions."
- One of the top QIP assessment items was, "Quality environment."
- Listening sessions reported that we are doing a good job with interoffice communications, and wellness.

Third, you see that FLH people believe they and their coworkers have very high ethics.

- The highest of the 20 cultural survey categories related to employees appreciation for values and ethics (4.97 out of 6.0).

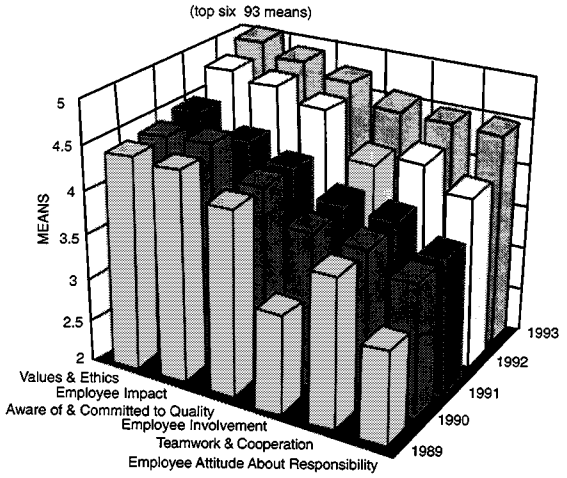
Fourth, you see that people are very concerned about their ability to do a good job. We are task-oriented, project oriented, our people say, "Give me the assignment, give me an idea of what success looks like, then let me at it." Items that suggest we know what the job is and want to do it well:

- The three highest scoring questions on the Cultural Survey were:
  - Every employee needs to contribute to quality improvement (5.29)
  - Employees try to do a good job (5.22)
  - Employees in my work group cooperate with each other to get the job done (5.10)
- Employees aware of and committed to quality (4.6)
- Improve plans and specifications (Listening)
- 4th Quarter Awards/Scheduling projects (Listening)
- Need more time to do good work (Listening)
- Concern about quality measurement and quality assurance (QIP)

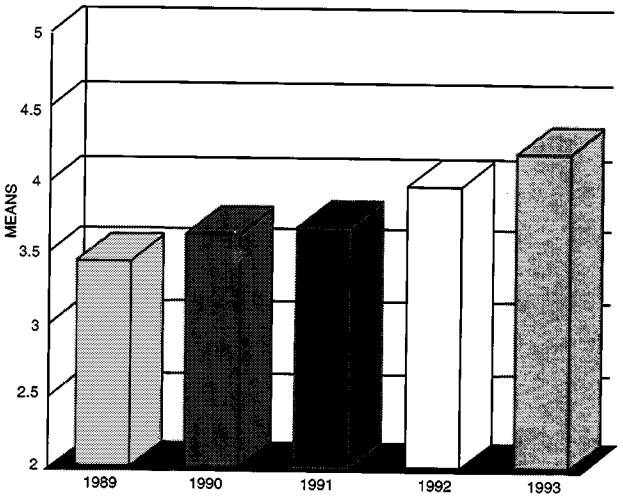
Fifth, you see what we predicted in last year's resource analysis, if we keep piling

FLH Cultural Survey Yearly Means per Category, 1989–1993

(top six 93 means)

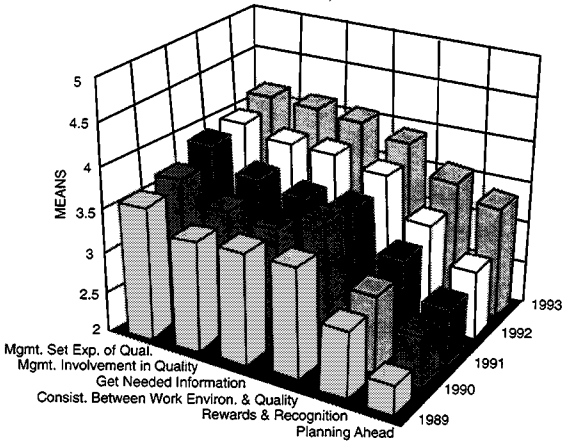


FLH Cultural Survey Yearly Means for All Questions, 1989–1993



FLH Cultural Survey Yearly Means per Category, 1989–1993

(bottom six 93 means)



on the work without providing more people in FLH or substantial organizational changes, quality is going to suffer.

- The QIP and cultural assessment both indicate problems in the "Work Environment."
- People sense that sometimes there are no penalties for poor performance and that some people are overlooked for promotion even though they are deserving.
- Employees have problems being able to plan ahead for policy changes that impact the work.
- The listening session and the cultural survey both show that employees see an imbalance between the number and skill level of the people we have when compared to the work that needs to be done.

By just taking a few steps back and scanning all the information, you can hear employees say, "I'm a hard worker and I really want to do quality work—but the 'system' is not letting me do it." The Strategic Business Plan for FY '95 and beyond will target the areas which most need to be improved. Maybe we can't change the whole system, but with our excellent people and a good plan, we can make things better.

Spring 1994

Process Analysis Standardized

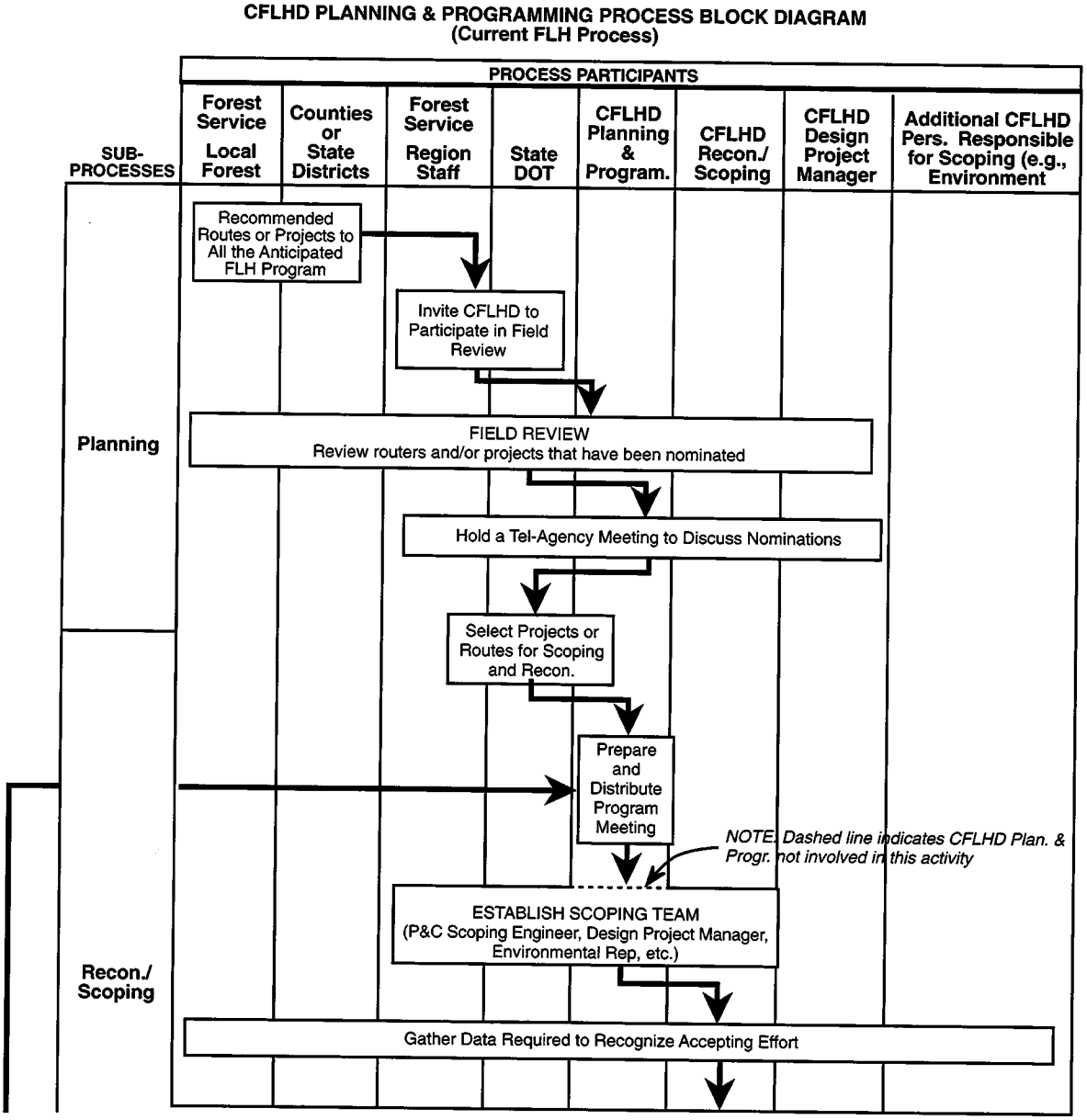
The PMT Process–Just the Facts Ma'am!

by Jim Amenta, Eastern

The Winter Olympics inspired many of us. Even the ads were inspiring. The Prudential "Straight Talk" ad was reminiscent of the old television series Dragnet and its no-nonsense script. Here's the same approach used to describe one of our most exciting quality initiatives:

FACT—Process Management Teams (PMTs) were developed in December 1992 to define processes within the FLH divisions. Once a process has been selected, the steps for the PMT are:

- TQM Coordinator schedules tentative meeting dates.
- Section head of the process to be reviewed and TQM Coordinator meet to discuss selection of team members, facilitators, and stakeholders (individuals who hold some share in the management responsibilities of the process, usually they are staff officers and key personnel involved in the process).
- Section head selects process owner. (Coordinates the various functions and work activities at all levels of the process, with authority to make changes in the process as required and manages the process end-to-end. The process owner is also responsible for developing the block diagram and the meeting minutes for distribution.)
- At the next regularly scheduled Division Quality Council meeting, the stakeholders approve the process owner, team members, and facilitators.
- TQM Coordinator develops final schedule and makes reservations for the meeting facilities.
- Stakeholder Session I:
  - Session introduction/orientation by facilitators.
  - Sessions I to V discussed to get overall picture of objectives of the PMT process.
  - Clarification/definition of process and roles of the key players.
  - Identify process boundaries. This is the critical step by stakeholders to decide where process begins and where it ends, to provide team guidance in developing the block diagram.
  - Develop Team Charter. This includes the purpose of the process. PMT objectives: clarify customer requirements, develop key measures, and provide recommendations to improve the process. PMT benefits: to establish better, effective customer involvement, meet and exceed customer requirements, and improve the product quality. Deliverable items from PMT process: a defined process, key measures, and an implementation plan to carry out the PMT recommendations. Stakeholders expectations: key measurements that monitor the improvements, more effective



Block Diagram Example

customer coordination, and identification of opportunities to improve the process.

- PMT Session I
  - Orientation of all PMT members (no stakeholders present). This includes overview of the PMT process, discussion of future sessions, and review and acceptance of the stakeholders Team charter.
  - Dismiss all team members not directly involved in building the block diagram.
  - Facilitators provide explanation and samples of block diagrams.
  - Remaining team members develop the block diagram of the existing process with assistance from the facilitators.

- HOMEWORK. Distribute block diagram to stakeholders, team members, and internal customers (within EFL) who develop and provide comments for PMT Session II.

- PMT Session II
  - All team members and stakeholders attend meeting.
  - Block diagram posted on wall of existing process.
  - Stakeholders provide comments and make recommendations on the block diagram and are then dismissed.
  - Team discusses stakeholders, team members, and internal clients comments and incorporates them into the block diagram.
  - Team selects internal/external customers/clients for interviews.
  - HOMEWORK. Distribute block diagram to selected individuals to be interviewed prior to the interview. Interviews to be conducted with both internal and external customers/clients requesting input for the out-of-control points (those areas of the process that are out of control and are therefore causing problems in the process) or areas that are working well. Interviewer to make notes identifying red dot (out of control)/ green dot (areas working well) areas to bring to PMT III for input on the block diagram. Interviewer will also request improvement ideas for the out-of-control points from the customer/client.

Location Process Quick Hits

L = Low Impact to Process
H = High Impact to Process

1.	Establish who and when underground utility information is obtained	H	P. Schneider
2.	Meet with hydraulics prior to writing survey instructions for input	L	B. Roberts/ T. West
3.	Project Manager sends memo to P&C after to set up scoping meeting if Parts 1 & 2 have not been received	L	K. Atkins
4.	Preliminary Design sends memo to bridge giving approximate date they will receive bridge sites	H	J. Seabrook
5.	Meet with geotech after alternative analysis has been performed to establish geotech needs	L	P. Schneider
6.	Include exact superelevation and widening values on bridge site plans	L	J. Seabrook
7.	Provide photolog of bridge sites if bridge not on scoping field review	L	P. Schneider/ T. West
8.	Preliminary design to meet with Team Leader when transmitting Preliminary Design Package	L	P. Schneider/ J. Seabrook
9.	Develop checklists for various activities	L	K. Jacoby
10.	Environmental documents always provided to designers if available	L	K. Atkins
11.	Use automatic data collectors on all surveys	H	T. West
12.	Develop comment sheet for internal client comments	L	J. Seabrook
13.	Develop internal client questionnaire for projects	L	P. Schneider/ T. West
14.	Fly more jobs rather than using ground survey	L	P. Schneider/ T. West

Example of PTM Results

- HOMEWORK. Process owner to post block diagram at next staff meeting to allow stakeholders opportunity to place red dots and green dots on the block diagram prior to PMT III.

- PMT III
  - Finalize block diagram of existing process.
  - Identify out-of-control points on the posted block diagram with red dot/green dot exercise.

- Brainstorm improvement ideas for the out-of-control-points.
- HOMEWORK. Process owner sends out list of out of control points and improvement ideas to internal/ external customers for comments.
- HOMEWORK. Team determines if internal or external customers interviews are necessary and, if required, conducts interviews.
- HOMEWORK. Process owner presents out-of-control points and improvement ideas to the stakeholders and who they may recommend further improvements.

■ PMT IV
- Finalize out-of-control points.
- Finalize improvements.
- Brainstorm measurement ideas that measure improvements (e.g., actual hours for preliminary design verses scheduled hours for preliminary design x 100 = ____%).
- HOMEWORK. Interview those involved with the process (internally) for measurement ideas.
- HOMEWORK. Process owner presents measurement ideas to stakeholders who may brainstorm to develop or refine measurement ideas.

■ PMT V
- Finalize measures.
- Assign team members to gather measurement data to give to Process owner.
- Develop implementation plan which assigns individuals the responsibility of completing the task of collecting and tracking the measurements that are tied to the improvements on the block diagram. The implementation plan has short term (quick hits) and long term improvements with target completion dates assigned to each of them. Some of the quick hits can be implemented immediately to help correct out-of-control points on the block diagram.
- HOMEWORK. Distribute the implementation plan to the stakeholders for review.

■ Stakeholders Session II
- Approve the implementation plan.
- Prioritize items to be implemented.
- Correction of the existing block diagram and providing a final block diagram of the new process with all the improvements incorporated. This block diagram becomes a comprehensive representation of the new and improved process and is done by the process owner.
- Champion and follow through on the implementation plan (process owner).

FACT—To date, EFL has completed three PMT's, Location, PS&E, and Bridge with Environment to begin March 1, 1994.

FACT—The Location and PS&E PMT's used approximately 1080 hours per PMT. The Bridge PMT used 953 hours or a 12% reduction in effort. This was accomplished through revision of the PMT process. Initially FLH had a consultant to show us how to analyze our processes and improve them. After the Location and PS&E PMT's, the facilitators and process owners believed that they could eliminate some

portions of the PMT process and still obtain the same results. We have not only cut the amount of time to complete the process, we have also removed the cost associated with having a consultant run us through the process.

FACT—The PMT process is time consuming, but it has identified the areas where we need to concentrate our improvement efforts. Many of these improvements have already been implemented as identified on the quick hit lists.

Summer 1994

Customer Satisfaction Soars

Customer Satisfaction Through Partnering

Where is the payoff from organizational improvements? To a quality organization, the measure is customer satisfaction, not money alone. Partnering is a primary part of FLH's work toward quality and it is a contributing factor to the organization's customer satisfaction. The money saving is there also, but the driving force is meeting customer needs.

Partnering in FLH affects both design and construction. In 1994, FLH developed, piloted, and then conducted its first formal measure of customer satisfaction relating to completed project development work and completed construction projects.

Questionnaires were provided to all client agency contacts for every project completed by FLH in 1993. This is the first data set for a continuous measurement system. In the future, questionnaires will be sent to clients shortly after projects are completed. Data will be collected and summarized periodically to track performance on an ongoing basis. Feedback is provided directly to the FLH managers who can benefit from it.

It is fascinating to see what FLH's customers have to say. Actually, it is more than fascinating, it is remarkably positive.

For all FLH, results are summarized in the following tables. The percentages reflect the fraction of the highest possible score, typically described as "completely," or "always":

Project Development

For the 56 Project Development efforts completed in FY 1993, there were 145 questionnaires returned by customers.

- Management Practices—84%
- Division Effectiveness—83%
- Product Quality—85%
- Project Requirements—85%
- Final Design Customer Satisfaction—89%

Construction

For the 45 construction projects completed in FY 1993, there were 97 questionnaires returned.

- Management Practices—83%
- Meeting Technical Requirements—90%
- Quality Assurance—93%
- Aesthetics—90%
- Public Reaction—50%
- Traveler Accommodation—86%
- Homeowner Accommodation—86%
- Overall Customer Satisfaction—86%

Fall 1994

Advanced Teamwork

Self-Directed Teams
Some teams may have more authority than others. The most powerful and authoritative team is an executive leadership team like the FLH's Executive Quality Council. The next most powerful team is one that is self-directed or self-managed. Here are some of the characteristics of self-directed teams:

- They do the "regular" work,
- They are permanent,
- They plan, operate, and control their part of the work,
- They rotate team leadership,
- They each know more than one part of the work to be done,
- They are highly skilled in team processes and operations,
- They train others on the job,
- They have a lot of management support,
- They make decisions within their boundaries, such as who performs certain jobs, work schedules, vacation schedules, discipline, and
- They are accountable for work getting done.

The Quality Coordination Team recently benchmarked several high-performance teams at a conference in Florida. One of the speakers pointed out that teamwork is not the objective. Performance is the objective. If your part of the organization can achieve the best performance using a team; then a team is necessary. If the best performance is achieved by one person's creativity, then you should let that person do his or her "own thing."

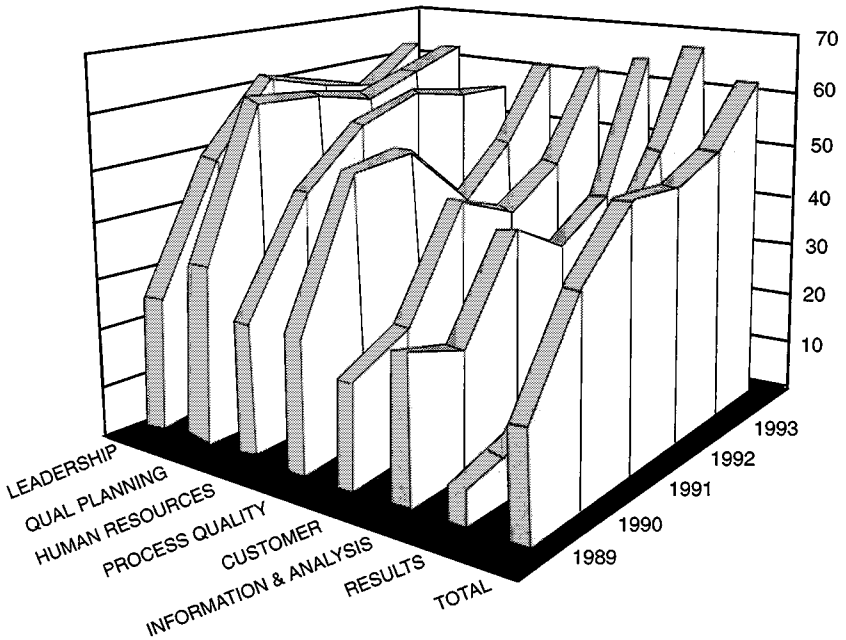
Current management thinking suggests that the concept of people having "jobs" is rapidly evaporating. Rather than having the boundaries of a "job," all members of an organization rally to the work that needs to be done, contributing to the best of our ability. Whether in a team environment or not, keep in mind that we are seeking the best answer, the best product, or the best solution.

Winter 1995

FLH Beats Presidential Award for Quality Winner

FLH Quality Improves for Sixth Year
The theme of this issue of the *FLH Quality News* is "Lessons Learned." The very first thing FLH's top officials learned in trying to implement change was to get outside their own organization in order to expand their thinking. The second thing they learned was to measure progress over a significant period of time so FLH can demonstrate whether changes are having an impact. In 1989, FLH began measuring its overall orientation to quality using an assessment developed by the Federal Quality Institute (FQI). According to the FQI, an agency that can achieve a rating between 600 and 800 on their 1,000 point quality assessment scale has "a well developed, systematic quality management approach with

FLH Quality Improvement (through 1994)



excellent functional integration that has been implemented in most parts of the organization." James Weathersbee, Executive Director for Corporate Operations of the Naval Air Systems Command which won the 1994 Presidential Award for Quality says they scored 600 on their internal assessment this past summer.

The FQI's December 1993 Self-Assessment Guide provided the methodology for this year's continuation of the FLH Quality Improvement Prototype (QIP) review. With consultant assistance from Dr. Al Gunneson of The Gunneson Group, the Quality Coordination Team conducted the November 1994 FLH review as a "peer" review with a couple of interesting wrinkles.

In past years, the Quality Coordination Team (QCT) got together, sometimes with a selected group of managers, to come up with the annual assessment. The QIP assessment has tracked the overall quality efforts in FLH since 1989. With new team members and a new guide from FQI, our primary coach (Tom Edick, Program Administrator) encouraged the team to get consultant help. In addition, the team decided to administer a questionnaire and then visit each FLH Division to review the responses and validate them by conducting selected interviews with employees, managers, and supervisors.

A formal report is being written by The Gunneson Group to be available in early 1995 in time to use the information to help direct the next FLH Strategic Business Plan. The bottom line is this—FLH has improved every year for 6 years with a 1994 increase that represents a breakout from 3 years with little progress. The 1994 score, using the FQI's scoring system, is about 630 out of a total possible 1,000. Just averaging the scores without weighting one more than another, shows 62 percent—up significantly from last year's 53 percent.

Winter 1995

Awards and Recognition Gets a Boost

New Brochure on FLH Awards and Recognition

Employee involvement is an essential quality management principle. Since making the organization-wide commitment to quality, FLH has moved to promote this principle. One of the ways FLH has done this is through an enhanced and varied system of awards and recognition.

The new brochure *Awards and Recognition*, which features a photo of the striking new Federal Lands Highway Award for Quality, is available in each FLH Division. This particular award is the organization's own version of the agency Administrator's award. The Executive Quality Council presents it annually to individuals and teams that embody the highest principles of quality in FLH. They demonstrate exemplary achievements in such areas as customer satisfaction, process improvement, strategic planning, or culture change. Managers and supervisors initiate nominations that are screened by the Division Quality Councils. The DQC's forward the best nominations to the EQC for final selections. While the annual number of FLH Quality Awards is not fixed, it is limited.

Other awards and criteria described by the brochure are:

- Eastern Federal Lands Highway Division's Employee of the Month Award,
- Western Federal Lands Highway Division's Construction Quality Award Program,
- Peer Awards in all Divisions,
- Eastern Federal Lands Highway Division's Certificate of Excellence Award and,
- The Bridge to Improvement suggestion program awards.

Spring 1995

Partner Agencies Directly Influence Long Range Plan

Federal Agencies Help Plan FLH's Future

The participants in the March 1995 Federal Lands Highway Strategic Business Planning meeting rated their satisfaction with the session at higher than 80 percent. One of the most significant successes of the 2½-day meeting was the active participation of key partner Federal agency representatives. In a fascinating panel discussion, the National Park Service, the U.S. Forest Service, the Bureau of Indian Affairs, and the Bureau of Land Management presented their perspectives of the future of Federal Lands Highway. Participants split into four work groups and used feedback from a number of sources to develop 5-year objectives, strategies, actions, and timetables for each of the four goals of the FLH Strategic Business Plan. These products are being refined for later publication as the new 5-year plan which will carry the organization to the next millennium.

An abridged summary of the feedback information used by participants to focus strategies and actions for improvement efforts follows.

Federal Agency panel discussion
Background: This is the first year of direct participation by Federal Land Management agency leaders in the FLH Strategic Business Plan. Each panel representative used about 15 minutes to provide input to the participants. Some of the partner agency leaders also participated in the break-out sessions which developed strategies and actions for the plan itself.

- Provide more help in Transportation Planning Efforts.
- Consider that transportation studies are the key to future development of Parks.
- Perform service-wide value analysis and assist customers in effective resource allocation.
- Control scope-creep.
- Develop port, terminal, and Intermodal connections and economic analysis tools for low-volume roads.
- Consider maintenance impacts on owner agency.
- Define appropriate levels of service.
- Spend more time up-front to develop better solutions.
- Provide earlier involvement in planning.
- Consider alternate transportation—not just highways.
- Seek active role with the Park Service on developing Park Road Program Multi-year Plan.
- Identify long-range transportation system needs when developing FH projects.
- Reach a common understanding on expected goals and results.
- Assist in strategic planning for BIA.
- Partner with post-streamlined field organization.
- Maintain balance between design in the office and on-the-ground construction.
- Re-evaluate roles in project development process.
- Design for end-user (not managing agency).
- Help educate client agencies on ERFO Program.
- Help balance short-term impacts with long-term needs. (Don't compromise true long-term needs for short-term resource impacts).
- Maintain critical skill levels (technical, communication, and corporate memory).
- Evaluate FLH program capability to be all things to all clients in the context of reduced resources.

Quality Improvement Peer (QIP) Assessment
Background: This is the sixth year for the QIP Assessment. This year's assessment featured a questionnaire, interviews, and a site visit by the Quality Coordination Team and a consultant (Dr. Al Gunneson of the Gunneson Group International).

- Overall score 63%—this was up from the previous year's 53%.
- Low score 51%—in the Human resources category.
- High score 65%—in the Results category.
- Most improved—Information & Analysis.
- Target for work—Human resources.

- Need to improve strategic planning and Coaching.
- Streamline the Strategic Business Planning Process.
  –Fewer planning actions
  –Monitor
  –Accountability

Cultural Survey
Background: This is the 6th year of the FLH Cultural Survey. The survey was administered by Interaction Research Inc. The overall score was essentially the same as last year, and results were first presented at listening sessions, then through a March memo transmitting the final report to all Divisions.

- Return rate 56.9%.
- Overall score 62.9%.
- Lowest scoring category: Planning Ahead, 48.0%.
- Highest scoring category: Values and Ethics, 80.2%.
- Most improved category: Employees are concerned with the need for quality.
- Targets for work:
  - Workload distribution
  - Planning Ahead
  - Getting Needed Information
  - Workload Balance
  - Quality Improvement Initiatives
  - Right Number of People to Accomplish the Mission
  - Rewards/Recognition (Discipline Poor Performance, Promotion When Deserved)

Listening Sessions
Background: This is the third year that FLH has held listening sessions. Most employees attended. This year's sessions were in a Town Meeting format. The primary concerns voiced by employees related to workload and rewards and recognition.

- Teamwork, self-managed teams, empowerment, decision making
- Understand, use, share, and be accountable to the Strategic Business Plan
- Improved planning and scheduling, priorities and future programs
- Partnering with suppliers and customers
- Improve Understanding of Customer Needs
- Incentives/Rewards/Recognition
- Technical Expertise in an A/E Management Environment
- A/E Process
- Follow-Through on Quality Initiatives
- Manage stress levels
- HQ/Field Roles

Customer Satisfaction Surveys
Background: This is the second year for Federal Agency customer satisfaction surveys for completed design and construction projects. Futron Corporation analyzed the results. Overall, results were slightly lower than last year but it is difficult to make broad conclusions since there is only one year to compare to and all projects are different from the prior year's projects.

- Project response rate: 94%
- Questionnaire response rate: 51%

Project Development
- Highest score 97%: Agencies would use FLH again.

- Second Highest score 95%: Design is consistent with requirements.
- Lowest score 50%: Meeting customer expectations.
- Targets for work: Meeting quality expectations; and "Departments"—Planning, Design, Environment, Geotech, Hydraulics.
- Customer comments: Lack of understanding of the process and communication

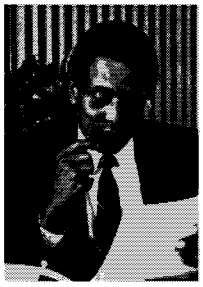
Construction

- Highest score 97%: Getting answers from FLH.
- Lowest score 50%: Public reaction
- Overall Quality score: 82%
- Targets for work: Exploring alternative resolutions to problems; and traveler and public response
- Customer comments: Need more inspectors on the jobs. Need to look at the change process.

The goal for the Strategic Business Planning meeting was to achieve a plan that was 90 percent complete by the end of the meeting. Although one group claimed 105 percent, the general concensus amounted to about 85 percent—close enough! Those who were working on the goals are following up with resource estimates and further refinements. By May a draft FLH Strategic Business Plan will be published and Division Action Plans will begin. Supervisors and team leaders throughout FLH will be providing information to everyone regarding how the Strategic Business Plan affects you and what it means to the whole organization.

The Federal agency panelists were: Beryl Johnston, Ted Fitzgerald, Skip Coghlan, and Tom Pettigrew—U.S. Forest Service; Jack Neckels, Jimmy Straughan, Ken Raithel, and Lou DeLorme—National Park Service; Joe Bonga—Bureau of Indian Affairs; and Larry Hoovestal—Bureau of Land Management.

Federal Lands Highway participants were: Tom Edick, Mark Chatfield—HFL-1; Allen Burden, Francine Whitson, Butch Wlaschin, Patrick Wlaschin—HFL-10; Hugh Jones, Dave Green—HFL-20; Gary Klinedinst, Jim Amenta, Clara Conner, Mary Daigle, Greg Dolson, Shoukry Elnahal, Vivian Hanna, Carol Jocaby, Otto Mayr, Don Miller, Julia Perry—HFL-15; Larry Smith, Bob Lale, LaVica Andre, Ken Burns, Larry Corbell, Larry Henry, Charlie Houser, Mary Jane Knoll, John Penzien, Bob Welch—HFL-16; Jim Hall, Phyllis Chun, Tom Hildreth, Paul Rettinger, Gina Sexton, Ray Schadt, Mary Ann Spurlock, Rich Wasill—HFL-17.



Spring 1995

Virtual Organization Introduced

The Virtual Organization

Not another buzz word! The "Virtual" organization?... Give me a break!

I had heard of virtual reality, virtual space meetings, and virtuous people, but when I heard of the virtual organization, I was surprised. Then I learned what it was and I realized that like "TQM," sometimes the name is more foreboding than the reality.

A "virtual" organization is one where different organizations collaborate to accomplish a function or task. There are

three forms of virtual organizations. The first is the temporary version, which is a network of businesses that come together for a limited time period to quickly address a specific opportunity. FLH does this on certain technology applications. The second type is where an organization focuses on its core competencies and permanently outsources everything else that it can to partners who are the experts in what they do. The National Park Service and the U.S. Forest Service do this with much of their road network by outsourcing the engineering to FLH. FLH, in turn, does some of this with Architect/Engineer and other special contracts. The third type is the "virtual office," where employees work at home, at a customer's location, and wherever they can connect electronically. FLH is moving in this direction with wide area networks, information sharing among agencies, along with flexible work schedules and locations.

In a March 7, 1995 letter to Melissa Spillenkothen, U.S. DOT Assistant Secretary for Administration, responding to the DOT restructuring initiatives, Charles Clapper, Jr., Assistant Director, Design and Construction, Denver Service Center Operations, National Park Service, acknowledged the concepts of the virtual organization relationship. Mr. Clapper said in his letter:

> "The excellent working relationship between the National Park Service and the Federal Highway Administration (FHWA) has been executed through a series of interagency agreements which extend back to the very early days of both agencies. FHWA and its predecessor, the Bureau of Public Roads, have played a major role in design and construction of the National Park Service parkways and park road systems. We would like to continue this superb relationship into the future."
>
> "We would hope that the Federal Lands Highway Division will be part of your new organizational structure and that it will be staffed at a level needed to perform the required technical assistance for the Park Roads and Parkways program. The many significant accomplishments of the Federal Lands Division under the Intermodal Surface Transportation Efficiency Act of 1991 for the National Park Service are greatly appreciated. However, the current level of funding has not been adequate to prevent continued deterioration of our park roads and parkways. The backlog of need has substantially increased during the past decade. We would appreciate any help you could provide us in the obtaining an adequate funding level and increased staffing for Federal Lands Highway Division upon whom we depend for engineering services on park roads."
>
> /s/ Charles P. Clapper, Jr.

Summer 1995

Bottom Line Quality

Corporations show results of their quality efforts by looking at their profits as the "bottom line." Since Government does not operate on a profit basis, its bottom line is

performance. What is produced with the tax revenues allotted? The results of Federal Lands Highway (FLH) work to provide quality products and services can be seen in the examples which follow. The recognition FLH receives is consistent with its vision, "To be recognized as the best highway engineering organization through people dedicated to excellence."

The Spring 1995 issue of *Public Roads* magazine featured the spectacular Western Federal Lands project in Wyoming's Grand Teton National Park. The wonderful photographs and the excellent article were provided by Gary Hunter, Western's project engineer. The same issue also included photos of Eastern's projects on the Blue Ridge Parkway in Virginia and North Carolina. A major article with more pictures recognized Central's General Hitchcock Highway in Arizona.

Earlier this year, Biennial Design Awards were given to three Federal Lands Highway projects. Eastern's Forehand Hollow Bridge on the Natchez Trace Parkway near Nashville, Tennessee won the Award of Excellence, the highest award for improvements on Federal, State, or other publicly owned land. The Central Division's Sentinel Bridge in Yosemite National Park and Mt. Carmel Highway in Zion National Park received awards of merit.

The description which accompanied the winning entry for the Biennial Design Award shows how Federal Lands Highway works with partners and suppliers to provide a facility that meets or exceeds the customers' needs:

"The Natchez Trace Parkway is one of the most historic routes in America. The 450-mile long trail was carved out of the wilderness by the Choctaw and Chickasaw Indians. The Parkway is owned and maintained by the National Park Service and the Eastern Federal Lands Highway Division is responsible for the design and construction of the Parkway and its structures. The terminus of the Parkway is Natchez, Mississippi, on the southern end, and Nashville, Tennessee, on the northern end. Just twenty miles south of Nashville, the Natchez Trace Parkway traverses Forehand Hollow and affords a view of the landscape as Andrew Jackson's militia may have found it as they marched home on this route from their victory at the battle of New Orleans. A tall deciduous forest covers the hills and hollows. The Forehand Hollow Bridge spans nearly 1,000 feet and was designed to blend in with the surrounding setting to provide a panoramic view for the Parkway traveler. The bridge rises 100 feet above the basin floor. Trees line both sides of the bridge and project gracefully through the inside sweep of a long 8-degree curve which fades into the woodlands. The Forehand Hollow Bridge also provides a striking appearance when viewed from the Waddell Hollow Road below. The segmentally constructed concrete box girder was cast-in-place span by span. As one span was cast and held in place by post-tensioning steel reinforcement, the falsework was removed and reused to cast another span of the bridge, resulting in a reduction in time and money. This structure has three middle spans of 200 feet each in length. The end spans are 165 feet in length. The abutments are accented with grassy slopes and rail fences which are traditional to this country-like setting. The superstructure with its decorative railing rests on four single column piers. The piers' unique geometric shape begins as a clipped hexagon that gently widens at their shadowed

connections to the superstructure. The photograph (page 1) gives one a glimpse of the engineering ingenuity and expertise employed in the design and construction of this bridge; the sensitivity to the preservation of the area; and the ultimate goal of affording the traveler a safe, scenic, and pleasing traveling experience."

Fall 1995

Partnering Update

How Team-Based Construction Improves Efficiency

By Bill Cross, HFL-22

In 1996 Federal Lands will reach a major kilometer stone. We will have initiated partnering agreements on more than $500 million worth of construction contracts. It seems hard to believe how successful this team-based program has been. The first two contracts partnered that began in the winter of 1991 perhaps were not disasters, but certainly were nothing to brag about. One ended up with a $6 million contract overrun and the other with a dysfunctional partnering team and a claim.

Since that ominous start we have initiated construction partnering on more than 70 contracts totaling more than $430 million. Fiscal Year 1995 has been the biggest year yet with (as of August 1) 24 new contracts totaling $149 million. Central Federal Lands has led the way with 14 of those contracts.

Federal Lands has received nationwide, even international recognition for its partnering program. In February Larry Smith was invited to co-present a paper on partnering at the International Conference on Productivity and Quality Research. In 1994 Tom Edick elicited gasps from the crowd at an Office of Management and Budget pledge ceremony on Alternative Disputes Resolution (ADR) when he pledged Federal Lands' entire Fiscal Year 1994 construction program for partnering. As a result of that pledge, Federal Lands was invited to send a representative to a Department of Defense conference on ADR at the Air University at Maxwell Air Force Base in the summer of 1994. Previous articles in the FLH Quality News (Summer 1994 and Spring 1995) continue to precipitate calls and inquiries from all over the country.

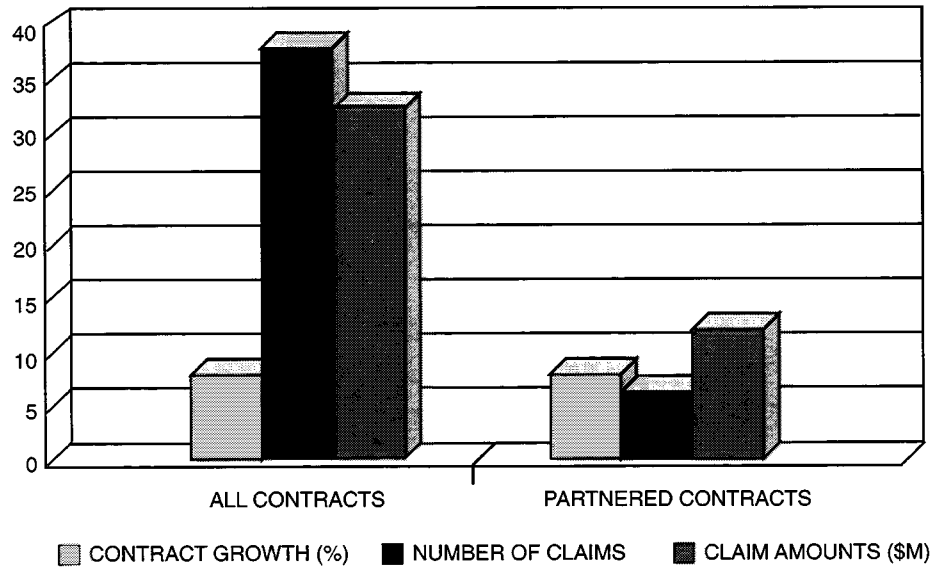
Partnering is using the principles of team building to jointly solve problems and resolve differences. But partnering is a special kind of team effort because the "partners" are traditional adversaries. In most contracts, including U.S. Government contracts as defined by the Federal Acquisition Regulation (FAR), each side has certain rights and responsibilities. As the contract progresses, interpreting and enforcing those rights and responsibilities often gives rise to differences in opinion which ultimately can result in disputes or even law suits. When a problem arises in a traditional contract, the Federal Acquisition Regulation (FAR) implies that it is either the Contractor's problem or the Government's problem. Partnering changes all that, not by overruling the FAR or Federal contract law, but by providing a framework within those legal constraints that permits a team-based framework for resolving the differences. Partners look at problems not as the responsibility of one or the other, but as the team's responsibility

to be solved jointly. Partners have empathy for each other's hopes, fears, and objectives. Energy is directed at the successful completion of the project, rather than at posturing and disputes. In the end there is a synergy where the team is stronger and more productive than the cumulative strength of all of its members.

The results of partnering to date are very encouraging. In the nearly five year period since Fiscal Year 1991, Federal Lands received 38 claims on construction contracts, but only six of these claims were on partnered contracts, although more that half the work (in terms of dollars) was being partnered. Except for one very large claim on a Cumberland Gap contract which started out being partnered, claim amounts have been modest as compared to non-partnered contracts. As for contract growth, the Department of Defense reports this statistic as about the same on partnered and non-partnered contracts. But for Federal Lands contracts cost growth has, so far, been about 15 percent less on partnered vs. non-partnered contracts. This statistic suggests current savings of more than $1 million per year, with projected savings of nearly double that if we partner all "difficult" contracts. Two million dollars plowed back into asphalt, concrete, and other tangible program delivery items is nothing to sneeze at.

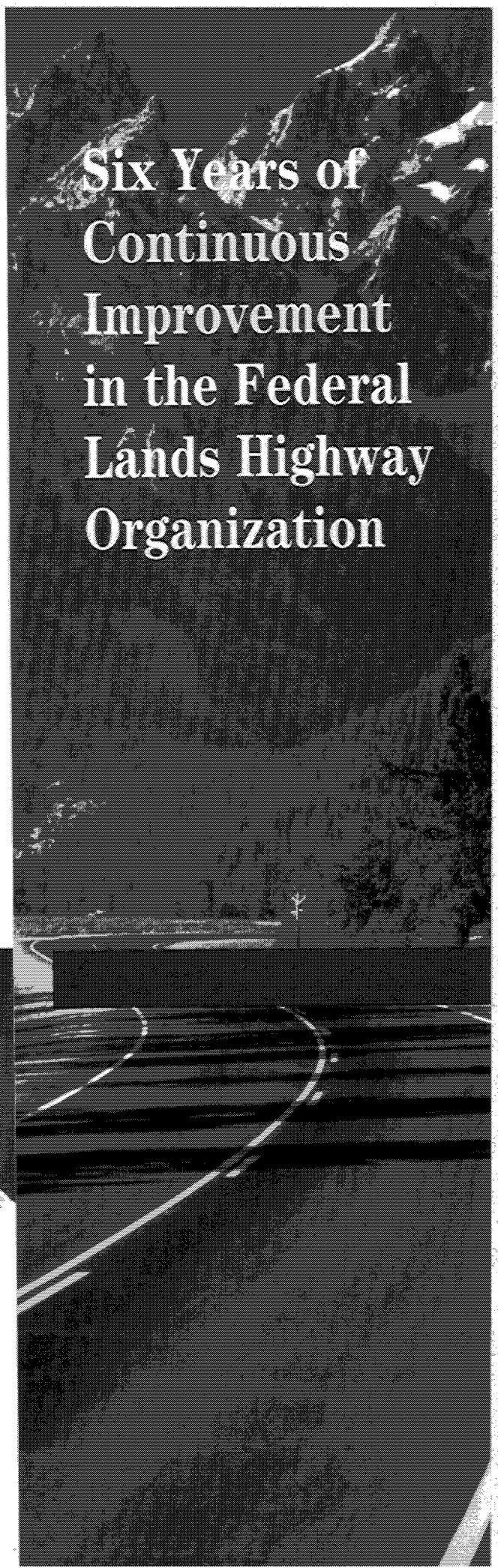
Partnering is a success story. But it also has been a precursor to Federal Lands' overall move to a team-based organization. Like other team-based concepts, partnering requires skills, training, and even attitudes which go beyond the technical skills many of us expected to be the foundation of our careers. Especially we ancient technical types never expected that "people" based skills like partnering would come to so dominate our lives. Certainly a salute is deserved by all of the construction and other personnel who have worked so hard to make partnering succeed.

PARTNERING RESULTS IN FLH
October 1990 to August 1995



Newsletters

1990 to 1995



Volume 1 Issue 1

FLH QUALITY NEWS

U.S. Department of Transportation
Federal Highway Administration

INTRODUCTION

This is the first of what is planned to be a periodic communique to keep Federal Lands Highway (FLH) employees nationwide informed as to what is going on in our organization. This edition is a summary to bring everyone up-to-date on what has come to be known as "Total Quality Management." For future editions, we encourage your input and participation in making this a publication for all of us.

HISTORY

For several years, the three FLH Divisions and headquarters have felt the need for tools or improved techniques for effective management of shrinking human resources to meet increased program requirements while maintaining or improving the quality of our products and services. By 1988, Clara Conner, working under the direction of Gary Klinedinst, in Eastern and Pat Wlaschin, at the direction of Jim Hall, in Western were working on development of computerized work activity scheduling systems. Division Engineer Jerry Budwig was looking at the New Mexico State Highway and Transportation Department's automated system for scheduling and monitoring projects.

Concurrent with this, the Federal Highway Administration (FHWA) was in the process of developing an inventory of program functions for possible inclusion in the Government-wide Productivity Improvement Program. This program was established by Executive Order in February 1986 to provide a framework for improving Federal productivity. The Office of Management and Budget (OMB) issued Circular A-132, Federal Productivity and Quality Improvement in Service Delivery (April 1988), to provide guidelines for the development and implementation of a productivity and quality improvement process in the Executive departments and agencies.

PRODUCTIVITY PAYS - QUALITY SAVES

The FLH Program was included on FHWA's inventory of program functions. In 1988, the Program Administrator agreed to participate in the Productivity Improvement Program through the development of a Total Quality Management (TQM) Plan for the FLH Office, and development of a resource monitoring and program scheduling system to support the TQM effort.

The Program Administrator called a meeting of Division Engineers and appropriate Division and headquarters staff members in New Mexico in August 1988 to discuss management system needs and to receive a demonstration of the scheduling/monitoring system then in use at the Highway Department. Out of the New Mexico meeting there emerged a project for development and installation of TQM principles in Federal Lands supported by systems to schedule and monitor work activities and manage resource usage while keeping tabs on quality. The project is guided by a steering committee (Executive Quality Council) consisting of the Program Administrator; headquarters Division Chiefs

Al Burden and Larry Smith; Division Engineers Gary Klinedinst, Jerry Budwig, and Jim Hall. The project is staffed with a team (Quality Coordination Group) consisting of Division Coordinators Pat Wlaschin, Bert McCauley, and Clara Conner; Karen Kabel and Bill Marshburn from headquarters Office of Management Systems; and Project Manager Jerry Rolland.

QUALITY AND TQM

So what is "quality" and what is "total quality management?" Quality is defined as consistently meeting the customer's expectations. Total Quality Management, or TQM, is a strategic, integrated management system for achieving customer satisfaction which involves all managers and employees and uses quantitative methods to continuously improve an organization's processes. Key elements of TQM are top management support, customer focus, long-term commitment, employee involvement, effective and renewed communications, reliance on standards and measures, and the provision of training, rewards, and recognition.

EMPLOYEE INVOLVEMENT EMPHASIZES OPEN COMMUNICATIONS, PARTICIPATIVE PRACTICES, AND TEAMWORK.

The following figure illustrates some of the key elements of TQM and their relationships to the three primary strategies.

ACCOMPLISHMENTS

TQM project accomplishments to date have been in the areas of long-term commitment, top management support and direction, and development of standards and measures. The Program Administrator and other top FHWA officials have made a firm commitment of significant dollar and personnel resources to this project. Top management support is further demonstrated by the numerous meetings of the Executive Quality Council and the Quality Coordination Group that have taken place to guide and implement the plan, and by the training that has been provided to management personnel. (Training is not restricted to management personnel. More about this later.) One of the Executive Quality Council meetings was devoted exclusively to development of a vision statement, a mission statement, and a set of guiding principles for Federal Lands Highway. The statements are the product of intense, serious deliberations and represent management's commitment to our organization and its future. Arrangements are being made for appropriate distribution, display, and use of the statements.

OUR VISION:
"TO BE RECOGNIZED AS THE BEST HIGHWAY ENGINEERING ORGANIZATION THROUGH PEOPLE DEDICATED TO EXCELLENCE."

As part of the effort to develop a work scheduling/monitoring system, several management units (e.g, Bridge, Design, etc.) have been identified in the field divisions. Numerous interdivision management unit team meetings have been held to develop a work activity flow chart, work effort estimates, and quality level goals for our work activities. These will be used in the automated scheduling/monitoring system being developed. While some followup is necessary, these efforts have been very productive. The management unit team participants are to be congratulated on the success of this effort.

Work is proceeding aggressively on the scheduler/monitoring system. Projects from the FLH 5-year program are currently being loaded into the project scheduling software at each Division. The scheduling software (which works on the Critical Path Method) will produce reports giving start and finish dates for each activity that makes up a given project. Managers can possibly begin using this system to schedule work on all projects in each division by early CY90.

UNDERSTAND CUSTOMER NEEDS AND EXPECTATIONS

FUTURE PLANS

A series of 1-day TQM orientation sessions for all employees is being developed for late CY89 and early CY90. This training will include ideas to help individuals focus on their customers. (In TQM, customers are both external and internal.)

Plans are in the works for contests, open to all emplyees except the Executive Quality Council and the Quality Coordination Group, to select a symbol and a slogan for FLH. Significant cash awards are planned for those submitting winning candidates in each Division and headquarters, and for the developers of the finally selected symbol and slogan. Watch future editions of your newsletter for the announcement.

Also, plans are underway to formulate quality teams in the Divisions and headquarters. These will give everyone an opportunity to help identify problems and develop solutions. In addition to quality teams, we will be developing new, dynamic suggestion and award programs. In the

interim, everyone should feel free to offer ideas through the existing programs or through their supervisors for improving the quality of our products and services.

QUALITY IS EVERYONE'S RESPONSIBILITY

Constant communication and feedback are critical to the success of the TQM process. This newsletter will become a primary means for communicating everyone's "total quality" concerns.

INFORMATION

The Quality Coordination Group congratulates FLH employees on the very high level of participation in the recently conducted organization cultural assessment survey. The survey results will be used to formulate plans for improvement and to measure how well FLH is implementing TQM over time.

Following is a brief tabulation of some of the data collected. The tabulation is for the "climate" portion of the survey, which was sent to all employees. The questions in this portion addressed such matters as "vision for the future," "concern for improvement," "awareness of quality issues," and "perceptions of work environment." For the "climate" survey, possible scores ranged from 1 to 6 with scores above 3 considered good. The following tabulation shows the relative scores of various groups of employees:

Climate Assessment Total Scores

Group	Average of Scores
All Employees	3.90
Eastern Division	3.86
Central Division	3.83
Western Division	4.03
Headquarters	4.28
Administration	3.83
Project Development	3.84
P&C	3.96
ADP	4.32
Bridge	4.02
Construction	3.86
Materials	3.83
More than 2 Years	3.84
Less than 2 Years	4.07
Permanent	3.84
Temporary	4.18
HETs	4.10
Managers/Supervisors	3.85
Non-Managers	3.93

Additional tabulations have been developed and are not secret. Persons interested in further information on the survey should contact their Division Quality Coordinator.

WANT YOUR PART OF $3,500???

MAKE PLANS TO ENTER FLH'S SLOGAN/SYMBOL CONTEST!

WATCH FOR CONTEST RULES IN NEXT EDITION.

Publication No. FHWA-FL-90-001
HFL-20/11-89(750)P

Volume 1 Issue 2 Spring 1990

FLH Quality News

U.S. Department of Transportation
Federal Highway Administration

As you have probably noticed, your TQM Newsletter has grown somewhat since the first issue. Perhaps this reflects increases in TQM activity, awareness, and interest. While these increases are desirable, we promise to keep the Newsletter from growing to an extent that it becomes a chore to read.

In this issue, we have achieved our goal of printing items written or submitted by individuals from each of the four offices. Everyone's participation is invited.

Hopefully, by the next issue we can announce the winners of the symbol and slogan contest and have our new symbol and slogan incorporated into the Newsletter masthead.

Our Vision: "To Be Recognized as the Best Highway Engineering Organization Through People Dedicated to Excellence."

WHAT IS A "CUSTOMER"?
by
Mark Chatfield (Federal Lands Highway Program Engineer, Headquarters)

When the headquarters and Eastern Federal Lands Division received TQM orientation last month, there were several lively discussions. One had to do with the term "customer."

First, some considered the term too oriented to the private sector to be meaningful in Federal Lands Highway circles. Second,there seemed to be some confusion as to just who a "customer" would be in a given circumstance. Finally, the looseness of the definition seemed not to fit into traditional "engineering" thinking.

Maybe we are discovering something. Maybe we have been doing things the same way for so long we are unable to grasp a new concept. Possibly the term is not appropriate for us and we should adopt a substitute. I have to admit that I feel just a little bit like a used car salesman when I refer to someone as my customer. Should I?

During the orientation, one of the transparencies said:

WHO IS THE "CUSTOMER"?

THE CUSTOMER IS THE DIRECT RECIPIENT OF THE PRODUCT OR SERVICE AND IS THE SOLE DEFINER OF ITS "QUALITY".

Wonderful. If I only have one customer, I only have one definition of quality. The trouble is, there is nothing I do that provides a product or service to only one recipient. For example, a letter advising the Divisions that a new environmental policy is in effect. If the Division Engineers are my customers, I have three. If the Environmental Coordinators are included, make it six. If there is a subsequent notification to field offices of the other Federal agencies, make it 30 or 40. Well, that is complicated enough, but I can't just type up a letter and sign it out.

First, I must draft it and have a secretary put it in final form - is my secretary my customer since she is receiving the draft from me? Then Al Burden (my boss) looks

it over. Is he now my customer? After Al signs off, Tom Edick (his boss) receives it for signature. Is the Federal Lands Highway Program Administrator also my customer?

So far the count is about 50. Who is my customer, and how can they all be the sole definers of the quality of my little letter?

Luckily, an article in the back of the TQM Manual helped out. William Zierdan says:

"'Customer' is defined as the next person down the line from any individual or department providing a service or producing a product."

"Down the line" is interpreted to mean the next to receive. In other words, the very next person who will see or use or be asked to act upon what ever I give them. In the example of the letter to the Divisions, when the secretary receives my scribbled draft or half-mangled diskette - she is my customer. After the letter is put in final form and I initial it and put it in Al's in-box, Al is my customer. Period.

When Al is satisfied with the product I gave him, it is no longer mine, but his. When he presents it to Tom for signature, Tom is Al's customer, not mine. The idea is not to establish a "pie-in-the-sky" customer, some nebulous concept of "the public" or "the taxpayer," but the very next individual or agency who receives the product. This is the essence of a market driven economy. This does not mean I can ignore what the Divisions need or what Tom wants, but it means that my primary task is to achieve a level of quality that will satisfy Al - the first time and every time. Since I know Al won't be satisfied unless Tom's conditions are met and the Divisions' needs are considered, my letter must be prepared accordingly. Nothing can be ignored, but my focus must be on my one customer - the very next person who receives what I prepare.

TEAMS AND TEAMWORK

by
Pat Wlaschin (TQM Coordinator, Western)

Great Beginnings

The spring of 1990 will be remembered as a time of blossoming Quality Action Teams (QATs) in Federal Lands Highway. At latest count there have been over 25 QATs formed throughout headquarters and the three Divisions. The Executive Quality Council and the Division Quality Councils have been formed and have discussed their composition and operational procedures. A Multi-Division QAT has been formed by headquarters to address employee suggestion and incentive programs. In the Divisions, teams are addressing how to increase customer satisfaction and how to provide continuous improvement within office services, CADD usage, materials, safety, and others.

Many of these teams have been formed by management to solve a specific problem. Others have been formed by groups of employees intent on improving the quality of their products and the quality of their work environment.

Why Facilitate?

What is the difference between the way we used to hold meetings and the way we hold them now? The answer is, we now have a facilitator. The facilitator's role is to guide the process by which the QAT reviews and resolves their issues. The facilitator uses a structured approach, brainstorming, and nominal group technique to resolve problems. Statistical Process Control (SPC) is another tool the facilitator can use to track the QAT's progress and success. Our facilitators will continue to improve as they receive more feedback from you, their customers, and as they receive more training.

High Performance Teams

What makes a team successful? Why does one team seem to get more done than another similar team? The answer to these questions is addressed in a training class sponsored by a company called "Performance Training Corporation." Their belief is that a team needs vision, responsibility, development, synergy, and power to become a high performance team.

• Vision - The team is united in its work toward common goals and objectives. The team members begin their project by initially agreeing on their common purpose.

• Responsibility - The team shares and accepts responsibility. All team members have duties and responsibilities. All share in the work toward the common vision.

• Development - The team develops its members, their capabilities, and their communication methods. As the team progresses the members grow as individuals and as a unit.

• Synergy - The team experiences synergy through trust and support. Synergy is the energy that holds the team together. It allows the team to do more than the separate individuals could have done working alone. It is based on mutual trust and support.

• Power - The team is powerful in its ability to get the job done. Coordination of effort and unity in direction give the team its power to achieve great results.

Teamicide

There are many traps and pitfalls that a team may encounter during its life. Several of these have been listed in a book titled, "Peopleware, Productive Projects and Teams." This list consists of Defensive Management, Bureaucracy, Physical Separation, Fragmentation of People's Time, Quality Reduction of the Product, Phony Deadlines, and Clique Control. This book devotes several pages to these items and how to recognize and avoid these dangers.

Employee Responsibility

One of the three principles of TQM is to increase the employees involvement in increasing the quality of our products. Full participation on QATs is an excellent method of increasing employee involvement. Membership on teams is often requested by management and by supervisors. Other team positions are often filled by volunteers. Your involvement is encouraged.

Early Successes

The major successes from some of these early QATs is the large number of brainstorming ideas that are being suggested as possible solutions to problems. Congratulations everyone!

Several teams have focused their efforts on reviewing the processes they use to add value to their products. This is one of the key aspects of TQM, the process review. Other teams are meeting and brainstorming ways in which to increase their customer's satisfaction. They have found that to increase these values, they must first establish a measurement system. Customer surveys are being used more and more. Remember, when you fill out one of these questionnaires, you are helping FLH to continuously improve in many areas.

Teamwork Can Move Mountains

TEAM BUILDING
by
Bert McCauley (TQM Coordinator, Central)

Team Building Concepts

Central to TQM is the concept of obtaining input to problem identification and problem solving from all levels of employees. This is accomplished using teams composed of a vertical slice of front line personnel. Ideally, these teams should also be empowered to implement solutions within their branch if these solutions do not impact other branches directly.

The process of building a team should be given as much attention initially as what the team is to do. How a team does what it does is just as important as what it does. Without a team structure (rules for conduct, team purpose, and goals), problem solving that produces quality teamwork cannot be realized. The groundwork must be laid to encourage the systematic examination of work processes using group problem solving and decision making techniques.

Teams should not operate in a vacuum. Solutions can be made more comprehensive and have a better chance of success if all facts are included in the analysis and management is kept abreast of the teams' progress. To this end, branch chiefs and line managers should serve in an advisory capacity to teams as requested. This is the coaching role of the manager in a participatory management system.

Team Building Guidelines

General guidelines for building a structured team environment are as follows:

A. A team should consist of no less than 4 members nor more than 12. Four to nine is desireable.

B. A structured approach should be used to conduct business. Facilitation for teams should be provided by persons from another branch.

C. A team must agree on three things before any work can begin. The team must agree:

1. To work together as a team; that is, establish ground rules for team member interactions and responsibilities by developing a Procedural Contract for team business.

2. On the purpose of the team; a simple statement of the team's mission or vision should be developed.

3. On specific goals and the meaning of these goals that are aimed at realizing the team's mission.

An example of a team's vision (or mission) might be to produce the best car on the road. Specific goals might be to make it more fuel efficient or faster or more aerodynamic, etc., than any other car on the road.

D. A team should meet as frequently as possible so that team momentum can be maintained. A team spokesperson can be appointed to coordinate meeting dates and locations.

E. A team should concentrate efforts on improving work processes. Administrative factors that affect these work processes (such as work environment, personnel policies, etc.) should not be excluded from examination. However, the team should realize that solutions to these problems may require more time to implement. Solutions that the team can implement are desireable.

F. Each team member should contribute to the team; that is, it is important that each team member collect and bring data or information from their area of expertise to the team as required for its use in examining problems.

G. Proceedings of team meetings should be documented in the form of a group memorandum that everyone can agree upon so that team progress can be charted.

QUALITY CONTROL AND TEAMWORK
by
Bert McCauley

In order to discuss quality control, a definition of quality must be offered. According to J. M. Juran, their are two types of quality. One type is product features, the second is product deficiencies.

Product features are positive qualities attributable to the product such as "load-carrying capacity," or "average time between failures," or "millions of instructions per second." As these features improve (or increase) for a given product, product (and customer) satisfaction increases.

Product deficiencies are indicators of poor quality such as "percent of product defective," "error rate in calculations," or "hours of redesign required." As these indicators increase product dissatisfaction and customer complaints increase.

However, Juran points out, product satisfaction and product dissatisfaction are not opposites. An example is the better mousetrap.

No one may be dissatisfied with the existing mousetrap, it works fine (has no deficiencies). However, a mousetrap is introduced that has better product features and captures the market; thus generating deficiencies in the existing model by its presence. Both types of quality must be measured within an organization to have a complete grasp on quality.

How are these two kinds of quality monitored? That's where the quality control phase of the Juran Triad of Quality and teamwork apply. Figure 1 serves to demonstrate this concept. For example, suppose that a team has decided to study the problem of the amount of redesign

THE JURAN TRIAD OF QUALITY

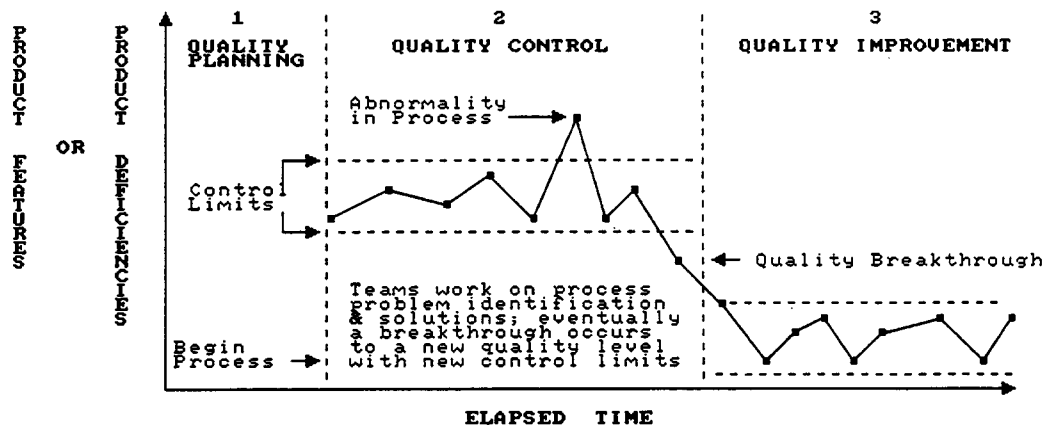


FIGURE ONE

When tracking product features, what goes up is good. When tracking product deficiencies, what goes up is bad.

As product features increase, product quality increases and quality breakthrough would be in opposite direction (up). As product deficiencies decrease, product quality increases and quality breakthrough would be in the direction shown (down).

required to produce a complete set of highway plans. This would be a product deficiency.

The vertical axis of the control chart could be the amount of time spent in redesign as a percentage of the total time spent on a set of plans. The team could then begin plotting this percentage each time a set of plans was completed. After enough data had been collected, an average percentage of redesign could be computed and control limits established. Normal variance within any process dictates that control limits be placed at three standard deviations above and three standard deviations below the average.

Those sets of plans that had percentages of redesign that fell outside of (and above) the control limits would then be chosen for more detailed examination to determine why the redesign effort was so high. Design files could be examined to determine what events or procedures in the process of design caused this abnormality. Over time, the team's findings of the root causes of this and other plan set redesign abnormalities could lead to changes in the design process which would lead to a quality breakthrough in plan set preparation. Analysis skills that a team could use to get at these root causes will be addressed in the next issue of the FLH Quality News.

THE SUCCESS OF FAILURES

In every endeavor, the path to success is marked by frustration and setback. Here are a few successes whose failures you may never have heard about:

• He dreamed of attending West Point, but was turned down twice. It wasn't until his third application that he was accepted. His name: Douglas MacArthur.

• The inventors of the Apple micro-computer couldn't sell their concept to Hewlett-Packard or Atari, so they took the plunge and marketed it on their own. First-year sales of the Apple were $2.5 million.

• Henry Ford went bankrupt in his first year in the automobile business. Two years later, his second company also failed. But you must admit, his third one has done rather well.

• Twenty-three publishers rejected a certain children's book. But the twenty-fourth publisher accepted it for publication and the book sold six million copies. The author: Dr. Seuss.

As inventor Charles Kettering put it, "Failures, repeated failures, are finger posts on the road to achievement. The only time you don't fail is the last time you try something and it works. One fails toward success."

(Submitted by Cindy Cooksey, headquarters' Administrative Officer.)

Learn from the mistakes of others. You can never live long enough to make them all yourself.

LEADERSHIP

So . . . we're going to be a TQM outfit. What's the "M" stand for? Workers? No, Management. You want to be a Manager? Think about it. When you assume the title of manager, you give up doing honest work for a living. You don't design it; you don't draw it; you don't build it. Still want to be a manager. How about a LEADER?

TAKE THE TEST

Good Leader	Poor Manager
A coach appealing to do the best; open door; problem solver.	Invisible - gives orders to staff, expects them to be carried out.
Comfortable with people in their workplaces.	Uncomfortable with people.
Good listener.	Good talker.
Fair.	Fair to the top; exploits the rest.
Simplifies (makes it look easy).	Complicates (makes it look difficult).
Knows peoples names.	Doesn't know people's names.
Trusts people.	Trusts only words and numbers on paper.
Often takes the blame.	Looks for a scapegoat.
Gives credit to others.	Takes credit; complains about lack of good people.
Goes to where the trouble is.	Interrupts people in crisis and calls them to a meeting in his or her office.
Honest under pressure.	Improvises, equivocates.
Looks for controls to abolish.	Loves new controls.
Straightforward.	Tricky; manipulative.
Openness.	Secrecy.
Keeps his or her promises.	Doesn't.

Make it fun to work in your office? When people aren't having fun, they don't produce good work. Encourage exuberance. Throw out those who spread doom. You might be surprised - you might have fun too!

(Submitted by Jim Roller, Central Division's Bridge Engineer.)

TQM TRAINING

TQM orientation meetings for employees have been held in the three field divisions and headquarters. Feedback from the orientation sessions has been largely positive. There appears to be quite a bit of interest in TQM.

A thorough compilation of orientation group discussion topics, problems identified, and proposed solutions has been prepared by Clara Conner, TQM Coordinator in Eastern, and is being printed separately, and distributed along with this newsletter.

Approximately six people from each of the field divisions have been trained in the techniques of conducting meetings. The training was designed for us by a team of consultants and was delivered at a 4-day session in Estes Park, Colorado, in December. Following is a list of trained facilitators:

Central Division

Charmaine Farrar	PRMS
Darrell Harding	Materials
Kay Hymas	P & C
Bert McCauley	TQM Coordinator
Darlene Puleo	Administration
Jim Roller	Bridge
Marvin Wagner	Proj. Development

Western Division

John Bucholtz	Proj. Development
Gordy Clark	Administration
Tom Hildreth	Construction
George Parson	Survey
Steve Pratt	Proj. Development
Jim Stolarzyk	Administration
Pat Wlaschin	TQM Coordinator
Ted Wood	ADP

Eastern Division

Clara Conner	TQM Coordinator
Shoukry Elnahal	Bridge
Julia Perry	Counsel
Debbie Ranciato	ADP
Paul Schneider	Proj. Development
Bill Whittenberger	Construction

Headquarters

Karen Kabel	Management Systems

These persons will attempt to enhance the effectiveness of the various quality teams as they are established and begin their work. As the number of active teams increases, there will be a need for additional trained facilitators.

Also needed is training in how to build effective teams and in team problem-solving techniques.

TQM LIBRARIES

Each of the four offices is assembling TQM-related materials such as books, articles, and tapes for check out by employees. Lists of the materials in each of the four libraries are being prepared and will be available in the libraries or from your TQM Coordinator soon. Exchange between libraries is encouraged. The TQM Coordinators are charged with keeping the lists up to date.

ANNOUNCEMENTS

May 6-12 is Public Service Recognition week. Watch for announcements of activities in your area.

The American Society for Quality Control is sponsoring the Rocky Mountain Quality Conference June 18 and 19 in Denver. Contact Bert McCauley for details.

Publication No. FHWA-FL-90-003
HFL-20/4-90(800)P

Volume 1 Issue 3 Fall 1990

FLH QUALITY NEWS

U.S. Department of Transportation
Federal Highway Administration

400 7th St., S.W. Washington, D.C. (202) 366-9492

CONGRATULATIONS TO CONTEST WINNERS!

What better way to say what we are all about? "COMMITMENT TO EXCELLENCE" is our new Federal Lands Highway slogan thanks to **Jane McClaugherty**, Secretary, Administration Section, CFLHD who submitted it. The Executive Quality Council notified the symbol and slogan contest winners on July 3. **Dan Van Gilder**, EFLHD, and **Bill Standley**, WFLHD sent in the two co-winning symbols. The winning entries are shown below.

SLOGAN:

Walter Langlitz, WFLHD
Rhonda Powell, WFLHD
Ed Sprague, WFLHD
Jane McClaugherty, CFLHD
Allan Miller, CFLHD
Judy Tancreti, CFLHD
Vivian Hanna, EFLHD
Donald Patrick, EFLHD
Julia Perry, EFLHD
Curtis Page, HQ

Figure 1 Left - by Dan Van Gilder, EFLHD; Right - by Bill Standley, WFLHD

Each of the three finalists will receive $500 and a plaque engraved with their name and the winning submission. A graphic artist is combining the two winning symbols for our use.

Seventeen other entries also won money in the contest. Ten semifinalists were chosen in each group (symbols and slogans), and those 20 winners each won $125 for making it to the semifinals. The contest semifinalists were:

SYMBOL:

Rhonda Powell (2), WFLHD
Bill Standley, WFLHD
Darlene Puleo, CFLHD
Helen Strauch, CFLHD
Judy Tancreti, CFLHD
Gail Board, EFLHD
Gary Jackovitch, EFLHD
Dan Van Gilder, EFLHD
Curtis Page, HQ

Look for the winning symbol and slogan on future FLH publications and promotional materials, including a brochure explaining the FLH TQM mission, vision, and guiding principles, as well as this newsletter.

NEWS FLASH !

Federal Lands Highway Applies for 1991 Quality Improvement Prototype Award.

Washington, D.C. - With a tremendous FLH-wide team effort, the quality work of FLH has been documented in a 25 page award application. The application, which is the only one sent in by the Department, went to the Federal Quality Institute (FQI) on August 15, 1990. An FQI panel of examiners will evaluate applications and conduct site visits in September and October. QIP Award winners are to be announced November 6, 1990.

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PROCEDURES FOR DIAGNOSIS OF QUALITY PROBLEMS IN WORK PROCESSES: CAUSE AND EFFECT DIAGRAMS

by Bert McCauley (TQM Coordinator, Central)

In the last issue of the *FLH Quality News*, we covered the Juran Triad of Quality. One example was a team using Quality Control principles to monitor a product deficiency characteristic (redesign time). The job of the team was to identify those projects that had inordinate amounts of redesign time. Then they searched out the root causes of these abnormalities.

Now let's look at an analysis technique teams use to diagnose the root causes of work process quality problems. The diagnosis and correction of a problem in a work process has six steps:

1. List all possible causes of the problem.
2. Identify the primary causes of the problem.
3. Devise measures to correct the problem.
4. Implement corrective measures.
5. Monitor the results of the corrective measures.
6. Institutionalize the corrective measures.

This article focuses on a technique used in the first step of this diagnostic process. This technique is called the "fishbone" or Ishikawa diagram, after its inventor.

Since the entire work process has many inputs from many different sources (materials, equipment, personnel, procedures, methods), a team comprised of a cross-section of individuals involved in the process is best able to generate all of the possible component problems that contribute to the overall product deficiency.

This product deficiency or "barrier" to quality then becomes the "quality characteristic" or "effect" that the team is trying to achieve. This "effect" is then placed at the "head" of the fishbone. In our example, the quality characteristic or "effect" is redesign time.

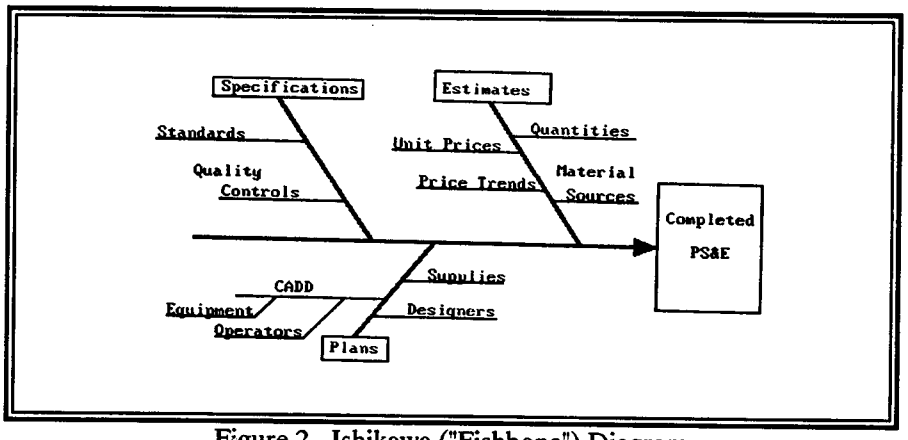

Figure 2 - Ishikawa ("Fishbone") Diagram

The "causes" that contribute to this effect then become the branches of the diagram. The main branches of the diagram can be labeled as: a) the primary *sources* contributing to the problem (materials, equipment, etc.), b) the main *processes* contributing to the problem (inspection, testing, checking, etc.), or c) a combination of these factors.

The chief advantage of this type of diagram is that it helps organize and relate each succeedingly smaller cause for variation. The weak point is that the makeup of the team may preclude small causes from being isolated or even seen.

After searching for all possible causes by generating the diagram, the team needs to select the major causes and generate solutions. There are several ways to identify the most important causes: a) look for causes that appear repeatedly (maybe under different sources or process steps); b) use team consensus techniques to select major causes; or c) collect data over time that will show which causes are the most frequent or significant. The next issue of the newsletter will address the collection and analysis of process data.

TQM IN FHWA AND DOT

by Karen Kabel (Headquarters Office of Management Systems)

Although Federal Lands Highway is now the undisputed leader in TQM in FHWA, there may be some competition soon. The rest of the agency is beginning to receive some awareness training in TQM concepts. For example, Department of Transportation Headquarters held several "listening sessions" in May, June, and July. Here managers in the Department heard, among others, speakers from Motorola and Xerox. These winners of the Malcolm Baldridge Quality Award work with public and private sector organizations to promote and implement TQM principles. Attendance at these sessions was very good.

The nine Regional Federal Highway Administrators attended the Third Annual Conference on Federal Quality and Productivity Improvement at the end of May. Tom Edick, our FLH Program Administrator, Mark Chatfield, the FLH TQM manager, and about 1,200 other Federal employees also attended.

No high-level decisions have been made to date about whether or how to implement TQM FHWA-wide. However, we are working on an options paper which will explore possible approaches for developing an agency posture on TQM.

A TQM "conference" has been set up on the FHWA Electronic Bulletin Board System (FEBBS). Information on TQM will be available to any FEBBS user. Let's all use the FEBBS to share news of TQM activities.

Meanwhile, some action is taking place at the Departmental level. The Program Integrity and Management Improvement Council, chaired by the Deputy Secretary and made up of the

modal administrators, has been designated as the Departmental Quality Council. A "blueprint" has been drafted for introducing TQM to the Department. As part of the "blueprint," a high-level working group is being considered to design a Departmental TQM master plan, and a policy statement from Secretary Skinner is being prepared. A "Transportation Quality Management" newsletter was started recently to spread the TQM word throughout the Department.

RECOGNITION FOR FLH EMPLOYEE

Pete Perros, the Headquarters Executive Officer, recently received a memo of appreciation from George Moore, Associate Administrator for Administration. The memo recognizes Pete's outstanding efforts in coordinating the administrative requirements of the National Transportation Policy Task Force. Pete was handling the NTP requirements at the same time he was making the transition from Management Systems to HFL and from merely husband to father. Good job, Pete!

THE "F" EXERCISE

We all would agree that a small oversight in brain surgery is a terrible idea. But you don't have to be a brain surgeon for those small oversights to hurt you. Just about everyone has room for improvement. The following test proves the point. Give yourself 30 seconds to count the number of times the letter "f" appears:

We often let a number of feelings have a great deal of force in our lives. One of Deming's Fourteen Points is to drive fear out of the workplace. Of all fearful feelings, fear of failure is one of the most stifling in the pursuit of our fondest dreams.

How many did you find? If you didn't find 20, look again. The paragraph also suffers from wordiness and long sentences. Quality doesn't come easily.

MANAGEMENT LORE

ADMINISTRATOR'S NOTE
VOLUME I, NOTE 34
MAY 4, 1990

Leadership Secrets of Atilla the Hun, The Joys of Stress, The Greatest Management Principle in the World, Winnie-the-Pooh, Stonewall Jackson - Portrait of a Soldier.

Without too much stretching, I count all these books as contributing to our management lore. Since improved management is of transcending importance to our country's competitive success in the global market, and since reading such books is a hobby of mine, I'll occasionally pick a theme from these or other titles and think with you about its relevance for Federal Highways and DOT.

The comments following are from *The Greatest Management Principle in the World* by Michael LeBoeuf. In his Strategy 10 "Reward Working Together Instead of Working Against," Michael asks some tough questions. How united are the people where you work? Do they:

- "Try to build up the importance of their own work and downplay the importance of others?
- "Refuse to fully extend a helping hand to each other when it is needed to get the job done?
- "Spend lots of time sniping, backbiting, criticizing each other and playing political games?
- "Form personal rivalries and "us versus them" group factions that disagree over just about everything?"

These *are* challenging questions. How would you answer them for Federal Highways--for the DOT? After my short residence, but many years as a watcher, I believe our organization does well, but there is always room for improvement.

Why does it matter? Well, I've stressed global competitiveness already, and this is the core issue. We've simply got to be more effective in all aspects of U.S. business--public and private--if we are to succeed. Monday, I heard Secretary Skinner speak in Louisville at UMTA's Private Sector and Public Transit Symposium. He left no doubt as to the link between competitiveness and what we do in transportation.

Dr. LeBoeuf talks about the teamwork so celebrated by Japan watchers. He says, "In Japan, heavy competition is encouraged between companies to produce the best possible products for the world market. But within companies and work groups, harmony, teamwork, and cooperation take precedence. One of their favorite slogans is 'None of us is as smart as all of us.'" How true that is for all of us in the transportation sector.

LeBoeuf's book is largely targeted toward the private sector, so many of the practical ideas for team building are not readily applicable to us. But then he gets to number 4, "Build teamwork with pride and recognition." And now you will know why I favor this author and this particular strategy. He quotes Penn State's Joe Paterno and Alabama's Bear Bryant.

Coach Paterno said:

"You make people feel that they're with a special company, a special institution that's worth making sacrifices for. If you're the kind of guy we call the 'we and us' people that can work with the group by being unselfish, benefits will accrue to you....By making sacrifices, if you're good, you're going to get is back a hundred times. I think you have to get that point across. If you have pride in your organization, you can get people to do anything."

Bear Bryant said:

"I'm just a plowhand from Arkansas, but I have learned how to hold a team together. How to lift some men up, how to calm down others until finally they've got one heartbeat together, a team. There's just three things I'd ever say:

- If anything goes bad, I did it.
- If anything goes semi-good, then we did it.
- If anything goes real good, then you did it.

That's all it takes to get people to win football games for you."

I didn't have the pleasure to know Coach Bryant, but have known Joe for years, and he lives out this philosophy. And it isn't just in football. Last weekend, Penn State celebrated the completion of the "Campaign for Penn State"; its first ever private fund raising effort. We started with a goal of $200 million, but will in fact top out at $350 million when it closes down this June. It was Coach--leader--Paterno following the principles that have made him a football legend who set the campaign in motion and helped power it.

Our author's Principle 5 is not bad either. "Use the 'most important words' in communicating with your team."

- "The six most important words in our language are "I admit I made a mistake."
- "The five most important words are "You did a good job."
- "The four most important words are "What is your opinion?"
- "The three most important words are "Let's work together."
- "The two most important words are "Thank you."
- "The single most important word is "We."

LeBoeuf suggests posting these words where everyone can see them and begin using them. I have more pointed advice. Adopt them! Do so in a proactive, visible way and aggressively practice using them for 6 months. Then, and only then, will they begin to be habit and so have the impact they can have for your life.

Ben Franklin, one of my heroes from history, made a life-long habit of practicing just these principles. He was known for his gathering of facts; known for his nonconfrontational approach; known for his courtesies. And, of course, he is known for his successes--major contributor to American Independence, major contributor to the American Constitution, major contributor to so many aspects of the American society as we know it. Following this and LeBoeuf's practices won't make us all Franklins, but can make us closer to what we can really be. Again, quoting Secretary Skinner in Louisville, "the National Transportation Policy has been a major energizing, unifying force in DOT." Let's stay on that high and successful road.

Sincerely yours,

(signed)

T. D. Larson

WANTED!

Articles for the FLH Quality News.

Have you been practicing excellence? Have you had a success or a failure which would help others to a better job next time? Maybe you have been wanting to send something in but you just never got around to it. Well ... NOW is your chance. The FLH Quality News is looking for articles from all types of employees. If you are worried about your ability to write, don't let that stop you. The editor has access to resources for "polishing" any article. But we can't publish it if we don't have it - so, go ahead, send it in.

Along the same lines, send in articles you read which may benefit all of us in FLH. We may not be able to use an entire copyrighted article, but we can use quotes as long as they are referenced. One side of our triangle is "Giving Everyone Responsibility." Now is your chance to be responsible for an article in the FLH Quality News. Send material to:

FLH Quality News
Federal Lands Highway, HFL-01
400 7th St., S.W.
Washington, D.C. 20590
Phone: (FTS) 366-9492 or FAX (FTS) 366-7495

FLH TQM Manager Retires

Jerry Rolland, TQM Manager for the past two years retired on August 31, 1990 after 33 years of service. Jerry was one of our "pioneers" in TQM, working with it from its inception. We are going to miss his valuable contributions which helped carry us through the Quality Improvement Prototype application in August. Fortunately, we may not be losing him entirely; we hope to have him back in FLH as a retired annuitant.

Mark Chatfield, former Federal Lands Highway Program Engineer, assumed the TQM Manager duties on September 1, 1990. Cliff Pelton, former Assistant Division Administrator in the Puerto Rico Division will be the new Federal Lands Highway Program Engineer.

Publication No. FHWA-FL-90-0(
HFL-01/9-90(800)P

Volume 2 Issue 1 Winter 1991

FLH QUALITY NEWS

U.S. Department of Transportation
Federal Highway Administration

400 7th St., S.W. Washington, D.C. (202)-336-9492

FLH - Management Excellence Finalist

Assistant Secretary for Administration of the Department of Transportation, Mr. Jon Seymour, advised Federal Highway Administrator Larson that the Federal Lands Highway Office was designated as a finalist for a President's Council on Management Improvement (PCMI) Management Excellence Award. Although not selected for the award itself, "... the designation as a finalist clearly indicates the organization's commitment to management excellence, ..." Mr. Seymour said in his September 5, 1990 memorandum to Dr. Larson. Dr. Larson wrote Mr. Edick, Federal Lands Highway Program Administrator, "You and your organization are leading the agency in the implementation of Total Quality Management, and setting an example not only for the FHWA, but the rest of the Department and other Federal agencies as well. Keep up the good work."

Climate Survey Preliminary Results

Remember that Climate Survey form all FLH employees were asked to fill out? Well, the first compilation of results is in. We now have data from 1990 to compare to the 1989 survey information collected last year. The Quality Coordination Team (QCT) will be formalizing a report and analyzing results over the next couple of months. The report will generally show very encouraging results.

Our best areas:

- a social environment that encourages quality,
- employees are customer focused,
- employees perceive high values and ethics,
- employees with high morale and a positive attitude,
- teamwork and employee involvement,
- employee awareness of our mission,
- supervisors are quality improvement coaches,
- cooperation throughout, and
- a work environment that is consistent with quality policies.

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Volume II, Issue 1
Winter 1991
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The FLH QUALITY NEWS is an official publication of the Federal Lands Highway Office, Federal Highway Administration, U.S. Department of Transportation. It is published several times a year for educational purposes to promote quality principles among FLH's and other organization's employees, managers, and supervisors.

Other topics may include information about programs, policies, projects, and administration. Contents of this publication may be used without permission. However, courtesy credit is appreciated.

Communications should be submitted to: Editor, FLH QUALITY NEWS, Federal Lands Highway Office (HFL-1), Federal Highway Administration, 400 7th Street, S.W., Washington, D.C. 20590.

Areas where we need the most work include:

- structuring the organization to help focus on quality,
- encouraging creativity and innovation,
- employee awareness of the importance of quality,
- fair and timely rewards and recognition,
- supervisors' commitment to continuous improvement,
- top management involvement in quality and productivity,
- managers setting examples of quality performance,
- employees planning ahead, and
- having balanced workloads and tools available.

In-House Training to be Available Soon

Pat Wlaschin, Clara Conner, and Bert McCauley are feverishly working on the final touches to a course they will begin presenting early in 1991. The 5-day course is titled, "Team Building, Facilitation, and Quality Process Control." The outline looks great for anyone interested in developing skills in quality. Be looking for an opportunity to attend the session that is coming soon to your Division. These are the planned topics:

- Team Building
- Communications among team members
- Roles of team members
- Operating guidelines and contracts
- Making meetings work
- Leadership styles and skills
- Behavior of individuals in groups
- Problem solving techniques

- Quality process controls
- Selecting a quality project
- Data collection
- Analyzing and presenting data
- Case studies

TQM and You

by Jim Roller, CFL

(from the "Central Courier" Vol. I, Issue No. 1, Summer 1990)

I have never been a willing volunteer and I am not entirely sure why I volunteered to author articles on TQM for our new newsletter. I think my enthusiasm for TQM simply overwhelmed my fear of writing. So here goes . . .

First, some questions: What is your understanding about why we are doing this? What is TQM? Teams, meetings, memos? Will it ever end? Are you inspired?

> **One thing will inspire you however, and I know what it is. ACHIEVEMENT.**

What would it take to inspire you?

Let me begin with an observation. Nothing done so far in our TQM program will inspire anyone - not for very long anyway. One thing will inspire you however, and I know what it is. ACHIEVEMENT. Your achievements that result from your effort to excel will inspire you both now and in the future. Achievement begets inspiration.

We have all made many achievements in the past. Long before we ever knew about TQM. So why are we suddenly doing this? Another answer. Because TQM will help us systematically plan our achievements. They won't just happen. We will predict our successes - and they will happen.

So what should you do about TQM? Work on a team? That's O.K. Join a team? That's O.K. too. But you may have to wait. Why wait? BECOME A ONE PERSON TQM TEAM! Live TQM - but don't tell anyone.

How do you do it? Here are a few ideas. Think about your customer. Start with those right in your office who depend on you. Practice silence when you talk to them and listen actively. What are their needs? Talk to one of these "customers" each week - be a good asker - and a good listener.

Next, think about your job. What improvements can you make? Be practical. Talk to your co-workers and to your boss. Think about facts. Be open and honest. Present your ideas as lucidly and logically as possible. Focus on results, not on activities or individuals. Remember, results are your achievements.

A final word for bosses. What is your most critical responsibility? Answer: To build people and make them successful. You are responsible for getting people into the habit of growing. You won't need TQM to tell when you have succeeded. You will feel it.

Customer Satisfaction

by Richard G. Wasill, WFL

A recent example of customer satisfaction is worthy of note. It was provided by the Gifford Pinchot National Forest. But first let me explain....

In February 1987, officials of the Gifford Pinchot National Forest asked the Western Federal Lands Highway Division if we would design and construct the Lewis River Road east of Cougar, Washington. The project, designated as WA FDR 90-B, consisted of approximately 15 miles of overlay and numerous slide repair areas. From the very beginning, the Forest Service had difficulty finding sufficient funds to cover the work desired. As the project developed it became evident (at least to WFLHD) that the available Forest Service funds were not sufficient to construct the entire project.

Alternate schedules were prepared: Schedule A for 15.2 miles with an Engineer's Estimate of $3,661,006; and Schedule B for 12.8 miles with an Engineer's Estimate of $3,302,401. At the time of advertisement and bid opening, there was only $3,653,846 available. When bids were opened, the low bid was $3,689,156.77 and $3,327,744.27 for Schedules A and B respectively. Try as they might, the Forest was unable to come up with the additional funds needed to award Schedule A. On

Photo courtesy of The Asphalt Institute

October 25, 1989, with Forest Service concurrence (and their obvious disappointment), Schedule B was awarded.

The Construction Branch was made aware of this situation. Through the efforts of some dedicated project personnel, and obviously a cooperative contractor, enough savings were conserved during construction to permit the addition of approximately 1 mile of paving. The project was completed within the allowable time, on October 12, 1990, and the final estimate was $3,296,653.74.

You can well imagine that a quality project brought in on-time, within budget, and actually resulting in approximately a 7 percent increase in length of reconditioned roadway, would result in a letter of appreciation from the customer. That it did - but what makes this article worth relating to you is that in recommending that **Tom Craig, Paul Flores, and Daniel Reid** receive cash awards commensurate with their duties, the Gifford Pinchot National Forest requested in their October 18, 1990 letter, that these awards be paid from their funds. Now that's CUSTOMER SATISFACTION.

CONGRATULATIONS!!!

"Give me that which I want, and you shall have that which you want." - Adam Smith, 1723-1790

* * *

Project Development Office Quality Action Team

by Julia Perry and Byron Betts, EFL

The Project Development Office Quality Action Team in the Eastern Division was established by the Project Development Engineer to address issues of concern in the Project Development Office. After a facilitated meeting with the Project Development staff to identify those areas of concern, the initial issue selected for review was the preparation and use of scoping reports. By memorandum dated April 27, 1990, a team was named that was made up of representatives from each of the Design Squads, Location, Geotech, and the Architect/Engineer Office. The team was facilitated by the Division's Legal Counsel.

At the time the QAT was organized, scoping reports were not being used in Project Development. For those of you who are not familiar with design procedures, a scoping report is a general description of the limitations and problems that a design must take into account. To operate an efficient design process, an Engineer must identify the actual conditions on the site - in what may be listed in a document called a scoping report - and then design the road while taking those conditions into account.

The first question before the QAT was what information should be included in a scoping report. This required the QAT to familiarize themselves with what information is generally available at the time the design work in the squads is begun. (The QAT had been informed by the Project Development Engineer that the scoping report was to be prepared at or before this point.)

The QAT interviewed the Location and Geotech members, as well as the location engineer and the hydraulics engineer. They also reviewed various documents - such as a sample Environmental Impact Statement, an Engineering Study, and NPS Form 10-238 - which the squads have used in the past for information. The QAT felt familiar enough with the information that was available, they started listing - using brainstorming and, later, substantial and repeated editing - the information that the squads needed to prepare a design, as well as when it was needed.

Once the information was roughly listed, the QAT had to decide the most efficient content for the scoping report. This involved much discussion and compromise of various concepts among the QAT members. The final result involved several elements.

- First, the scoping report was set up as a standard form so that information could be easily located. Second, the scoping report included short answer lists for basic data, intermingled with essay-type response sections to discuss potential impacts that had to be taken into consideration when preparing the design.
- Third, it included resource and reference lists so that further data or discussion could be sought out as it was determined necessary.
- Finally, the scoping report was set up so that the form could be prepared on a computer to allow adjustments to the size of a description of a potential problem as necessary.

Problem Solving Steps

1. Problem Identification
2. Problem Selection
3. Problem Analysis
4. Identify Problem Solutions
5. Solution Selection
6. Trial Implementation
7. Solution Implementation
8. Monitor Effectiveness
9. Team Celebration

The QAT prepared a separate instruction document that included numerous examples of potential responses. In addition to serving as a guide for preparing the scoping report, the instruction document was intended to suggest or trigger consideration of areas that might not always or readily spring to mind. The detail in the instruction document also allowed the scoping report to be more abbreviated. The instruction document was set up to closely follow the format of the scoping report so that the reader could refer easily from one to the other.

When the scoping report and instructions were nearing completion, the QAT started preparation of a recommendation memorandum to the project development engineer. It discussed who should prepare the scoping report, when it should be prepared, and how it should be used. The scoping report, instructions, and recommendation memorandum were provided to the project development engineer on August 31, 1990.

There are a number of reasons why the QAT was successful:

(1) The QAT had a clear issue to address. At one point the QAT sought and was given clarification of one aspect of the issue.

(2) At the same time, the issue required some discussion of the QAT members' personal job experiences and also required them to use some creativity in addressing it.

(3) The QAT members started out by discussing their roles in the office and on the QAT until they felt that their positions were roughly equivalent in terms of commitment to the QAT and its topic.

(4) The QAT familiarized themselves with what was already being done in the area they were addressing, and what resources were available, before they began developing their own suggestions.

(5) Brainstorming and free discussion were used to open up their creativity.

(6) Initial drafts were prepared from the brainstorming lists by the facilitator - who was a capable writer but had no experience in the field under discussion. This initial draft gave the QAT something to work from.

(7) The QAT members prepared all later drafts. The facilitator entered all drafts onto a computer for easy editing, but did not make changes without the QAT's approval.

(8) The QAT members felt free to critique each others drafts. (All criticism was constructive. If it had not been, it was the facilitator's role to restrict discussions to constructive criticism.)

(9) Some issues were re-explored as the QAT's understanding of the process matured or changed.

(10) QAT members made a personal commitment to (a) attend meetings, or send their comments if they could not, and (b) provide all drafts in a timely manner.

(11) The QAT had a specific deadline to provide at least a draft recommendation. Therefore, QAT meetings were scheduled regularly and were taken seriously. QAT meetings were only changed with the approval of all members.

(12) On occasion, the QAT asked non-QAT members for their input. It is not realistic to expect a QAT to work in total isolation. However, that input was not used to overrule or replace the position of the QAT.

(13) The QAT prepared minutes that documented the progress of the work and advised members of assignments and topics for the next meeting.

(14) QAT members came to meetings prepared for discussion.

(15) The facilitator pushed the QAT to act. The facilitator made the effort to obtain documents, people for the QAT to interview, and the meeting room for the QAT.

(16) The QAT attempted to operate on consensus, not majority rule. At the same time, QAT members understood that their involvement meant their active participation.

(17) The QAT understood that the implementation of their recommendation was important to the mission of their office, so they made sure their recommendation was practical.

(18) The QAT recommendation was treated seriously.

What's Up in TQM?

by Bert McCauley, CFL

(from "The Central Courier", Vol. I, Issue No. 2, Fall 1990)

Some concern has been expressed by various individuals as a result of the OPM training 26 managers and supervisors recently attended. The concern is that our team efforts are simply quality circles (QC). Quality circles is an earlier term for teams involving all employees. This method was not a huge success because the "teams" were not management directed and spent a lot of time on "housekeeping" chores that were considered by management to be sacred ground. QC teams would present solutions to management who would say "That's nice, but you didn't consider ...", or "I'll take it under advisement."

It is true, to some extent, that this is what we are doing now. However, we have made every effort to inform teams that they should be focusing their efforts on work process improvements using data to identify problems, devise solutions, and monitor implementation; and involve management in their efforts at every opportunity.

Still, a lot of teams seem to be working on "housekeeping" chores rather than work process improvements. This is happening for several reasons.

First, there was a big push to just get something going with teams after the orientations. So, we set up teams and let them go with no clear direction from management as to what the organization needed to do to be a quality outfit (no quality goals). Anyone (or any team) could probably think of something that could be done better if they knew what "better" was supposed to be.

Fortunately, this situation is changing and the Division Quality Council and Executive Quality Council are in the process of developing quality goals and action items. It should be up to mid-level managers and supervisors to ensure that their teams are working on things that relate to these goals.

...money is not the number one contribution to job satisfaction.

Secondly, the fact that teams are working on "housekeeping" problems suggests that the housekeeping might not be getting done by those who are responsible for doing it. Our people are our most valuable resource. Their well-being and job satisfaction is of paramount concern; many studies have shown that money is not the number one contribution to job satisfaction.

The success of our TQM effort depends on several things. The most important thing is that the entire effort remains "top-down driven." This does not mean continuing a problem solving "system" of fire-fighting, only now using teams with managers on them.

It does mean that managers use "management by fact" in partnership with employees; that is, (a) keep track (or help teams keep track) of quality data criteria that are responsive to our quality goals; (b) identify problem areas indicated by the data; (c) go to the people that do the work (through teams) and ask them how to fix the problem; (d) help the team collect the data they need to find a solution, and most importantly; (e) support the team by fixing it the way they advise; and (f) let the team monitor their solution to see if it is working. This is the way that things get fixed for good; this is Total Quality Management.

* * *

Headquarters Quality Council Develops Goals

The Headquarters Quality Council (HQC) has existed for about 6 months. Until very recently, however, "existed" is about all it had done. In October, the council sat down to meet and realized it had no real reason to get together. Members had no focus, no goal, and no real agenda. The session lasted about 5 minutes, but it may have been the most important meeting the group could have had. You see, the light went on. The HQC had come to know there must be a reason for their being and it must be arrived at logically, with complete member buy-in.

In November, Pam Brennen of the Coast Guard agreed to facilitate a series of meetings to develop a vision, mission, and goals for the HQC. With her skilled guidance, members spent a total of 4 hours identifying customers and their expectations. They discussed how the team should help meet these expectations. The December meeting refined what the council thinks customers expect. Soon, the HQC should be well on its way to having its mission, vision, and goals on paper - direction at last.

Is Joe Citizen a Customer?

by Bill Cross, FLHO

By now we all know that one of the three sides of the TQM triangle is "customer satisfaction", and that figuring out who your customers are is the first step in the TQM process. We also know that these "customers" are all around us. They are the coworkers who depend on our work to do their work. They are the employees of the other agencies we work with. They are the contractors on our projects, and often many other private sector people who have a vested interest in whatever we are doing at any point in time. But what about the general public...the taxpayer...the average "Joe Citizen". Is he (or she) a customer?

We can see the answer is "yes" if Joe is a potential user of the highway we're building. But suppose Joe's not really a potential user. Let's say he's just a guy from Hoboken who pays taxes and votes on election day. Is Joe a real TQM customer? After all, we are "public employees", and Joe is part of the public. It's easy to say, "No." Joe is too far removed from the process. It's too overwhelming a prospect to try to keep 230 million of these abstract "customers" satisfied, especially when we have real live certifiable ones coming into our office every day, pounding on the desk and giving us helpful hints on how we can better satisfy them. Besides, how do we even know if Joe is satisfied?

> **... as public employees, we are obligated always to relate TQM to our responsibilities as stewards of public funds ...**

But, without a focus on the public as a customer, there is something essential missing from the TQM process. There is no foundation of ethics or principles on which to base our routine actions and decisions as public employees. Instead, there may be a tendency to focus only on the "customer of the hour", or whoever last made a request for our consideration. Basic TQM techniques can be used by any organization, even an unscrupulous one, to achieve its vision of excellence. But as public employees, we are obligated always to relate TQM to our responsibilities as stewards of public funds, and of public priorities as reflected by the framework of laws and regulations within which we function.

This means that not only is Joe a customer, but he is the primary customer of any public employee. This is not to say that we'll never have a system to accurately measure Joe's satisfaction at the things we do and the decisions we make. We have to subjectively do that ourselves. We each have to acknowledge the standards which reflect our responsibilities as public employees. These standards are not just the obvious ones, dealing with personal conduct, gratuities, conflicts of interest, and others that are spelled out in regulations. They are also the more subtle judgmental and discretionary standards which must guide our everyday engineering and procurement decisions.

Our recognition of Joe Citizen as a primary customer gives us a framework to make choices and to resolve conflicting demands among our real life customers. It also gives us a basis to object when the demands are not conflicting, but unreasonable as to time, cost, or interpretation.

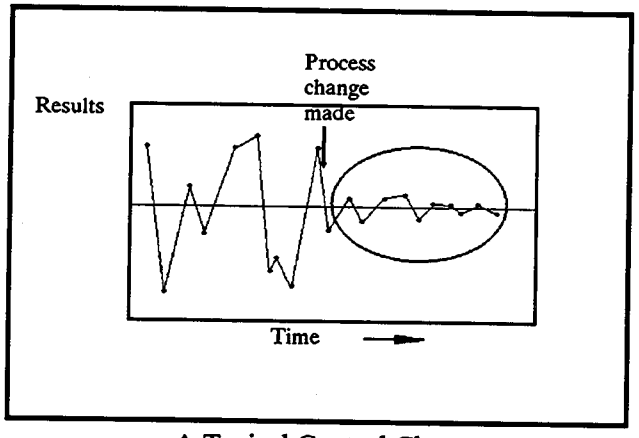
This concept is not an invitation to bureaucratic anarchy. As individual employees, we cannot simply declare our customers' suggestions to be, "not in the public interest", and thus ignore or refuse them. The Government still has an organizational structure which encompasses the processes to resolve disagreements and differences of opinion. But any employee, at any level of the organization, has not just a right, but an obligation to focus on the public interest as a basis of how he or she makes decisions, establishes priorities, and responds to the real life customers that we deal with every day.

Quality Assessment Plan Completed

The Quality Coordination Team (actually Bert McCauley did most of the work) has finished the Quality Assessment Plan (QAP) for FLH. The QAP, issued with a September 1990 date, is a tool for tracking quality. It provides for monitoring the overall quality of our work as well as the value added work of individual work units.

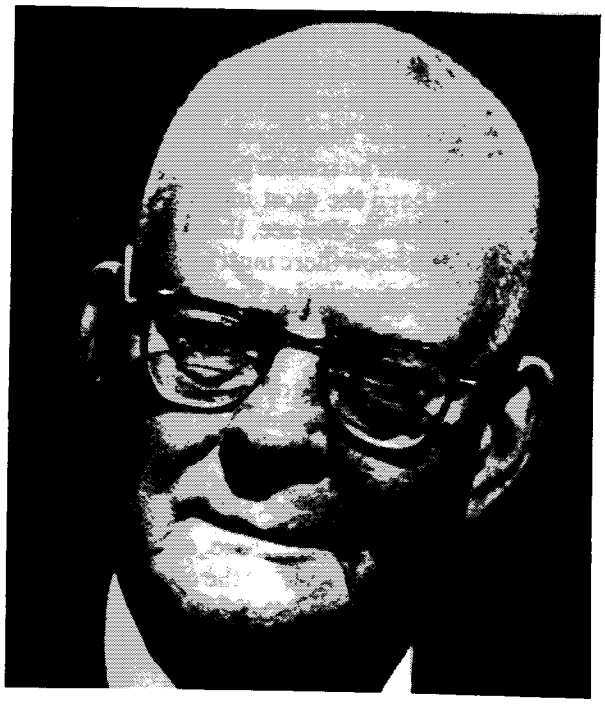
One of the objectives of the QAP is to show individuals and teams how to vividly display the data they collect. This is done by creating control charts and pareto diagrams.

The title "QAP" may be a little mundane, but its use will bring your measurements to life. Soon you will be looking forward to collecting your next set of data so you can see the impact of your changes on the graph. Here is an example of what a control chart, sometimes called a run chart, looks like:



A Typical Control Chart

* * *



W. Edwards Deming, (Photo - cover of "Out of the Crisis")

What TQM Is All About

An article from the Federal Staffing Digest, Volume 2, No. 3, OPM, Spring 1990

"Total Quality Management" describes a system for continuous improvement in product or service quality. Experts agree on important elements, but there are differences in emphasis and in implementation. Each organization tailors TQM to its own needs and gives it an appropriate name.

The most famous proponent of TQM is W. Edwards Deming, an American statistician who began consulting with Japanese businesses in 1950. Deming is widely credited with changing the phrase, "made in Japan" from one describing shoddy goods to one describing high quality and reliability. For decades the highest award given to business in Japan has been named for him.

In the 1980's, U.S. business magazines called attention to the irony that American "know how" was successfully used by Japanese competitors, but largely ignored by American business. Some ailing corporations, including Xerox, Motorola, Harley Davidson, and others, adopted TQM and regained health. As corporations improved their bottom lines with TQM, they also found that workers enjoyed their jobs more and increased their organizational loyalty.

Most report that it takes at least three years to get TQM well started. As part of their structure, most set up a quality council of top management and charter teams for improvement projects. Teams usually start off with small, irritating problems and move on from there. Confidence and involvement grow together.

Common TQM Themes:

o Be customer-focused and listen to what the customer wants. Each organization has outside and inside customers. A common saying is, "if you are not serving the outside customer, you had better be serving someone who is."

o It is less expensive to identify problems and prevent quality defects in advance than it is to catch those defects in an inspection or appraisal or not catch them at all.

o Managers need to lead in improving quality and set an example. Management expert Peter Drucker has observed that they must avoid making it difficult for workers to get the job done.

o Workers at all levels, particularly on the front line, should be authorized to make informed decisions to protect quality and make improvements.

o Statistical data should be used to measure quality. Decisions should be made on the basis of fact, not on the strength of opinion or past practice.

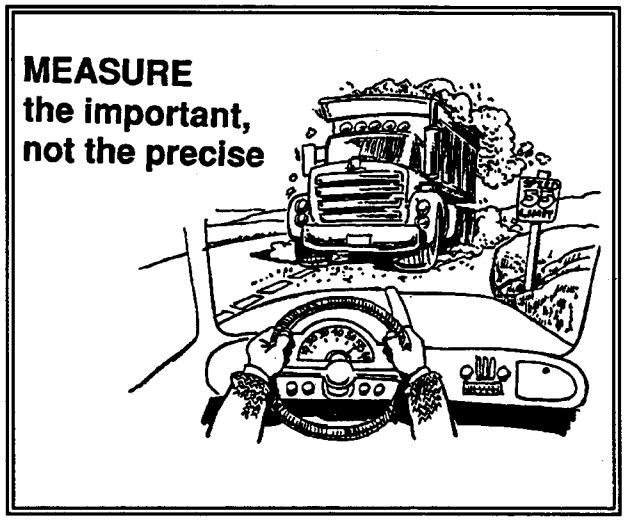
o Managers and employees need training in quality improvement. They cannot be expected to have the technical tools on their own, nor can they be expected to fit into a process until they share a common understanding of that process.

o Organizations need to develop a Quality Management system which institutionalizes an unending process of quality improvement

* * *

From the Editor

On September 10, 1990, I had the opportunity to make a presentation on TQM to Transportation Systems Center (TSC) personnel. One of the characteristics of a Headquarters job seems to be to take on whatever task arises. When Karen Kabel, the FHWA TQM Coordinator asked for someone from FLH to help with a presentation at TSC, likely candidates were



Larry Smith and Al Burden. Both had prior commitments. My mixed feelings were of anxiety and delight. Anxiety because I had never made a TQM presentation for a non-FLH group. Delight because Boston in the Fall usually is a delight.

Let me review what TSC is. The TSC is like FLH in some ways. They have about the same number of permanent staff, 550. They are mostly engineers and technical specialists. They are funded by other agencies. They have internal contracting capabilities. TSC takes on tasks that other transportation agencies cannot staff-up to do; particularly technical studies and management studies. Their customers include FAA, FHWA, and other modal administrations of DOT, as well as DOD. Products and services include expertise in four primary areas: economics, surveillance, information systems, and engineering. In other words, if an agency has a special activity, study or initiative they can't get done on their own, they go to TSC who can get a contract out in 1 to 8 weeks and coordinate the implementation and reporting.

The Change Management User's Group of the Systems Assessment Office meets monthly to exchange ideas and hear speakers from various fields of expertise. Before the User's Group's brown-bag meeting, Mr. Cal Perrine, Associate Director for Systems Assessment,

gave Karen and me a briefing on TSC. He showed us how the organization works and how their work escalated in the 1980's from a $50 million level in 1981 to about $150 million in 1989. Their budget is annually about $100 million for contracts on projects, $20 million for salaries, and $15 million for overhead. They have no Congressional line-item funding and must cater to their customers who are Federal transportation agencies.

After Mr. Perrine's informative briefing we had a short discussion with his Chief of Change Management, Dr. David Damm-Luhr, and his associate, Mr. Tom Dooley. Then we went to the cafeteria to pick up our own "brown bag" lunch - actually it was wrapped in plastic. By noon we were munching on chips and sandwiches, ready for the introductions. Mr. Dooley and Dr. Damm-Luhr introduced Karen and me and after a few brief remarks, Karen gave a short talk describing Total Quality Management. When she was done, I addressed the group about the implementation of TQM in FLH.

My talk lasted about 30 minutes and was interrupted a couple of times with questions. The atmosphere was relaxed. After all, how tense can you be when your questioners have a cheek full of tuna on rye? The audience was obviously aware of management initiatives and to some extent of the concepts of TQM. Some were very widely read in Juran, Deming, and Crosby. After going through the overheads, we were asked many intelligent questions.

What would you do differently to initiate TQM if you could go back and do it over? I could have honestly replied, "I don't know, I wasn't there." But I didn't. Instead, I looked to Karen for help! We mentioned things like greater emphasis on processes, increased teamwork, and concentration on short-term successes.

How do you distinguish which customers are the most important? I had to think about this one. We don't have a formal policy that says one customer is more important than another. Individuals, aware of our mission and our customer relationships, make judgments themselves as to the customer's relative importance.

What is the greatest evidence of the success of TQM in FLH to date? To me it is the obvious existence of an environment that reflects interest in quality. Along with this is a level of knowledge by virtually everyone in the organization. That is, if an improvement is identified, there is a way to explore it and implement it. We are missing a lot of things in our TQM effort, but it is really exciting to see employees get together largely on their own initiative to pursue improvements in the way they work.

Where do you see your organization in 3 to 5 years as a result of TQM? I see an organization where people are recognized as the essence of our business. After all, our people are the one's who make things happen. It is not the pavement or the bridge or the set of plans or the money - it is the people who are behind it. I see an organization that has driven out fear and has eliminated finger-pointing with the result being people who are motivated toward top-notch work because of the rewards associated with it.

Where are you in rewards and recognition? We're working on it. We have a Quality Action Team which has had several meetings and is on the verge of recommending ways we can work within existing requirements to reward teams and individuals in a way that enhances teamwork and excellence. We have the "EDDIE" peer-to-peer award initiative and other award techniques which allow employees to appreciate co-workers.

What is Federal Highways doing in the TQM effort? How about DOT? Karen mentioned a meeting being held on the same date (9/10/90) with key DOT officials to discuss the future of TQM. So far, initiatives have been spotty throughout the Department. FLH has taken the lead insofar as a nationwide agency in Transportation is concerned.

What is your phone number? Finally, a question I could really fully and adequately answer; FTS 366-9492.

When I got back, I wrote a note to Tom, Al, and Larry which contained most of this article. Tom believes that when we become a thoroughly quality oriented organization, each person will have the experience and desire to share what TQM means to their work and their life. Hearing questions and responding to them caused me to see a couple of things more clearly:

o There are organizations where people want to improve but top managers may not fully support a move to a quality environment.

o We in FLH have opportunities to help FHWA, other DOT groups, and anyone else who may be interested. The TQM effort is not confined to FLH improvements. We have learned and implemented our improvements by other's willingness to share. We can continue to learn and implement by sharing our experiences with others.

* * *

Dear Editor,

Recently I had the opportunity to speak, along with three members from Federal Lands Highway [Larry Smith, Al Burden, Mark Chatfield] about "Creating a Total Quality Work Environment" at a DOT seminar. The interest in TQM was really impressive. At the seminar, I picked up a copy of your FLH newsletter. I was impressed by the amount of useable information it contained.

On the last page of the newsletter, you requested articles for publication. As my command's TQM Coordinator, I feel several of the issues I have discussed in the enclosed article are ones others must also consider. Hopefully, it will help in your TQM efforts,

Thanking you in advance for its Publication.

Sincerely,
/s/ Jerry Linnins
TQM Coordinator

F.O.C.U.S.

by CWO2 Jerry Linnins, U.S. Coast Guard Training Center, Cape May

After becoming aware of the improvement potential of TQM, people frequently ask, "Where do I begin." The problems and day-to-day issues we confront often seem overwhelming. We look at what needs to be done and think to ourselves, "I'm only one person. What can I do?"

The answer is **F.O.C.U.S.** This will allow you to target your efforts on those things which can provide you with the greatest return on your investments of time, money, people, or other resources,

As you begin, remember:

a. Start your improvement efforts with those things YOU have control over, Work within your sphere of influence and then expand outward building on your successes - small as they sometimes may be.

b. Be persistent. Make every day, every effort quality time for you and those who work with you, Fine tune what you do as much as possible but also keep your eyes open for those breakthrough improvements.

* * *

F - FACILITATE - PROMOTE, AID, MAKE EASY, SIMPLIFY, DRAW OUT

The primary goal of any TQM effort is to create a work environment which makes it easy for people to do their job. This means refining our systems, processes, and practices to remove any roadblocks that hinder people from achieving their best. The TQM manager must shift their perception of themselves. Its no longer enough to be "The Hammer." Managers must instead begin to see themselves as to "The Coach." Management must become, in a real sense, a support resource for the front line worker.

O - OWNERSHIP - HAVE RIGHTS TO, ENJOY, POSSESS AS ONE'S OWN

Total involvement is a second key element of TQM. When people become involved in the development AND implementation of THEIR solutions to THEIR problems, they begin to feel some ownership for the condition of the work environment. If things are not going well, it is to their benefit to improve them. It becomes a "family" matter. Getting front line workers involved, increase their awareness of conditions affecting potential solutions, and expose them to powerful problem-solving tools, skills, and techniques.

C - COMMUNICATION - PASSING OF INFORMATION

The timely passing of information is essential to the successful implementation of TQM. Top down and bottom-up is not enough. Cross-functional communication is also important. We have to talk with each other and understand how what I do affects you and your ability to do a quality job. We need to establish feedback processes that will allow us to become aware of, and quickly respond to, our customers needs, wants, and expectations, we must align the total sum of our organizational capabilities on the side of the customer.

U - UNDERSTANDING - LISTENING

Once communication has begun, it is imperative those in authority listen. We conduct lots of training in how to speak well, write well, etc. But, when was the last time you studied how to listen? Real listening entails making an effort to first understand, then be understood. It is giving others a chance to vent, to express themselves on THEIR language and on their terms, and to see an issue as the other person sees it. If you have really listened, you should be able to state another's position as well as you would your own.

S - SYNERGY - THE WHOLE IS GREATER THAN THE SUM OF ITS COLLECTIVE PARTS

As humbling as it may be to admit, you or I do not know everything. Not about ourselves, our jobs, our organization, or the complex issues we face. Two heads really are better than one - when they are used! The ability to work as an effective, efficient, creative team is crucial to any TQM effort. However, most of our performance/reward systems were established to recognize individual achievement. That must change if we are to ever achieve a Total Quality work environment.

Guidelines for Establishing and Operating Quality Action Teams

The Quality Coordination Team (QCT) has been working on a set of guidelines to give to Division Quality Councils, managers, supervisors, and Quality Action Team members. The draft of the guidelines has been furnished to the Executive Quality Council for comment. A final version is expected early in 1991. In the meantime, if you want to know what the guidelines say, ask your QCT representative (Eastern, Clara Conner - FTS 285-0038; Central, Bert McCauley - FTS 776-8885; Western, Pat Wlaschin - FTS 422-7922; Headquarters, Pete Perros - FTS 366-9493). The guidelines cover:

- Whether you should be trying to form a Quality Action Team, a task force, or a committee.
- The membership of a Quality Action Team.
- Roles and responsibilities of team members.
- Implementing team activities.
- How meetings should be conducted.
- The steps a team should take to solve their problem.
- How to measure the team's effectiveness.

WFLHD's "EARTH System"

by Glen Bedell, WFL

"Earth Day", "Save the Earth", "Spaceship Earth", "Earthquakes". Today's concern with our crowded and contaminated spinning orb of life has the word "earth" before us often, sometimes in emotional, confrontational, and often dramatic context. Relax. The "earth" relating to the subject here is the more mundane bits of it which are moved around and pummelled into place during highway construction. Do not relax too much. It is exciting that we have demonstrated a very successful cross organizational effort dealing with this earth, or "earthwork" in the construction vernacular, without "direction" by "management". Is that TQM, or what?

WFLHD's unofficial but super effective EARTH System QAT has combined the commercial computer program "EARTH" with the Roadway Design System (RDS) in such a way the down trodden Project Engineer need only enter new data at his or her keyboard when making a line or grade adjustment, or when computing re-measure. The original ground data from RDS, and for re-measure computations, RDS ground data combined with the staked template can be furnished the Project Engineer on floppy disks. It can be loaded into the Earth program with little keyboard input.

Even before the recent definition of a QAT as the "cradle to grave" developing the nurturing group was well understood in WFLHD (it is not yet approved as of this writing), the Earth System QAT was playing that way. They set up a user service scheme right away. They will provide formal training classes this winter. Is that being with it, TQM that is? (It is more like leading it, in the sense of Federal Lands TQM.) [Not a bad idea, according to Mr. Deming . - Ed.]

JoAnn Crabtree was the major force behind the new EARTH system. She researched, tested, justified, and purchased the software. She coordinated the input from all other parties to make it work. She devised and implemented a request sheet for the field to use to request conversion data from RDS. Then there were the memos to inform the field that the product was available. With Project Engineer Larry Adams, she worked to come up with procedures so the field could use the EARTH program.

Larry Adams was the guinea pig. He ran tests, gave feedback, and wrote documentation on how to "really" use the system. He handles the "advertising" of the product and he helps answer questions that come up.

Designer Chuck Borstad played the major role in the RDS to EARTH data exchange. Programmer LeRoy Borstad, Designer Steve Pratt, and Programmer Ted Wood have also been helpful. LeRoy, as always, was a good information source. Steve took the time to explain to JoAnn (in great detail) the RDS RT40 record format and to define template vs. ground shots, *.RDS vs. *.TOP files, etc. Steve was a key component in providing JoAnn with the information she needed to get the RT40 to EARTH conversion program written quickly. Ted was helpful by incorporating an option in his RDS command file which allows a parameter to be added to the regular RDS runs for Composite Cross-Sections.

Marilyn Merwin, Computer Assistant is currently running the show. She is the liaison for the field to request RDS data for their project. She massages it, puts it on diskette, and ships it out. She also made suggestions and took action to implement the improvements to the system.

This team has captured the essence of teamwork and continuous improvement!!

Those whose work does not come into contact with earthwork might wonder just how significant the above described accomplishment is. Be reassured, it is significant. It probably does not rank with a reversal of global warming. But, try to tell that to a project engineer who has gone through a major change in his earthwork design through the "nights and weekends" system, and he may well disagree.

Back while the planet was still cooling, Kipling's "Engineers with Hairy Ears" probably used plotted cross sections on rolls of paper reminiscent of Pharaoh's scribes to determine Earthwork quantities by the average in-area method. A similar method was still being followed at WFLHD's predecessor in the 50's.

This began to change in the 50's with the advent of cheap mechanical calculators and then in the 60's the first main frame computer took over. (It took over everything! That at least was the opinion of some field engineers back then. The complaint of the mandatory requirement to have cross section notes processed by the computer even though that process was so slow they had necessarily already computed quantities by hand to balance the job and make payments to the Contractor.)

The system using the large computer was for field engineers to send cross section notes, loose leaf for the first time, further indicating the power of the computer, to Vancouver for computation. A staff of keypunchers and computer operators eventually got the information back to the field, helped by ex-project personnel then employed as programmers. It took a lot of people to deal with earthwork. Not as many were used as in "Gungda Dins" time, but lots nonetheless. It took more than rice and beans to pay them too.

When the Country's decline to poverty started in the 70's and then steepened in the 80's, ways to deal with the earth on our projects that did not require so many people were necessarily developed. The main ploy was to use what WFLHD calls "final quantity" items. (Elsewhere in the world the term for that is "plan quantity".) That meant that our project staff did not need to measure Earthwork and some other items, or compute quantities, unless there was a change from the original design.

This permitted the centralized computer service to be dismantled. When project changes of any magnitude occurred, the project engineer found himself in a 50's or 60's situation, except he had 1/5 of the crew used in those days, and the crew he had did not all know the old drill. Smaller problems were dealt with by overtime and personal sacrifice. Other work suffered. For the really big problems involving changing miles of road, ad hoc assistance often involving Design and ADP was provided. Nonetheless things were slow and expensive. Other work suffered, other work of all the ad hoc group.

Personal computers were the obvious answer. Realize though there were less than 1/2 dozen PCs available to field crews as late as 1986. Finally, the hardware was in place. By 1988, all significant projects rated at least one PC for the field office. Software continued to thwart.

It did, until WFLHD came up with its EARTH System!

The EARTH System, true to the tenants of TQM, is not static. Its initial use was with all data being entered on the field keyboard. Then the two RDS innovations were added. What's next? One idea is that since we can go from RDS to EARTH, why not EARTH to RDS? That might be at least a partial answer to what is seen as a problem here in using field engineers for winter designers. EARTH is, after all, a design system. Perhaps a field engineer could do some design on EARTH and then give it to a more experienced designer for conversion to RDS.

* * *

EDDIE Award First Year Results

by Clara Conner, EFL

In support of the Total Quality Management effort, the Eastern Division initiated a new employee award during the summer of Fiscal Year 90. This award, the Eastern Division Demonstration of Individual Excellence (EDDIE) Award, was an employee-to-employee recognition of special acts or outstanding achievement. The Eastern Division hopes to continue the award into future years as funds are available. This article reports on its success during its first year.

Any GS series employee could give another GS series employee an award providing neither was the other's supervisor. The award was given by filling out a preprinted certificate and submitting to Personnel for processing. Only one award could be given by an employee, but an employee could receive more than one award. The awards were processed as Special Act awards by the Personnel Office.

A summary of the distribution of the FY 1990 awards is shown on Figure 1. Overall, 199 awards were made available of which 69 were given, or 34.67 percent. Two awards ceremonies were held for EFL employees on August 3 and October 1.

Most awards were given within a branch with a few exceptions:

Administration received 6 from Project Development, 1 from Planning and Coordination, and 3 from Construction. Construction received 1 from Cumberland Gap. Of the 69 awards given, 11 were given outside the giver's office, or 15.94 percent.

Several employees received more than one award. The results were as follows:

one award	29 people (64.44 percent)
two awards	11 people (24.44 percent)
three awards	3 people (6.67 percent)
four awards	1 person (2.22 percent)
five awards	1 person (2.22 percent)

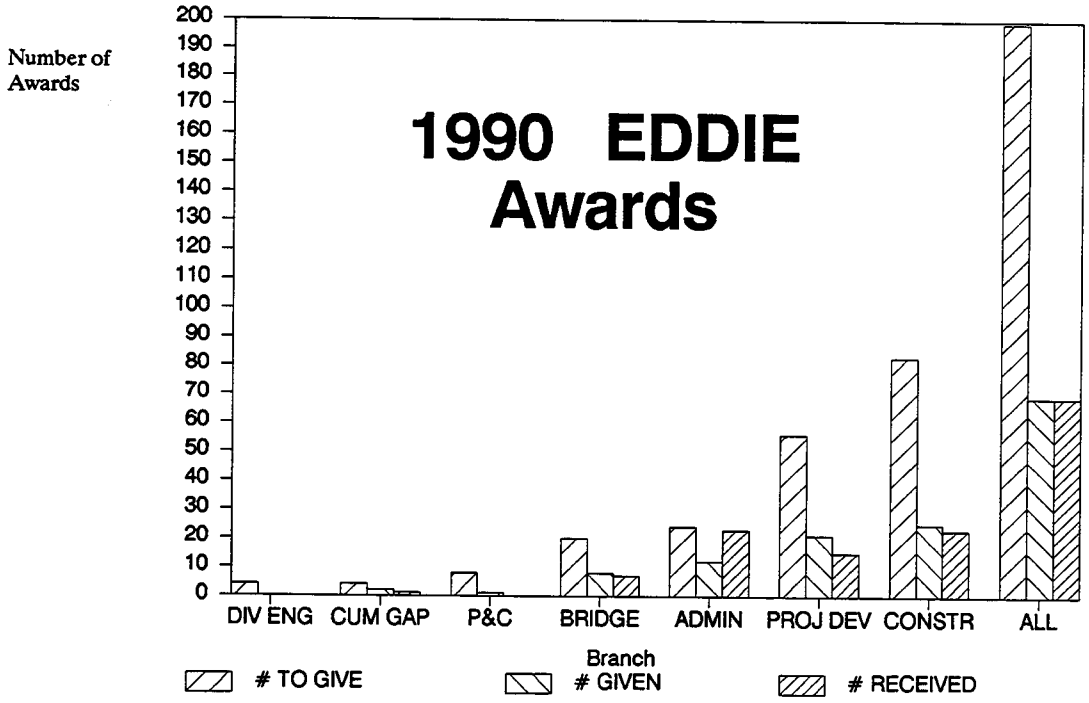


Figure 1

The following are some examples of Reasons for Awards:

- "Continual assistance and outstanding performance."
- "Outstanding accomplishment of daily duties."
- "Worked above and beyond job description to make transition to EFLHD as smooth as possible - Thanks."
- "For providing outstanding assistance and information to Project Development on the use of computers and CADD."
- "For years of always working with you to get EFLHD job done."
- "Helpful and always willing to help attitude."
- "Cheerful, courteous, and timely performance of duties."
- "For your always reliable and high quality of work."
- "Computer assistance."
- "Cooperation and willingness to help others."
- "Consistent production of accurate and high quality designs."
- "For his cooperation during my first two weeks."
- "Maintaining all supplies and equipment, above and beyond regular duties for over two years."
- "For continuous efficient CADD support."
- "Courteous and prompt service processing travel vouchers."
- "For assistance to me in computerizing T&A."
- "For his continual support of field personnel."
- "For years of help and support in FOO."

As part of the 1990 Climate Survey in Eastern, employees were asked to rate three additional statements and provide comments specifically regarding the EDDIE Award. The results of responses to the three statements is shown on Figure 2 on the following page.

Affirmations

(Quoted from "Handbook for Personal Productivity" by Henry E. Liebling.)

I like and appreciate myself.

I encourage myself and others.

I feel warm and loving toward myself.

I am my own best friend and I do at least one thing each day to remind me of this wonderful fact.

I treat my co-workers and team members with dignity and respect.

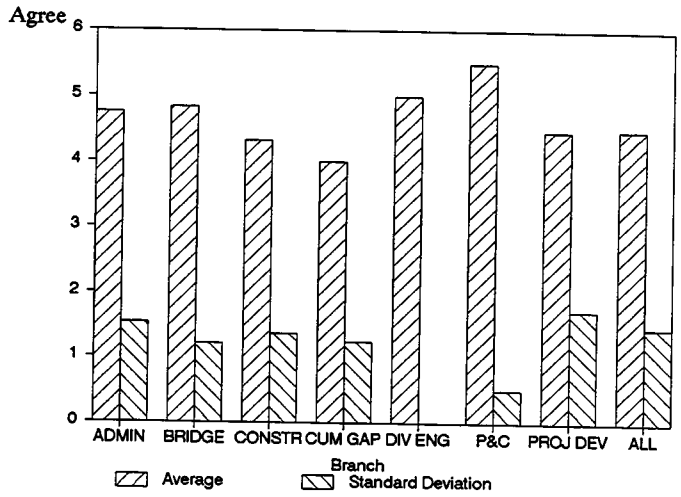
I enjoy compliments and say "thank you."

I "let go" of habits that are no longer relevant to my goals.

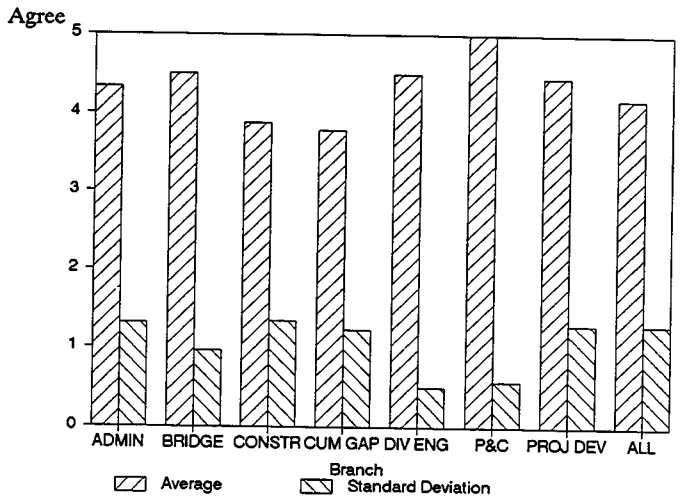
Overall response is positive (all averages are above 3.5); however, most standard deviations are greater than one indicating a wide diversity in responses. The inference is that the overall response to the EDDIE is positive but not extremely so.

* * *

"The EDDIE award should be continued into future years."



"The EDDIE awards are given with sincerity." (note vertical scale difference)



"The EDDIE awards improve employee recognition."

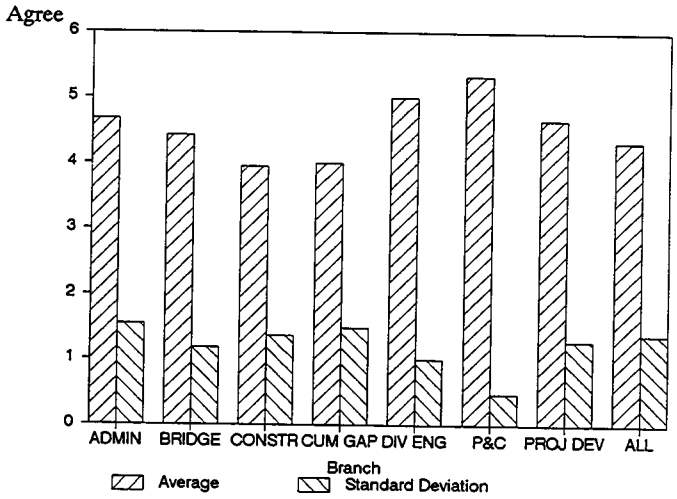


Figure 2

Publication No. FHWA-FL-90-001
HFL-01/1/91(800)P

Volume 2 Issue 2 Federal Lands Highway Spring 1991

FLH QUALITY NEWS

U.S. Department of Transportation
Federal Highway Administration

400 7th St., S.W. *Washington, D.C. 20590* *(202)-366-9492*

Strategic Planning Session

San Antonio, Texas March 4-7, 1991

The Executive Quality Council (EQC) recently brought together all the quality "change agents" of Federal Lands Highway. The purpose was to focus on the Federal Lands Highway Strategic Plan.

Overall meeting objectives were set early on. First, the EQC's Strategic Plan for the organization was to receive special attention. Second, we wanted to get to know one another better. Third, and related to the first, we had an occasion to define our roles and responsibilities. Fourth, we wanted to focus some particular attention on areas of special interest. Fifth, we had a chance to look into marketing the quality principles as a better way to do our work.

Just before his recent surgery, Jerry Rolland of Central Federal Lands, negotiated the arrangements with the Alamo Plaza Hotel on the River Walk in San Antonio, Texas. Jerry Budwig, Jim Roller, and Yolanda Montez all pitched in to arrange all the facilities and take care of the many administrative details for the 43 participants and the team of consultants. Their work was a large contribution to the success of this session. There were two group luncheons and one group dinner when we had the honor of having Executive Director E. Dean Carlson speak to us.

The Alamo - San Antonio, Texas

The Strategic Plan. Our primary product was to initiate the effort toward a single Strategic Plan which represents the entire organization of Federal Lands. A strategy is a long range goal. To make a strategy happen, work elements, or tactics, must be formed. The objective is for the overall plan to be understandable, measurable, scheduled, and in a consistent format.

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Publication No. FHWA-FL-91-007

FLH QUALITY NEWS
Volume II, Issue 2
Spring 1991
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The FLH QUALITY NEWS is an official publication of the Federal Lands Highway Office, Federal Highway Administration, U.S. Department of Transportation. It is published several times a year for educational purposes to promote quality principles among FLH's and other organization's employees, managers, and supervisors.

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In San Antonio, we spent part of two days grouping Division and Headquarters work plans. Now the Division Quality Councils and the Headquarters Quality Council are to look at their work elements and modify them as needed.

Accomplishments, schedules, resource needs, and more detailed plans are eventually to be included. The target date for finishing this first effort is October 1, 1991.

I am the master of my fate, I am the captain of my soul. - W.E. Henly

Not without a plan, you're not. - R.I. Levin

What does all this have to do with pouring a headwall or developing an estimate of earthwork? According to Dr. J. Sullivan, President, Performance Training Corporation who headed the session's consultant team, it has everything to do with it. The Strategic Plan will ultimately be the way people at all levels of our organization can see just how their work fits into the big picture. The idea is that if we clearly see that we are making a real contribution to the whole, we will be more satisfied with our work.

Someone made the comment in evaluating the session, "Stop having TQM orientations and start developing and focusing on real organizational goals." Another said, "Put TQM to work on FLH-wide goals." Indeed, we are beyond the orientation stage and TQM is beginning to have real influence on the way FLH operates. The Strategic Plan is the framework on which it will operate.

Roles and Responsibilities of Quality Councils. Wednesday's topic dealt with the subject of what the various Quality Councils in Federal Lands should be doing. Since we had them all there, it was a chance to have each one everyone give his or her perceptions. Everyone filled out one 3x5 card for each council grouping (the Executive Quality Council, the Division Quality Councils, the Headquarters Quality Council, and the Quality Coordination Team). Then, each group met separately to discuss the results. There were some very interesting ideas. The councils have yet to really analyze all the information, however, it seems each group has some work to do. There are some obvious gaps between what the councils are doing and what they are perceived to be doing. The missions or the perceptions need to change, or maybe both need to change.

The end result will be a better understanding of where the responsibilities of one group ends and another begins.

Getting to know people. San Antonio is a great place to get to know people. The facilities, well, here are some more of the participants' comments: "Facilities were fantastic." "The hospitality room was appreciated." "San Antonio was an excellent experience for the week's events." "[I liked the] communication among attendees during conference and after hours." The word of the 90's for informal discussions about what works and doesn't work in quality management is "networking." We did a lot of networking in San Antonio.

Areas of Special Interest. Tom Edick, Federal Lands Highway Program Administrator, gave an overview of our efforts in total quality management over the past two years. Each of the Divisions, as well as Headquarters, presented their priorities, plans and results. We saw a video of Dr. Marc Roberts giving part of his presentation on creating a vision for the Department of Transportation through the National Transportation Policy, Phase II. We had consultant presentations on problem solving, measuring, leading, and making application of the principles of quality. We heard discussions by FLH people on partnering, teamwork, scheduling, climate surveys, and quality award applications. Then, of course, there was a video of an impromptu picnic held by the Headquarters office last summer. The video was too long and too loud but it did show an interesting perspective of Tom Edick hanging over a rail helping Cindy Cooksey fish Mark Chatfield's baseball out of the Potomac.

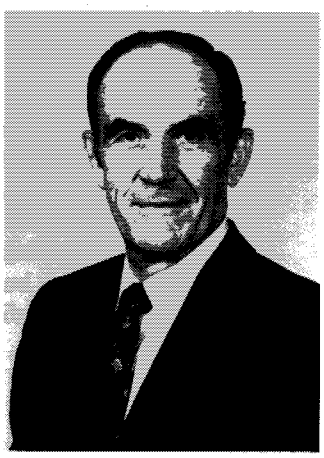
Marketing. We heard what marketing means and how we need to apply it in our efforts to promote quality. We heard a definition of quality which Bill Hayden of the Design and Construction Quality Institute uses, "Quality is conformance to requirements set by management." More on this appears in another FLH Quality News article titled "The Effective A/E Quality Management Program: How To Do It." in this issue. The definition of quality is something we need to get through to all our people - we need to market it.

On the way back from San Antonio we were going over the evaluations by the participants. Top management took a degree of risk in putting on the session and Tom was pleased that most of the objectives for the session had been met. We talked about the suggestions for improvement and the idea of having a similar conference sometime in the future. There seems to be many benefits to be derived and future meetings will be considered.

As we move into a more developed effort in Total Quality Management, the line between what TQM is and what FLH is will become more and more blurred. Eventually the term Federal Lands Highway will mean quality. As this transpires, our strategic planning sessions will probably involve a broader base of participants and cover all the efforts of the organization.

Does Top Management Support Total Quality Management?

One of the tenets of organizations which have successfully implemented programs of excellence and total quality management is that of top management support for the effort. Support can be shown in many ways. One is through downward communications such as the "Administrator's Notes" which Dr. Larson writes. The following is excerpted from the February 22, 1991 "Administrator's Notes."



Dr. Thomas D. Larson, Federal Highway Administrator

"To determine the resources you need in your FY 93 budget to improve transportation-related technical expertise and the ability to use it, envision the work expected of your unit in 1996 and the changes that will be required in FY 1993 to be able to do it. Assume you are fully implementing the National Transportation Policy (NTP), the Administrator's priorities, and the current FHWA reauthorization proposal.

It might help to think of your needs in terms of three areas:

- People. Consider how you will need to refocus the efforts of your employees and how they spend their time. New assignments require new skills. Also, new responsibilities for your organization may require new areas of expertise which can be acquired through recruitment or retraining. Efforts to increase technical expertise and the ability to deliver it to our clients will probably require a

significant increase in our training budget. New courses will be needed in areas such as team building, Total Quality Management (TQM), marketing, leadership, change management, strategic planning, and information technology. Technical specialists are likely to require graduate training, out-service training, and technical courses of long duration (e.g., 6-week courses).

- Equipment. This category includes equipment or information systems you may need to support your employees in their focused efforts. For example, additional furniture, office space adjustments, or microcomputers could help make your employees more productive and responsive to our partners and clients.

- Travel. The amount and types of travel your employees will be doing in FY 1993 may be different than in FY 1991. Greater technical expertise will depend on travel to regional and national conferences, seminars and workshops. Increased training will most likely require increased travel. New ways of doing business may involve greater participation on quality teams or national task forces. "

The Administrator spelled out total quality management objectives in all three key areas of the budget. Yes, Top management supports TQM. When precious resources are directed to it, we can know it is not a fad or a "flavor of the month" technique. The time seems to be here to get serious about quality. Keep reading the "Administrator's Notes" ... it is more than evident.

The Effective A/E Quality Management Program: How To Do It

- Orlando, Florida, February 7, 1991

This one-day seminar was the first of a series of six such sessions offered under the auspices of Clemson University's College of Engineering. It was set up for architect, engineering, and construction professionals in design and construction firms. The course addressed the critical issues in developing and implementing an effective company-wide total quality management program.

The course was presented by Mr. William M. Hayden, Jr., P.E., President of William M. Hayden, Jr. Consultants, Inc., P.O. Box 56022, Jacksonville, Florida 32241-6022 (904) 448-6615. You may recognize Bill's name from the Design and Construction Quality Institute which he co-founded and with which Federal Lands holds membership.

Bill defined quality for us as, "Conformance to requirements set by management." He clarified this:

"85% of the quality problems are due to existing controllable upper management-driven systems."

"Conformance" means having standards and determining variability. The term "Requirements" means what we do and how it is to be done. "Set by management" means that managers make sure customers are identified and their needs are known.

Bill says, "The primary need of quality management is not to better train and equip the troops; it's primary need is to educate the executive management ... in terms of what quality management means; and what the real cost is of a dissatisfied A/E client."

Other Gems

- Cost-effective quality improvements must take place before the 15% point of design. Most before design starts.

- Change is impossible if people are satisfied with the way things are.

- Read "How to Read a Person Like a Book" by Nierenberg.

- Quality Control is counter-productive - "control" mechanisms prevent change. We are seeking Quality Improvement. [I'm not sure I agree with this one completely. I believe there is a place for Quality Control.]

- Quality Control - Doing and checking the work before releasing it.

- Quality Assurance - Verification that the Quality Control process works as it was intended.

- Quality Management - Planning, organizing, and installing a system of procedures related to quality.
- Quality Improvement - Deliberate installation of change after a process is understood.
- Quality Costs - The total of necessary costs (Prevention and Appraisal) and avoidable costs (Internal failure and External failure).
- Vulnerable (change oriented) managers need visible support.
- Executives should model customer-oriented behavior by asking their customers three questions:

  * 1. What do you need? (form and content in measurable terms).
  * 2. What are you going to do with it? (determine the fitness for the purpose).
  * 3. Are there ever any gaps between what I give you and what you expect from me?

- Management's role is to:

  * 1. Identify issues,
  * 2. Set priorities,
  * 3. Allocate resources,
  * 4. Encourage staff to provide solutions,
  * 5. Take on only work that can be done within available resources - Never promise delivery of something new when people are currently over-worked. These strategic decisions are more important than providing technically correct work.
  * 6. Manage participation. This does not mean to institute participative management nor to abdicate management responsibilities.
  * 7. Set overall organizational requirements by:

    - knowing the customers,
    - fitting requirements to customer purpose,
    - targeting timeliness by knowing resources
    - being aware of end-user requirements

  * 8. Don't tell people to do better work - change their environment.
  * 9. Be convinced that **85% of the quality problems are due to existing controllable upper management-driven systems.**

Articles from Central Federal Lands Highway Division - by Joe Clem (unless otherwise noted)

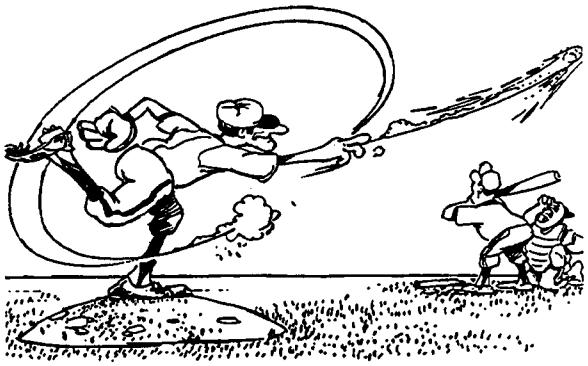
New TQM Coordinator for Central

CFLHD's TQM Coordinator, Bert McCauley, resigned from FHWA in December 1990. Bert is now the Laramie County Wyoming County Engineer. We wish him well in his new position.

Joseph H. Clem, Construction Operations Engineer, *graciously* volunteered to be the acting TQM Coordinator until April 1, 1991. The position has been advertised with a closing date of March 7. It is anticipated that a selection panel will convene the week of March 11. Hopefully, the new Coordinator will be on board soon. [Joe wrote this just before the announcement was made -- our new TQM Coordinator from Central is **Charmaine Farrar.** Congratulations on your promotion, Charmaine. -Ed.]

Joe attended a Coordination Team meeting in Sterling, Virginia, the week of January 7, 1991. The team, working with Dr. J. B. Sullivan, Performance Training Cor-

Measure process as well as results



poration, developed an action plan. The action plan is ambitious, containing 22 items. One of the several items Joe will champion is "Partnering." Partnering can be utilized in working with contractors, client agencies, or internally to improve communications necessary for fulfillment of customer/supplier expectations.

CFLHD Multi-Branch QAT Completes Major Project

The Multi-Branch Quality Action Support Team (MBQAST) from Central Federal Lands Highway Division (CFLHD) has recently completed a year-long team project concerning uniform office procedures. This effort resulted in development of an Office Procedures Guide, "The Book", and an Orientation Handbook.

The MBQAST is composed of secretarial/clerical support staff from the Denver office. Team members are: Teresa Oray, Jane McClaugherty, Penny Lale, Linda Sullivan, Sandy Uffman, Kate Cornwall, LaVica Andre, and Charmaine Farrar and Darrell Harding, co-facilitators.

In initial team discussions it was determined that vast differences in office procedures existed between Branches and, in some offices, only one person had knowledge of procedures. "The Book" was developed in an effort to resolve the differences and provide guidelines for standardized, practical, day-to-day office procedures. Based on the working knowledge of team members, "The Book" addresses topics common to all offices. These topics include:

- Correspondence - correct format for both letters and memorandums.
- Forms - instructions for completion and distribution.
- Organizational information - Branch functions, telephone numbers, maps, directories, etc.
- Requisition and procurement procedures and information dissemination.
- Guidelines for development of a "desk manual" specifically for the needs of individual offices.

The information provided in "The Book" is basic for all offices. With the inclusion of a desk manual for the secretarial/clerical position, "The Book" should provide quick reference for procedures for any given office. Its arrangement encourages usage and easily allows for insertion of often-used forms and/or other updated information.

The second volume, the Orientation Handbook, is a spinoff of "The Book." It was designed to provide office tips and information about CFLHD for new clerical staff supplemental to that provided by Personnel and individual supervisors. Student-aides and other clerical staff were interviewed prior to determining content for the manual. The Handbook consists of practical things people need to know when reporting for a new position. Two designated members of the MBQAST will meet with new staff members soon after they report for duty; the Handbook will be presented and questions answered. By encouraging contact with team members, a network for assistance and cooperation will be established.

Copies of each manual were presented to all Project Engineers (PEs) at Central's PEs' Conference. During the preliminary stages of preparing the manuals, some PEs had been consulted and had expressed interest in receiving copies for their offices.

Although there is some overlapping information in both books, they were prepared for different purposes. It is hoped users will find both volumes beneficial. Keeping the manuals current will be an ongoing team project. Corrections and/or updates will be distributed as necessary.

SUCCESS FOR THE CFLHD FIELD ENGINEERING POOL

Incorporating the philosophy of TQM throughout any organization will certainly bring to light many unique challenges. The Federal Lands Highway Program has a group of employees that, in order to effectively include TQM in their "world," needed to meet some of these unique challenges. That group is the Field Engineering Pool.

Due to the nature of their work, they are geographically isolated from Headquarters or FLH Division Offices most of the year. This created a couple of problems from the outset. First of all, they were not immediately recognized as an "entity" needing specific TQM repre-

TQM Defined

Richard C. Simon, a writer for the winter 1991 issue of "American Consulting Engineer" endorses the Department of Defense's definition of Total Quality Management (TQM). "Total Quality Management is both a philosophy and a set of guiding principles that represent the foundation of a continuously improving organization. TQM is the application of quantitative methods and human resources to improve the materials and services supplied to an organization, all the processes within an organization, and the degree to which the needs of the customer are met, now and in the future. TQM integrates fundamental management techniques, existing improvement efforts, and technical tools under a disciplined approach focused on continuous improvement."

sentation. Once recognized, however, the team was confronted with the logistical challenges of, "where do we meet?

. . . how do we handle travel? . . . etc., . . . etc."

The Construction Engineer quickly resolved these questions, and gave the group the "green light" to begin operating as a TQM team. Eight field pool representatives were elected. They decided that monthly, 8-hour meetings would be a good way to start.

Meeting places were selected based on proximity to field projects, thereby reducing travel as much as possible. Attendance fluctuated depending on various project demands, but there was always a sufficient number present to conduct business.

The first meeting, in June 1990, was formative. They created an operational agreement, discussed the philosophy and purpose of the team, and agreed on a course of action which would ensure full representation of all field pool members.

With excellent facilitation the next several meetings began to bear fruit. After polling the field pool, a common problem was identified -- the deteriorating levels of our field pool personnel, both in quantity and in qualifications. Teamwork methods (brainstorming, nominal group, etc.) were used when applicable, and good, old fashioned horse sense when more formal methods failed. Before long, the team arrived at a promising, albeit ambitious, solution.

After consultation and advice from the Division Engineer, the Regional Personnel office, and the Construction Division, the team leader presented the plan to the Division Quality Council. With graphs, projections, and other data, it was not difficult to convince them that something needed to be done . . . soon.

To the credit of upper management, the plan was implemented with refreshing expedience. By December a vacancy announcement was made for a GS-12 level Career Development and Staffing Coordinator, with full-time responsibility to recruit, develop, and staff the engineering pool.

In January 1991, Howard Tingley was selected with Karen Chadwick being re-assigned as his assistant. The team is now aggressively striving to bring the fruits of this process into working order by the start of this year's construction season.

A final note to those who may still be a bit skeptical about the potential for TQM . . . nothing ventured, nothing gained. Go for it!

Quality Coaches

(from an article in the November 1990 issue of Government Productivity News)

Philip B. Crosby is the expert best known for the concept of "zero defects," when he was in charge of the Pershing missile project for a private defense contractor. According to Crosby's definition, quality means conformance to requirements and nothing else. Quality can only be measured by the cost of non-conformance. This approach requires that the only standard for performance is zero defects.

Whereas the conventional view is that quality can be achieved only through inspection, testing, and checking, Crosby believes there is absolutely no reason for having errors or defects in any product. Therefore, the single word summing up quality management for him is "prevention." To prevent non-conformance, Crosby recommends an organization concentrate on determination, education, and implementation. Yet Crosby doubts there will be much improvement in quality during the current generation because he believes most

employees are hassled and demotivated by their employers, because of the "thoughtless, irritating, unconcerned way they are dealt with." Where demotivation does not occur, a committed and enlightened management can obtain a 40-percent reduction in error rates very quickly from a committed workforce. Complete elimination of remaining errors takes more education and effort.

An important part of the quality improvement process for Crosby is the statement of requirements. Because defects are defined as deviations from the agreed-upon requirements, extensive effort and thought must go into the statement. On this point he contrasts the difference between the contractor-supplier relationship in North America, with that of Japan, where "they treat the supplier as an extension of their own business." For most North American organizations, Crosby has found that half of the rejected materials and parts are the fault of the purchaser, not of the supplier. Because of this, Crosby recommends rating purchasers as well as vendors because purchasing agents have a built-in defect rate.

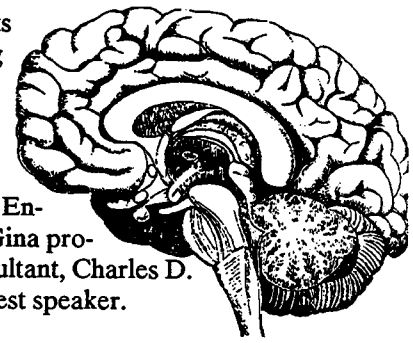
The "Federal Total Quality Management Handbook", Appendix 1A tells us that Crosby offers training through his Quality College in Florida. He is one of the 24 qualified vendor organizations chosen by the Federal Quality Institute to supply training and consulting on total quality management to Federal agencies.

Articles from Western Federal Lands Highway Division - by Patrick Wlaschin (unless otherwise noted)

WHOLE BRAIN COMMUNICATIONS

Western Federal Lands has a Division goal to increase office communications by 10%. The Computer Branch chief, Gina Sexton, is champion of this goal.

To accomplish this task, Gina's plans call for her to establish a communication **benchmark** rating by conducting a survey, provide training and presentations on how to increase communications skills between employees, and to rerun the survey and check her progress toward the 10% goal.



The benchmark results are in and the training has begun. This week we learned about "Whole Brain Communications." As part of the Annual Project Engineers Conference, Gina procured a business consultant, Charles D. Cole (Chuck), as a guest speaker.

Chuck explained that studies have shown how the two hemispheres of the brain operate differently. The researchers took college students from California, numbed half of their brains and measured their new characteristics.

The LEFT brain characteristics are:

Sequential
Language
Hard Data
Non-emotional
Data Based Decisions
Operates on Demand
Slow
Dominant

The RIGHT brain characteristics are:

Random Access, Correlation
Pictures and Feelings
Intuitive
Emotional
Partial Data Decisions
Operates when Ready
Fast
Accommodating

LEFT brain individuals think logically. They like organization and structure in their lives. Their lives flow along in natural ordered patterns. Mr. Spock from Star Trek was an extreme Left brain individual. Lefties don't usually answer questions in a few words, but give long drawn out explanations. They think in terms of words and figures. They want to be sure that you understand their entire thought process for arriving at a given conclusion. They also do not show emotions.

RIGHT brain individuals think intuitively. They like spontaneity and chance. Their lives evolve like the randomness of nature. Right brain individuals have answers for every question, but often do not understand why they know these answers. Righties think in pictures and images. Their emotions are always visible.

LEFT brain individuals use **AUDITORY** techniques to communicate. They learn by listening and often expect others to do the same. They gesture by counting on their fingers and talking in a sequential manner, "I'll explain this to you step by step". They speak in low tones and often run their sentences together. Their speech contains words like; shout, click, follow, note, hear, say, tell, describe, sense, etc.

"By understanding these differences, we can better prepare our presentations and proposals."

RIGHT brain individuals use either **VISUAL** or **KINESTHETIC** techniques to communicate.

VISUAL LEFT brain individuals learn by seeing and reading. They instruct by drawing pictures and charts. They are usually dramatic in gesturing and speak in up pitched, staccato fashion. Speech patterns include descriptive phrases, "Do I need to paint a picture for you?"

They use words such as; see, focus, bright, clear, graphic, show, sketch, shortsighted, etc.

KINESTHETIC LEFT brain individuals learn by expressing and understanding feelings. They like to touch others while communicating to them. They are known to wring their hands, stretch, and rub their arms and legs more than the other two groups. They are usually good athletes and talk in terms of feelings, "I know what it feels like." They use such words as; touch, throw, grope, carry, run, hit, crawl, etc.

We all use both sides of our brains during normal activities. Without even "thinking" about it we call upon both sides as situations present themselves. But when we are placed under stressful situations we resort to a "preferred" side. This fact explains why during normal activities employees or teams function quite easily. However, during crunch times, individuals retreat to the security of their predominant brain hemispheres. Discussions which in the past lead to agreements, now lead to arguments. Compromises and solutions are difficult to obtain.

Effective communication begins by understanding other people and their personality differences. By understanding these differences, we can better prepare our presentations and proposals. We can change to become more effective.

SAVING THE EARTH

During the Save the Earth activities last year, a group of Western Federal Lands employees united to form a Recycling Quality Action Team. Their goals were to increase the amount of recycling in our office, reduce the amount of disposable trash we produced, eliminate one of the dumpsters the office uses, and encourage employees to begin or expand their recycling efforts at home.

Julee McTaggart spearheaded the QAT and obtained management's approval and support. Volunteers for

Recycling Quiz

A. How much high-grade recyclable paper does the average office worker throw away each year?

B. Each ton of recycled office paper saves how many gallons of oil?

C. A can is typically melted, shaped, filled and back on the store shelf within how many weeks after being recycled?

D. If all the paper Americans throw away each year was stacked in a wall between New York and Los Angeles, how high would the wall become?

E. Each month the U.S. throws away enough aluminum to rebuild what percentage of the combined commercial airfleet?

F. How many gallons of water are required to produce one pat of butter? (Answers are on Page 12.)

the team included; John Acerbi, Barbara Allen, John Bucholtz, JoAnn Crabtree, Craig Dewey, Doyle Hill, Cindi Kinder, Gina Sexton, and Ted Wood.

The team secured a recycling contractor and held an all employees "kick-off" meeting. Displays were created which explained how the paper used in the office should be sorted by the employees into four different types. Type A - High grade computer paper. Type B - Typing paper and bond paper. Type C - Card board. Type D - Magazines and high gloss paper.

The Recycling Action Team (RAT) as they came to be know placed recycling bins at strategic locations around the office. They monitor their levels and replace them as required.

Besides paper, aluminum cans are also saved by the RAT team. These cans are either returned to supermarkets for their deposits or are recycled for their aluminum.

Employees are encouraged to recycle from home their glass bottles, plastic bottles and newspapers. The addresses of recycling locations are posted in common areas.

The efforts of this team are noticed every day. Employees have positioned recycling boxes next to their garbage cans. It is easier in WFLHD to find a recycling bin than a garbage can. There is a growing black market in empty Xerox boxes.

The RAT team measures employee involvement and continuous improvement, one sheet of paper at a time. Thank you for your leadership and enthusiasm.

TQM TRAINING

A TQM course which focused on team building, leadership styles and quality process control was taught to selected employees of WFLHD, during January and CLFHD during February. EFLHD is scheduled for the week of April 22nd.

The class is intended for supervisors, managers, and employees who are involved or about to become involved in TQM activities. The topics covered during the class are contained in a 150+ page manual and in a document titled, "Guidelines for Establishing and Operating Quality Action Teams." Both documents are given to students and serve as future reference materials.

There are three areas of focus during the week-long class; team building, facilitator tools, and the problem solving process. These areas are presented and discussed in eleven separate modules. Successful team building requires an understanding of the dynamics of interpersonal communications, feedback mechanisms, behaviors of individuals, leadership styles, and high performance teams. The team leader and facilitator use a variety of techniques and tools to organize ideas and prioritize issues. These are taught in the operational guidelines, roles, warm-ups, and problem solving techniques modules. The problem solving process is the overall structure that quality action teams use to examine and solve their problems.

Team building creates the atmosphere, facilitation provides the tools, and the 9-step problem solving process provides the organizational structure under which quality action teams operate.

A brief description of each module presented in the course is provided below:

Team Building: One of the key elements of Total Quality Management is employee involvement. We attempt to fulfill this requirement through employee participation on quality action teams. This lesson focuses on the advantages of solving problems using a team approach.

Communication: Communication issues were apparent during the TQM orientations last year and may be with us long into the future. During this lesson we focus on active listening and providing timely and appropriate feedback.

Roles: The roles of individuals who participate on quality action teams are explored and explained. Areas of conflict and overlap are discussed and clarified.

Operating Guidelines: As in any contact sport, rules and procedures are a must. We examine some of the ground rules and operational procedures used by quality action teams.

Making Meetings Work: Successful meetings have a purpose and are organized. We provide suggested format and structure to ensure your success when holding quality action team meetings.

Leadership Styles: Recognizing our leadership style as well as those of our fellow employees enable us to become more effective communicators. We become better at persuading others to our point of view and can more readily understand their concerns.

Behaviors in Groups: Being able to recognize and use the various skills and behaviors of team members makes a team leader's job easier. We focus on task, maintenance, team, and individual behaviors.

High Performance Teams: Combining the techniques presented to this point creates the atmosphere for high performance teams. We provide the participants with goals to pursue in this area, and with some measurement tools to check their performance.

Warm-Ups: Successful leaders realize that teams occasionally need a "jump start" to get back on track. This lesson provides them with some useful examples.

Problem Solving Techniques: Every team leader and facilitator uses various tools while guiding a quality action team through their process. This lesson focuses on four such techniques and gives examples of many others.

Quality Process Control: The 9-step problem solving process uses a structured approach to examining problems and implementing solutions. This lesson is presented by an outside consultant, Joe Tunner. Joe lectures on a given step and then leads the class through a given example.

At the end of each day Clara and Patrick perform a critique of the lessons and their presentations. At the end of the week we have the students complete a questionnaire. As we review these comments we modify our techniques and lessons. Interestingly students either really, really enjoy the analytical Quality Process Control lesson or they really, really hate it. See article on Whole Brain Communications for further clarification.

A STICKY PROBLEM

During the Spring of every year WFLHD holds a Project Engineers Conference. At this conference, managers give reports on current issues in their departments and guest speakers show their slides and videos. The overall structure for this meeting is management presenting information to the engineering pool. This pattern holds true with the exception of the session titled "Field Concerns".

The discussions of "Field Concerns" has been and will always be the liveliest topic on the agenda. The conference room fills early with engineering pool employees, managers, supervisors, secretaries, hotel employees, and local tourists all waiting for the fireworks to begin. Definitely a "standing-room-only" event.

Past conferences have seen managers ripped to shreds under the onslaught of constructive criticism during round-table discussions. Employee representatives have been drawn and quartered for making an incorrect

assumption on critical issues. Careers have been sacrificed for the amusement of the crowd.

In an effort to preserve the blood letting, the conference organizers decided to "TQM IT." This is the process we used.

A month before the conference was to be held, the Engineering Pool Quality Action Team, met and brainstormed possible problems which were effecting the performance of the pool employees. This team then ranked their 50+ issues by impact upon the organization. They selected the top three for further study.

Upon further discussion with their contingencies, (each member of the team is responsible for presenting the ideas of eight members of the pool) the team was told that they were working on the wrong items. Quickly realizing that they almost stepped off the gallows, the team circulated their list of 50+ items to the pool employees for their individual ranking. Three steps forward, one step back.

Recently someone said, "Why did you foul up? I thought you had a 'quality' organization." Quality organizations never suggest they are perfect. Continuous improvement implies the obvious - there will always be mistakes which indicate need for change. Eliminating fear in the workplace may only come when managers realize that mistakes are an opportunity for improvement not for criticism.

The pool voted on their most important issues and added another 25. The list grew to 76 items with per diem leading the pack. Out of the list of 76 items, seven items were presented at the conference. Besides PD, communication issues between administration and the pool, office training, computer training, communication between design and construction, contractor staking, and computer programs completed the top items.

Rather than have an open forum free-for-all discussion at the conference on these topics we tried a different approach.

Quiz Answers - see pages 9 & 10:

A. 180 pounds

B. 380 gallons

C. 6 weeks

D. 12 feet

E. 33%

F. 100 gallons

Each problem statement was written on a flip chart and briefly described to the conference participants. The crowd was handed 3"-square "post-its" and asked to further describe their own particular issue within the problem area. The flip chart was hung on the wall and the post-it stickies were tacked on the chart. Another chart was created that was titled "Solutions" and the crowd was asked to propose workable solutions to the problem statement. Again stickies were used to post their solutions.

This process was repeated for each of the problem statements. The statements, covered with sticky post-its were left hanging for three days during the conference. As participants read each others problems and solutions, additional stickies were posted.

Each problem was assigned to one member of the Engineering Pool QAT for follow up. The pool will have the post-its typed up and sorted. Working with the Division Quality Council, the problems will be assigned to an appropriate champion for action, i.e., ADP will most likely receive the computer issues. The EPQAT member who was assigned follow up responsibility will report the champion's progress to the pool employees. What gets measured, gets done!

Much work and effort is required to resolve these issues. We hope that by providing all effected employees direct input into the discussion of common problems and soliciting their solutions that employee buy-in and satisfaction is guaranteed.

The Total Employee Involvement Conference - New Orleans, November 14-16, 1990.

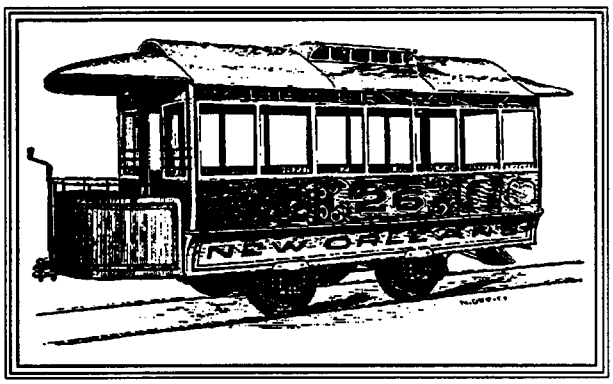
Notes by Mark Chatfield, HFL-1

Our Headquarters Quality Council met to discuss our mission on November 13. One of the lists we developed was that of the expectations we believed employees had for the Quality Coordination Team (QCT). On that list was an item that said, "employees expect the QCT to keep them involved." Someone suggested it be worded, "Total Employee Involvement." My immediate reaction was, "That sounds like a conference I'm going to."

The published objectives of the conference were to show how to:

- Create successful work teams and transform resistance into a true business partnership.
- Equip people with nuts and bolts tools to take on real business-partner responsibilities.
- Uncover the thousands of suggestions for improvement that lie hidden in the minds of your employees.
- Reward employees' ideas and performance.
- Capitalize on the advantages offered by the different types of work teams -- cross-functional, autonomous, semi-autonomous.
- Enrich the strengths and training opportunities of a multi-cultural workforce.

One of my personal expectations for the conference was to learn just what the term "Total" means regarding employee involvement. As one FAA manager recently put it, the alternative to Total Quality Management must be one of three things: 1) Partial Quality Management, 2) Total non-quality Management, or 3) No management at all. In other words, there really is no alternative at all; and I would suggest that once an organization experiences improved management, like a country that first tastes freedom, it cannot return entirely to its old ways. Total Quality Management is



bound to succeed because the alternatives are too poor to adopt. Once the journey has begun, it is impossible to completely turn back. I suspect the same may be true of Total Employee Involvement.

Conferences are like an all-you-can-eat breakfast bar; it is impossible to consume the whole thing. Choices have to be made. You have to guess ahead of time which fare to put on your plate. Then you have to dedicate a good deal of time and effort to take it in, chew it up, and ultimately digest it. Hoping all the while the nourishment will be of benefit to the body and mind without too many adverse side effects. There is a risk. The risk that you will try to make application of something that worked for others but cannot be made to work for you. For me it is eggs. I am allergic to the things. Two eggs for breakfast, not to mention "all you can eat," are enough to give me respiratory problems for a month. I have to look out for the eggs at these conferences.

Pre-registration was Tuesday evening. Of course the conference is intended for private industry and the government per diem rate doesn't even come close to covering the $130 per night lodging cost at the conference hotel. I stayed around the corner where I got a discount - $110 per night. At this rate I only lose $14 a day - as long as I don't have to eat. Who says quality is free? But the price is worth it. The first two hours of the conference had an immediate payoff.

Yes, I have conference proceedings. A book that gives the Los Angeles phone book a run for its money. The real value is the live interactive presentations by people who got where they are by doing what we wish we could.

Bill Dickinson, Editor-in-chief of "Productivity" flashed up a slide of his two pre-teen boys. He pointed out how kids take teamwork as a natural activity. The game is the thing. They are free to get lost in their activities. He pointed out that Thomas Moser said that people who are free to be lost in their work are able to produce objects of virtue.

Dr. Edward Lawler, USC Professor, told us to blend manager and employee roles. (We think we want flatter management in FLH.) Dr. Lawler said to achieve this by:

- Creating teams and empowering them.
- Moving away from "jobs" to matching necessary work to skills.
- Shifting from hierarchy to teams -- Zero Based Management - assume, first, that we need no managers, then decide exactly why and where we do need them.
- Developing the workforce through top to bottom training. Send all employees a copy of the annual report.
- Using information technology -- send a videotape of quality news every 3 months to all employees at their home -- show them and their families the products of their efforts.

Dr. Lawler said the biggest obstacles are:

1) Senior management does not recognize themselves as the problem.

2) Not training employees.

F. Kenneth Iverson, Chairman and CEO of Nucor Corporation (steel), I can't even summarize the wisdom and effectiveness of this man's talk. Let me just say this was the only speaker of the day from whom I felt the cassette tape would be a "must". He pointed out that an organization's success is 20% equipment and 80% people and attitudes. He considers an organization with four management layers relatively flat. FLH has a relatively flat organization. Some outfits over at the Pentagon have 10 to 12 levels of management.

Mr. Iverson distinguished manipulation (getting you to do what I want you to do by coercion) from motivation (getting you to do what we both want to do because you and I recognize it being in our common interest). The keys to motivation --

1) Know what is expected.

2) Understand rewards. Don't make them subjective; they should be strictly objective, by the numbers.

3) Know where to get help.

4) Participate in goals and processes.

5) Have a working feedback system -- employees know how they are doing.

Donald Lindemann, of Citizen's Gas and Coke Utility,told us how his organization, is blessed by having an outstanding competitor, the local electric utility. Among others, he pointed out that one of their customers is the Indiana Utilities Commission -- their regulators. Somehow, considering those who regulate us as customers seems foreign, but it works and it is right. Who are our regulators in FLH? Does this mean those unreasonable folks at EPA and National Wildlife Federation are our customers?

Some of my lost lodging cost was made up when the hotel agreed to let my Dad to join me in my room with no additional charge. He was to fly out from Seal Beach, California Wednesday afternoon to see me after each daily conference and for part of the weekend. More was made up when my conference fee included a nice lunch. After lunch came the break-out sessions.

Bonnie Wilgus, Hughes Aircraft in Fullerton, California. Bonnie is a training specialist, a former school teacher and an excellent speaker. Her topic was "Boosting Team Problem Solving Results with the Seven Management Tools." She recommended Bob King's book, "Better Designs in Half the Time." This book describes the seven tools which Bonnie says are especially good for handling verbal input.

In FLH we seem to deal a lot with verbal input -- goals, ranking of ideas, most important concepts, prioritizing efforts. These tools supplement techniques with which we are more familiar like brainstorming and the nominal group technique. Not only do they give variety, but also they permit dealing with large volumes of information and ideas without losing some of them in the process. One of her favorites is the "Affinity Diagram" which uses Post-it notes and the team moves the little notes around (one idea per note) until all the ideas are grouped. Then the groups are classified and prioritized.

She also recommended the Joiner Team Handbook. I got to sit in the front row and was able to ask, "How do you know when to use a team versus a committee or task force?" I detected that they haven't entirely solved this one either. Her response had to do with the expected impact. If it is largely a day-to-day activity, it may be

better to use a task force. If it is organization wide or affects a large contingent, use a team.

The last break out session on Wednesday was with **Mark Richardson of Sara Lee Knit Products.** Mark informed us that he is an ENFP (Extrovert, iNtuitive, Feeling, Perceiving) on the Myers-Briggs personality assessment. I never knew any ENFP's. I thought almost everyone was an ISTJ (Introvert, Sensing, Thinking, Judgmental) like in Federal Highways. I always thought I was weird since I rate an INTJ. Mark informed us that he sometimes has problems organizing things, but he is almost always optimistic and innovative. His session proved it. Somehow he got our group of about 200 to break into teams, participate in his discussion, play a game of Trivial Pursuit and take part in a raffle -- all in 90 minutes.

My Dad arrived on time. He showed me a gumbo shop on St. Peter's Street near Jackson Square. If you like crawfish, that's as good a place to get them as anywhere in New Orleans.

The first break out session on Thursday was by **Fred Rosenberg, Corporate Quality Manager of Hercules, Inc.** Hercules is a worldwide corporation in chemicals and aerospace. Over the past eight years, largely without senior executive initiative, they have become a quality oriented organization. Fred's topic was "Convincing Senior Management to Lead." I had to ask myself after the talk began why I chose this session over some others. In FLH we have top management totally on board. I guess I thought I could get some pointers on how to help influence top management in a way that will lead to consistent, continuous improvement. There are times I believe we need to slow top management down so we can all focus, scan the horizon, pick out our objectives clearly, then restart the engine and head for the goal.

> *"When the student is ready, the teacher will appear."*

Fred had a great quote and a couple of good paradoxes. The quote (in the box above) has to do with worrying about how we are going to learn all we need to learn. It sounds like a Chinese proverb to me. Application in FLH? Maybe we should not try to force managers into learning all the tools right now. When they are convinced they need them, they will demand to be trained. Our job is to make training available and provide the leadership and example to show there is something to be gained by the process.

The first paradox -- "Participative processes are autocratically lead. Someone, somewhere, must say, 'Okay, this is the way we're going to do things.'"

The second paradox -- "TQM decision making requires management by facts but involves believing before seeing. We must begin the effort without hard data, believing it will work or seeing no alternative but to try."

Speaking of paradoxes, this discussion caused me to think about how the best places are often also the worst places. What do you first think of when someone says, "New Orleans?" My first thought always was of Bourbon Street, drunks, strip joints, and the depths of human degradation. This week, my 79 year-old Dad showed me the River Walk, St. Charles Street's beautifully restored homes, the oldest operating trolley car system in the Country, Audubon Park and the New Orleans Zoo, the second largest sea port in the world, the home of the Superdome - a city trying to overcome a bad reputation. Like a wonderful person with a disease that looks like leprosy.

Washington, D.C. is the same in many ways. It's the most powerful city in the world but also the one many people think of first when the words crime and drugs are brought up. Maybe what has happened to the old Jax brewery indicates the future. It no longer operates in the old way. It has transformed, metamorphosized into a gem of a shopping area and center of creative art. Who do you know that has a reputation or personality trait that you avoid? Do they also have characteristics that reach beyond on another plane of thinking? What can we do to use those characteristics as part of our teams?

That was a free excursion. Back to the conference. Specifically, how can senior management best lead?

- Find and nurture champions.
- Let the champions sell.
- Build and publicize success models.
- Promote self-awareness and self-affirmation.
- Become and remain the "Quality" role model.
- Take the initiative -- ask forgiveness, not permission.
- Be persistent.

- Teach, train, coach, facilitate.
- Look ahead, don't bash the past.
- Listen to employees and teams - they must know you are interested.

Peter Grazier, President of Teambuilding, Inc. Peter's talk entitled, "Overcoming Resistance to Employee Involvement.

My objective for this session was to get some real advice on how to address one of our current problems. The perception that mid-management at FLH needs to be more involved in our processes for improved quality. He pointed out that three out of four times companies try to institute employee involvement, they fail. He also pointed out that early successes may result in sabotage by mid- and upper management. Why? They may see employee involvement as successfully threatening their traditional roles and expertise. He said that 72% of the managers and executives know employee involvement is good for the company. 60% recognize it as good for the employees. Only 31% see it as good for themselves. He recommended Massey's book "What You Are is Where You Were When." The 1983 film by the same title is in our library. His outline covered areas of resistance but stated that management resistance is the most serious and most prevalent. Why do managers and supervisors resist employee involvement?

- Insecurity.
- Personal values (belief system).
- Ego, management perks.
- Historical management training hasn't included employees in the thinking out of management strategies.
- Personality -- managers and engineers are Myers-Briggs "thinkers" not "feelers."
- Paradigms of work - employees aren't allowed to do this.
- Poor implementation of employee involvement concepts. The typical poor implementation is:
    - Top executive decides it is a good idea.
    - He or she assigns mid managers to "get something going."
    - Mid-managers are usually left out, or worse, considered obstacles rather than resources.

Mr. Grazier's suggested remedies were very interesting:

1. Have an implementation plan that concentrates on problems, not people and allow sufficient time for management training and indoctrination -- starting with top management. The Division Engineers are the ones who should be attending Deming Seminars and TEI Conferences. He also recommended the use of newsletters and special mailings.

2. Design for management involvement by having meetings between senior and middle management, involving mid managers and supervisors in planning sessions. Have working retreats. Ask mid managers what their biggest obstacles are, then ask them what would be good ways to overcome these obstacles, involve mid managers on problem-solving teams, get managers to visit other organizations who are using employee involvement.

3. Raise comfort levels by letting mid managers know we are really, genuinely interested in sharing the problems with them.

4. Be consistent and set up regular process checks. Let managers know it is not going away.

5. Don't tolerate insubordination. If top management sets the direction toward employee involvement, those who challenge the direction must be dealt with as being insubordinate. Our last speaker said, "At Sea World in Orlando, what do you think they do with the dolphins that don't perform?" He answered his own question, "They don't keep them in a special tank in the back and feed them at the expense of their customers."

Margaret Molinari, Consultant, GM Organizational R&D on Respiriting mid-management.

We have tended to leave out mid-managers. GM's Truck and Bus Division is using a "Salaried Congress" to involve mid-managers. Many programs address hourly employees and their unions. Several programs involve top executives. Mid-management had no special involvement until a few years ago when the idea of a "congress" was adopted. Now, each operating office

or division (equivalent of our field Divisions) is asked to send a cross-section of salaried employees as representatives to an annual session. Divisions select their own in their own way with only instructions to send someone from every level, every function and every location. The typical agenda includes introductions, gripes and issues, presentations by top management on the strategic business plan, celebrations, and followup.

Margaret described "spirited" work as an organization which is alive, pulsating, energetic, creative and dynamic. She urged us to think of an organization as a body having a spirit, direction, and personality. Not just an organization chart and numbers of employees. The examples she mentioned were the Saturn plant and Apple computer. She described three dynamics: Bonds (forming a bond of familiarity between and among executives and managers), Integrity (not just honesty, but an organization where each part reflects the whole and all parts fit to make up and to complement the whole. The strategic business plan should define mid-managements role). On the subject of continuous Improvement she challenged us to think not just of linear improvement but accelerating improvement. (I don't think I buy this one.)

Eliminate the "I think" syndrome.

At the "congress" sessions, innovation is widely used. Talks are kept under 20 minutes. They do stretches and exercises. Discussions are artistically rendered and graphics are widely used. The bottom line is implementation of the strategic business plan through participation by senior management, interaction between senior and mid-level management, and making an honest effort to get to know each other and establish a relationship.

Friday - back to general sessions.

Mr. Bob Tallon, retired president of Florida Power and Light made a nice presentation. Among the points which we can apply are:

1. Their Strategic Business Plan had some 30 items. They recognized they couldn't do them all. Bob said, "Don't chase too many rabbits, try 4 or 5 per year. Identify them and then ask managers what they can do in their annual plans to help get there."

2. They developed a table of tables - a single large chart showing all vital areas and measurements in one place. When I asked Bob for a copy of the table, he said he would send me an invitation to a special course put on by their affiliate, Qual. Tech.

3. Ask yourself what percent of revenues go out to vendors - that indicates the level of effort we should spend on working with vendor's quality.

4. Eliminate the "I think" syndrome.

Diane Cory, a presenter and facilitator with Ann McGee, Cooper, and Assoc. talked on the subject of the Business of Leadership -- Who's in charge Here? She recommended a book, "The Experts Speak," and suggested that we, as experts, should remember that today's experts could be tomorrows fools. We need to turn our expertise into mental and emotional flexibility. As she was speaking about the need to consider emotions and feelings in our dealings with one another, I remembered what another speaker had said earlier in the conference, "The 'soft' side is really the 'hard' side." Another neat quote, by Mark Twain, I think, "Anybody could lead perfect people, if there were any." We need to learn to forgive, reconcile, accept imperfection, listen, have compassion, courage to act or wait; and we need to understand grace."

Diane shocked everyone. She told us she was the mother of four, the oldest of her children is 20. We were all thinking she was not much older than that herself. She suggested that storytelling is the most sophisticated of art forms. Then she proceeded to tell us a story she wrote for one of her client firms several years ago. I can't tell it like she did. I won't even try. I didn't purchase the tape either. I did ask her to send me a printed copy of it, which she promised to do. I will probably share it later. The story she did tell and which I will repeat was a true one about her 7-year old daughter, Megen.

Megen is an intelligent and creative and sensitive girl. She is also like the cartoon character Pig Pen. Everywhere she goes, there is a mess. Diane has removed all the furniture from her living room so Megen can have her art work there. One day, after spending 13 hours trying to straighten out old fashioned managers, Diane came home to a household where the day's activities were geared to alleviate Mom's worries about the house always being a mess. Megen greeted Diane with all the excitement a 7-year old can generate. "Come see my room! I've spent all afternoon getting it organized." Upon walking in to her room, Diane was shocked. Megen had found a hundred lunch bags, carefully marked each one, filled the bags with items and grouped them in categories. Then, she had clothes-

pinned the bags to the Levelour blinds all over the room causing the blinds to buckle and sag. Diane shrieked, "What have you done? The blinds are ruined!"

A few minutes later, Megen came to her mother. "I am a bad and an ugly person," she said. Diane, after mentally reeling at the thought of what damage she had done by her reaction, tried to repair the emotional trauma of her daughter and herself by asking Megen to help her organize her room the same way. But neither has fully recovered. Both recognize the need to avoid such confrontations. Diane especially sees the need for leaders to be mentally and emotionally flexible so that even after fatigue and frustration from the day's activities have them on edge, another person's feelings must take priority over the work of the moment.

Managers have Megens working for them.

James D. Edwards, President of Spencer Industries, Inc. talked about leadership. Among his points was a training curriculum they use:

1. Team performance, human behavior.

2. Pinpointing and performance feedback.

3. Graphing and data analysis.

4. Reflective listening.

5. Reinforcement.

6. Correcting undesirable performance.

7. Creative problem solving.

8. Effective meetings.

9. Team meetings.

10. Advanced creative problem solving.

The minutes of all team meetings are posted on a central bulletin board.

He said we need to change CEO to CPO - Chief People Officer. Executives must LEAD cultural change, not mandate it.

The conference was closed with an inspiring talk by **Gary Heil, co-founder of Heil, Tate & Assoc.**

He spoke loudly and swiftly. He made me feel threatened by his boldness and aggressive extroverted speech. He made us laugh and think. He said executives must make the philosophy of change mandatory. He called participative management and empowerment buzz words. Mere empowerment is not enough, employees must be given a degree of control over changing the system. It is better to give people the license to think. We should consider that ownership carries with it responsibility - at least a share of it. When you rent a car you don't worry about changing the oil. When you own a car, you make sure it is not overlooked. Employees should be allowed to:

- Gather customer information.
- Help design service delivery processes.
- Measure their own performance.
- Identify disgruntled customers.
- Find the root cause of service problems.
- Identify and eliminate low priority tasks.

Better than recognition, give people a cause to come to work. Joseph Campbell in "Power of Myth" says that everyone wants to be a hero. Everyone wants to know they had a part in making something better. Give people a chance to leave a fingerprint.

Partnering in EFLHD

by Clara Conner, Eastern Federal Lands Highway Division

In Total Quality Management, we have talked a lot about developing teamwork within our organization, developing better communication and cooperation among individuals with differing strengths to make continuous improvements through shared goals and objectives. With partnering, we talk about using communication and cooperation to recognize and develop the complementary objectives of two

separate organizations. In the last couple of months, a contractor and the Cumberland Land Gap Project office of EFLHD have developed a partnering agreement with the assistance of a neutral facilitator, Dr. J. Sullivan of Performance Traning Corporation. Partnering, in this case consisted of:

- Establishing a partnering team made up of key players from the contractor and the Cumberland Gap project office.
- Interviewing team members to determine key issues.
- Meeting with the partnering team and the facilitator on a regular basis to discuss and resolve key issues.
- Surveying the partnering team after the first two meetings to assess the partnering process, and providing team members with feedback about the process.

The following are exerpts from "The Partnering Process, Federal Lands Highway, The Wright Brothers Construction Co., Inc." It is dated March 4, 1991 and was prepared by Dr. Sullivan of Performance Training Corporation:

From the Federal Lands side, this willingness [to enter into partnering arrangements] is driven by a commitment from the top of the organization. The willingness is also driven on the job site by the hope that some substantial gains can be made in improved relationships with all contractors on the job site. Further, it is hoped that improved relationships with contractors would result in the furthering of FLH organization-wide vision. In general terms this means that FLH would see high quality projects done on time and within budget, that claims and litigation would be reduced and eventually eliminated, and that the application of state-of-the-art technology would lead to improved construction techniques and lower total project costs nationwide. Specific to the Wright Brothers, the FLH people hope to gain:

- Experience which can be used with other construction organizations to create a relationship as good as this one. To learn what we are doing right and how to build excellent relationships.
- Elimination of the perception that we are "cops." All too often FLH engineers get cast in a role of being the tough guy enforcer who makes rigid and unyielding demands, levies fines and creates an adversarial relationship with the contractor. The "new" realization is that we hope to be able to accomplish our quality objectives through communication and cooperation rather than confrontation.
- To enter into a problem solving and decision making partnership with the Wright Brothers.

"... this means that FLH would see high quality projects done on time and within budget..."

From the Wright Brothers' perspective, the partnering process is also driven by participation at the top of the organization. They insure that decision making and resource allocation will be clearly visible at the top of the organization. Their champion on the job ensures that the principles of partnering are followed on a day-to-day basis. The Wright Brothers Team's willingness to participate is dependent on the fulfillment of some prerequisites:

- The FLH Project Manager (PM) must participate as a member of the FLH team.
- The Wright Brothers will be able to run their equipment as they choose. The expectation is that entering into a partnering arrangement does not mean that day-to-day decisions regarding construction operations will become FLH decisions. In order to operate effectively the Wright Brothers must retain final decision making authority over their men and equipment.
- The Wright Brothers have the right to withdraw from the partnership if it is in their financial interest to do so. This does not mean that the Wright Brothers are in any way suggesting changes to existing agreements.
- If the Wright Brothers Team and the FLH Team cannot gain mutual agreement on goals, then both teams will dissolve the partnership.
- Before the partnering team-building session, each team will receive a list of expected outcomes from the other team so that we can see what is expected on both sides.

Not only do the above prerequisites apply to the Wright Brothers team but they also apply in reverse to FLH.

From the Wright Brothers Team there are two kinds of desirable outcomes from the partnering process. The first set of outcomes are those things of greatest benefit to the Wright Brothers. These objectives include:

- To convince Wright Brothers people that FLH is fair and reasonable.
- The Wright Brothers Team wants to get the most out of The Critical Path Method (CPM) so that Wright Brothers Construction can benefit from using the system on those projects where it makes sense to do so.
- To reduce paperwork is an important consideration for the Wright Brothers. Paperwork represents lost time and overhead when it does not contribute to the bottom line. As an example the Cumberland Gap project represents an estimated 5% of the Wright Brothers business but 50% of their paperwork.
- The Wright Brothers Team seeks ways to work more profitably.

The following list represents a list of those things of initial importance to the Wright Brothers Team in their working relationship with FLH. This should not be considered a final list ...

- The Wright Brothers Team would like to establish an agreement that if somebody recognizes a problem, the person who recognizes the problem brings it to the attention of both teams...let's not let it grow just because the other team is trying to figure out a solution. ...
- The Wright Brothers Team would like to streamline the CPM process. Both teams recognize that there are advantages to the CPM. These advantages help both the Wright Brothers and FLH stay on schedule, identify problem areas, and discover the most cost effective solutions in some cases. However the problem with the CPM lies in its implementation. Specific areas that need help include:
    - * Cut paperwork.
    - * Right to review changes in the CPM.
    - * Minimize the amount of time it takes to make changes in the CPM.
    - * Be certain that we are measuring the right things on the CPM. (example) excavation vs. fill.
    - * Gain more of the FLH input on the CPM at the right time to minimize reworking the CPM.
    - * Get advance warning on changes. An example is the 60 pipeline replacement. We thought that we would be extending a line but it turned out that we had to replace pipe, too. No one told us about this until we had the hole dug.
    - * We would like the right to move from one phase to another phase.

Partnering Evaluation

How has partnering helped your organization (Wright Brothers)?

- By getting decisions faster and improving communication.
- Partnering instills confidence in our organization that the efforts of FHWA are genuine.
- First, it has shown team members and members of my organization that disagreements between the ownership and the contractor need not be an adversary relationship. Next, it has helped us understand that differences are often caused by past experience that may not relate to the project at hand.

How has partnering helped your organization (FLH)?

- Too early to tell.
- It has forced many people to reassess the potential adversarial relationship which was developing. It has forced a more unified stand by the FHWA team, with less individual effort in sometimes opposing directions.
- It has given it a broader view of the total engineer/contractor relationship/partnership and the potential for working closer together and achieving greater performances.
- It helped the project personnel be more open with themselves and the contractor.

"It has a tendency to look like the union is in bed with management. If it looks like that, it looks like that, but it sure does get us a lot of things we want. I sit back, I smile, and say, 'This is great. It makes my job easier.'" **The Deming Management Method**, by Mary Walton, p. 155.

"Learn... to work as partners with suppliers and distributors, rather than as contractually driven adversaries;" **Thriving on Chaos**, by Tom Peters, p. 230.

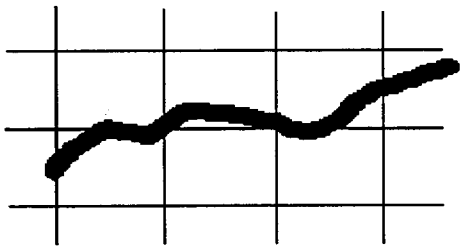
Volume 2 Issue 3 | Federal Lands Highway | Summer 1991

FLH QUALITY NEWS

U.S. Department of Transportation
Federal Highway Administration

400 7th St., S.W. *Washington, D.C. 20590* *(202)-366-9492*

MEASURE!



The theme of this issue of the FLH Quality News is "Measurement." Several articles mention or discuss measurement. In them you will find insight into what is measurable, when to measure, and what to do with that which is measured. To set the tone, here are some concepts from Will Kaydos' book, Measuring, Managing, and Maximizing Performance:

- A well defined system of performance measuring improves performance. It provides a framework for making decisions.
- The goal of measuring is to give managers a clear understanding of what is best for the organization. With this understanding, their many decisions will be better decisions.
- Without valid data tied to this frame of reference, decisions will be based on false assumptions and personal values.

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FLH QUALITY NEWS
Volume II, Issue 3
Summer 1991
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The FLH QUALITY NEWS is an official publication of the Federal Lands Highway Office, Federal Highway Administration, U.S. Department of Transportation. It is published several times a year for educational purposes to promote quality principles among FLH's and other organization's employees, managers, and supervisors.

Other topics may include information about programs, policies, projects, and administration. Contents of this publication may be used without permission. However, courtesy credit is appreciated.

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- Translate strategy into specific terms. Then performance measures will enhance the decisions of everyone from the executive level on down.

- Objective performance measures help keep everyone working toward the vision - even those who may not appreciate the measuring system.

- If performance is not being measured, it can almost certainly be improved.

- The things that are measured become important. Important things get done.

- The things we think we see are not always correct. Performance measures allow people to put problems and their work in perspective.

- Chaos is the absence of managed performance. If we would manage performance, we must measure performance.

Performance is usually defined as maximizing or minimizing a few variables while acknowledging existing constraints. Examples in FLH might be, "Minimize the number of construction zone accidents while keeping projects open to traffic 95% of the time." or, "Increase the employees perception of their supervisor's coaching efforts by 10% for all employees supervised for the entire fiscal year."

From the TEI Institute:

Bill Dickinson, Editor-in-Chief of the Total Employee Involvement (TEI) Newsletter writes about measurement:

"The great American novelist F. Scott Fitzgerald once observed that you can tell an intelligent person by his or her ability to hold two contradictory ideas in his or her head at the same time. Rub the two sides of a contradiction against each other and you get creative fire. Think with me for a moment about an apparent contradiction: on the one hand, you should keep and publish scores; on the other hand, you shouldn't obsess about measures.

Reflexite's Phil Ferrari finds himself more challenged by employees to keep and publish timely scores than he was by the SEC during his days in publicly held com-

panies. Tom Peters -- who says we should measure, measure, measure -- urges us to get out and visit winners and see how they keep score. Rheem's Hal Boyette thinks a scoreboard is basic to a TEI launch. Michel Greif tells us how the World Class companies make their measures visible. And St. Luke's Mae Moss says that scoreboarding drives her improvement effort.

Yet, author Larry Miller suggests that to obsess about numbers can be as deadly and irrelevant as fiddling while Rome burns. The real task of change-minded managers, he says, is to focus not on numbers, but on core values. If we want to breathe new life into our enterprises, our job is to have an inspirational vision, a heartening picture of where we want our organization to be in the future.

To measure or not to measure -- which is it?

Tom Peters -- bless him -- points us in a direction that lets us hang our hats on both horns of the dilemma. The key question is not whether to measure, but what to measure. Says Peters, 'I've been arguing for a long time that we are basically determined by the weight of what's in our in-boxes. And if everything in the in-box is about cost and efficiency measures, and there's nothing measuring innovation, quality, and service, then that's what the company is going to instinctively focus on.'

Larry Miller might respond, 'How do you measure the quality of inspiration?' But both men are on the same wave length about this one: you don't. If your goal is to have a future for Rome, you start with a saving vision, you choose your measures accordingly, and you let the creative tension between the two guide your improvement efforts."

CFLHD'S PAST AND FUTURE IN TQM

by Charmaine Farrar, CFLHD TQM Coordinator

Several month's ago, I took on what I believe to be one of the most challenging positions in CFLHD, that of the Division TQM Coordinator. The future of TQM, however, is beginning to look brighter in CFLHD due to better guidelines and stronger support from upper management.

We have learned many valuable lessons since we began forming TQM teams in CFLHD approximately a year ago. Following are some of those lessons:

- Membership on the team should be voluntary.
- Team members should share a common vision or work on similar processes.
- Problems should be well defined.
- Large problems should be broken into smaller problems.
- Team guidelines should be developed and implemented early in the team process.
- Management support is vital to the success of the team.

Currently, the teams that still exist are those with members that have common goals, visions, and guidelines. In the past, teams were unable to collectively analyze problems when the members worked on different processes or had different goals.

The *Guidelines For Establishing and Operating Quality Action Teams* has become a very useful tool for teams either just starting or in the middle of the problem/solution analysis. In addition, the guidelines have resolved the issue of the facilitator/team leader role we had developed in many of our teams. The guidelines have also set out a simple step-by-step process the team's can use as a reference for "where do we go next" and to help measure their progress.

We now have five teams that are functioning within CFLHD.

The Multi-Branch Quality Action Support Team (MBQAST), our first team formed in CFLHD, is a successful team due to the team members' common goals of improving the CFLHD support system. Recently, each member on the team received a Special Act Award due to their many "noteworthy achievements" in team building and preparing the "Handbook".

> "Those who promise magical cures and quick success not only don't understand the problem, they are part of the problem." W. Edwards Deming

"Every step of progress the world has made has been from scaffold to scaffold and from stake to stake."

-Wendell Phillips, Speech for Women's Rights (1851)

development section within the organization. The team received support from the Division Quality Council (DQC) in the creation of the Career Development Section. They presently are working on a variety of problems including poor contractors and their effect on quality, per diem and travel, and materials laboratory and slope stake training.

The Administration "A" team was one of the first teams to use a customer survey. They used the survey to identify problems with the quarterly order and supply catalog. The team is currently working on some vital issues, such as producing supply order as well as inventory computer programs. With the Local Area Network (LAN) installation, this could prevent errors and save time when ordering supplies.

The book was "developed in an effort to resolve differences and provide guidelines for standardized, practical, day-to-day office procedures." The team is presently using the nine-step process to analyze the problem of travel procedures within CFLHD.

The Project Development Quality Action Team originally started, like the other teams, without a clear set of team operation guidelines to approach problems and find solutions. With the new set of guidelines for operating teams, they understand the direction they should take and their roles within the team. Currently, they are inventorying the products and services of their internal customers within the branch. This team, like other teams, has found there is a great amount of work in assessing who their customers are and the products and services they receive and supply.

The Field Pool Quality Action Team had the quickest team success story since the inception of the TQM team process within CFLHD. They succeeded early because they gathered data to provide evidence that there was a need for a change in the system of allocating field personnel. The solution they presented resulted in the establishment of a separate staffing and career

The Bridge Quality Action Team, one of our newer teams, decided to develop a pilot Career Development Plan for the employees in the Bridge section. Initially, they will formulate a road map that will contain all the elements of the plan. This project is included within the DQC goal to "develop a written career development program for all employees." The team has been successful because they have worked with outside resources and have gained the support of top management including Mr. Edick.

Although we have implemented several of the teams' solutions such as the "Handbook" and the Career Development Section, we still need to measure the effectiveness of these solutions. This is a challenge to the teams who have completed the projects and want to move on to other problems.

I'm often asked when we will be done with TQM. TQM is a process, not a program, that involves continuous improvement, customer satisfaction, and employee responsibility. When can an employee say they have fulfilled each of these parameters for a particular process? TQM is like "a race with no finish line, it just continues."

The Dead Toreador

by Mark Chatfield, HFL-1

Edouard Manet in 1864 painted The Dead Toreador. It is on display at the National Gallery of Art. The painting presents a life-sized image; a dramatic, striking portrait of death and also of the intense life which immediately preceded.

The Dead Toreador; Edouard MANET; National Gallery of Art, Washington; Widener Collection (Date: probably 1864; Canvas; 0.759 x 1.533 (29 7/8 x 60 3/8 in.). Reproduced by permission to FLH Quality News from the National Gallery of Art..

There is a lesson here for those of us who are wondering when we'll be done with TQM. The question, "How will we know we've arrived?" discloses the need for a better understanding about the journey. The various awards which are available for organizations are also misleading. We don't stop our efforts to improve just because we apply for and win awards. These are encouraging confirmations of our being on the right path; maybe even an indication we have completed a particularly steep climb. It does not mean we have arrived at a destination. Neither does it mean we can now go downhill for a while.

The Japanese use the term "kaizen" to describe small improvements, every day or week. The little things which make our work easier. Kaizen is to make the worker happier. It doesn't take a Rhodes scholar to figure out that the whole organization will benefit when the workers are happier.

We plan and hope for big, innovative improvements. I don't want to diminish the value of these upward "spikes" in productivity and quality which will come to anyone who is taking reasonable risks and is continuously improving. The problem is our way of thinking. We seem to habitually seek the revolutionary rather than the evolutionary. We often go after the huge innovational improvements, the quantum jumps -- like the advent of the assembly line or the moon landing or the microcomputer chip. We love knowing our job was big, we were bigger, and now we are done and can move on to an even larger task.

We seem to love to be toreadors who set aside responsible long-term improvement, take maximum risk, and accept the greatest challenge for the possibility of a great one-time success. It is a fatal disease.

PARTNERING OBSERVATION

by Norman Loeffler, EFLHD

BACKGROUND

An urban project on the George Washington Memorial Parkway in the Washington, D. C. area consists of deck replacement of a 3-span bridge. The traffic is extremely heavy, and we decided to replace the deck during two separate weekends, one for each direction of traffic. The implementation of this decision required extensive planning, as actions included cutting the old deck into pieces to lift it off and replacing it immediately with precast post-tensioned sections.

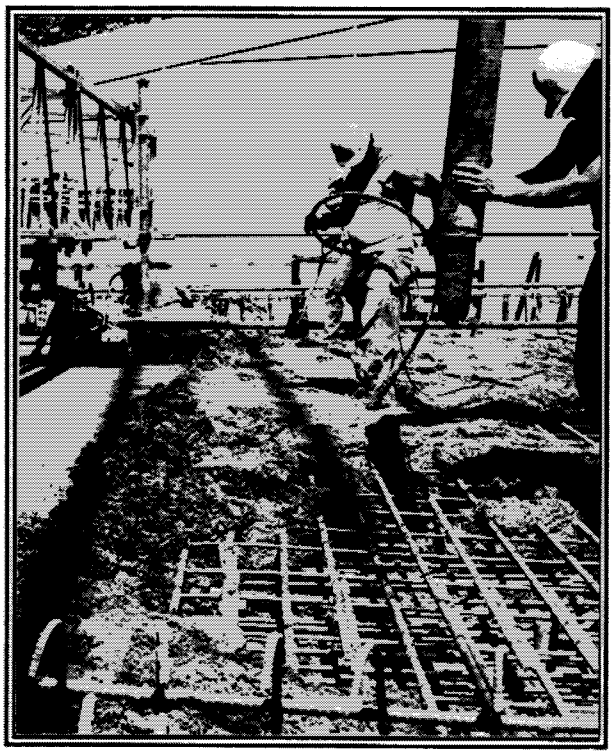
Federal Highway Administrator Tom Larson's recent three-sentence letter transmitting a copy of an article titled, **Why Big Companies Are So Tough To Change:**

June 12, 1991

This account tells an important story. It is very hard to change a big organization.

But, I've seen it happen and intend to see it happen here -- with your help!

Tom



Bridge Deck Construction

This project was designed to avoid traffic disruption to commuter traffic on weekdays.

The low bidder was very concerned about many details and even the possibility that the concept was not feasible. As a result, we agreed to do only one span of one direction during a weekend as a shakedown operation.

During the shakedown many things did not go as planned. Most were easily remedied, but as time was crucial, each minor slowdown became critical.

A major crisis did arise when the cover plate on the facia girder over a pier was accidentally cut while sawing the deck. The two facia girders, one on each side, support the entire structure from span to span. The load is transferred to the facia girders from a series of stringers and floorbeams.

The facia girder had to be repaired before the deck could be completed and opened to traffic. There was a lot of frustration and some did not know what direction to take. The Construction Operations Engineer (COE), John Higgins, and Bridge Engineer, Don Miller, had planned to spend the weekend at the bridge site until work was completed. They were concerned about the success of the technique and the critical traffic situation.

Mr. Higgins and Mr. Miller worked together with the Contractor without asking for approvals or questioning liabilities. Mr. Miller designed a new cover plate. Then orders were placed, "gophers" ran (all the way to Philly), and the repair was made.

Even though the repair was made in a timely manner, other delays prevented the scheduled opening and caused a major traffic back up during the Monday morning rush hour.

THE PROCESS

Although no formal partnering was initiated, several meetings and detailed discussions were held addressing scheduling and procedures. The Contractor was negative about the concept of doing one-half width of the whole bridge from Friday night to Monday morning using the specified process, while the Contract Administration (C.A.) staff was upbeat. Rather than taking the position of "you bid it, you build it," the C.A. staff agreed to allow the "shakedown" span and even pay for some extra costs. There was concern that if there were problems, a major commuter route could be closed for several days with terrible public reaction. The compromise for the "shakedown" span and the "cover plate" crisis certainly demonstrated the concept of partnering.

The next step in this "unofficial" partnering process is developing. The Contractor demonstrated on the second weekend that two spans could be done in such a time period; it was obvious three spans could be done as indicated in the contract if two cranes were used and crews doubled for dry packing, closure pours, and other operations.

The C.A. team wants to see the complete bridge redecked in one weekend, as required in the contract, to establish a viable rehabilitation technique. The deck panel replacement has been demonstrated as viable. However, the supporting operations have not been demonstrated, only because of the Contractor's low resource commitment. The technique itself is valid.

The Contractor still had concerns about the concept. There would be significant added labor and equipment costs in addition to the risk of not finishing Monday morning. Of course, these so called added costs are not really added costs since they are necessary to comply with the contract.

Tribute to Bob Warren

Tom Edick, Federal Lands Highway Program Administrator contributed the following quote, saying, "Here are some profound beliefs expressed by Bob Warren at his retirement after 37 years of outstanding service. It is this and other feelings like these that are in the heart and soul of each of us that cause us to believe in our cause (Mission), seek our dreams (Vision), and willingly make sacrifices (Commitment to Excellence)."

"I have always believed that Direct Federal was the heart and soul of the Agency. While others talked ..., we were developing people, implementing new technology and leading the way for others ..." - Bob Warren

SUMMARY OF ISSUES

Should the weekend concept be insisted upon to establish its viability in the Washington D.C. area and elsewhere? (This can pressure the Contractor dollar-wise and can be contrary to his opinion as to the viability of the concept. It also creates a high risk of negative public reactions if the Contractor fails.)

Should two weekends be allowed as being in everyone's best interest, including the much lower risk of negative public reaction to a closed commuter route on week days?

Should the Contractor offer significant credit to the Government for additional weekend operations as being in his best interest even though it will cost him much more in traffic control alone? Is this less than doubling crews for one weekend?

Should partnering be part of such decisions which change contractual requirements, but are subjective and impact both parties' objectives?

NICET NEWS

by Bill Whittenberger, EFLHD

The May testing cycle for the National Institute for Certification in Engineering Technologies (NICET) is underway. Twenty-one individuals are participating in the NICET testing program from EFLHD and two individuals from the Construction Inspection Contractor at Cumberland Gap, TN. I know that all of you will want to support them in this important endeavor. These are the names of those personnel: Earmon Johnson, Felix Amparano, James Martin, Robert Morrison, Mark Rommel, Charles Mann, Richard Webb, Clifford Honeycutt, David Bovone, Brent Holt, Margaret Conway, Kevin McCarthy, David Hyde, Daniel Williams, Cynthia Pope, Danny Jones, Alvie Downs, Leonard Inwood, Ralph Woodberry, Richard McDaniel, Herbert Tidwell, Sidney Taylor, and Ronald Smith.

Our next testing cycle will be around October 15th. Applications for testing should be sent to Bill Whittenberger, QA Engineer in Construction by September 1st. This allows six weeks for NICET to generate the exam. Materials about the NICET certification and testing program can also be obtained from Bill.

TQM IN ACTION AT EFLHD

by Julie Attaway, EFLHD

A word of thanks to all who participated in the **LAN Finance** venture. You have brought these rare words of praise from an outspoken skeptic. "This program is not the greatest thing since sliced bread; it's better than sliced bread." To me, aside from the economical sharing of software and printers, the LAN advantage is the sharing of readily accessible information. When that data access also allows us to eliminate some paper copy, while giving the versatility necessary to sort data as needed, the time and expense saved are sufficient LAN justification. When efficiency combines with timeliness and accuracy, and a program addresses the real needs of individual staffs, the LAN has accomplished something special. Bill John, the programmer who implemented the **LAN Finance** report, has been quick to respond to suggestions and successful in efforts to make the program easy to use. THANKS!

Mark Chatfield, Clara Conner, and a happy "customer"

WANTED; UN-USED EDDIES

by Byron Betts, EFLHD

Not planning on using your Award this year? Maybe you're resisting the extra paper work, or maybe you don't want to deal with yet another deadline, or maybe you're just surrounded by so many slouches that you can't think of anything good to say! Whatever the reason, historical research indicates that there's a 65% probability that your EDDIE Award won't be used this year.

But why worry? There's help available! Just bring your award to me, unsigned, and I'll fill it out for you. I'll find something good to say about someone; all you need to do is to review and sign! No fuss, no muss! And there's no charge for the service! Last year, as a Division, we threw away $3250 in award money by not using what we had available. So act now! See me, Byron Betts, and let's do some total quality teamwork! (Void where prohibited.)

For those who are not familiar with the EDDIE peer-to-peer award program, look at your Winter 1991 issue of FLH Quality News. -Ed.

FLH Display at the 4th Annual Federal Quality and Productivity Conference, Washington, D.C.

The "east coast" elements of Federal Lands Highway teamed up to provide what several said was the most attractive display at the 4th Annual Federal Quality and Productivity Conference. Gary Klinedinst, Eastern Federal Lands Division Engineer, not only offered the use of their display, but provided personnel and even a helping hand when we needed to pack up. Mark Chatfield, Clara Conner, Vivian Hanna, Pete Perros, and Larry Smith provide information to conference attenders. The display's theme was, Federal Lands Highway - Leading the Way to Quality in the Department of Transportation. We had the honored position of being adjacent to the display for the Office of the Secretary of Transportation.

Distinguished visitors included Jon H. Seymour, Assistant Secretary for Administration of the Office of the Secretary of Transportation, Mr. Thomas O. Edick, Federal Lands Highway Program Administrator, and

Mr. John A. Burt, Special Assistant to the Federal Aviation Administrator (see photo). Many visitors from the public sector came by to talk. We provided copies of the newly printed brochure, "Total Quality Management in Federal Lands Highway," the "Guidelines for Establishing and Operating Quality Action Teams," and copies of the newsletter. Other parts of our marketing included a mug full of hard candy and a laminating machine which allowed us to give customers a personalized luggage tag with our FLH symbol on one side.

We have had follow-up contacts by several organizations seeking more information. Among them are the Environmental Protection Agency, the Coast Guard, and the Bureau of Motor Carrier Safety. We are swiftly transitioning from our constant learning about quality to a position of providing information to others.

The Shewhart Cycle in Three Dimensions

Nearly everyone involved in quality has been introduced to the "Shewhart cycle." The simple four step process is depicted with a circle and the numbers 1 through 4 equally spaced around the perimeter. The four steps are described as:

1. PLAN - What could be the most important accomplishments of the team? What changes might be desirable? What data are available? Are new observations needed? Plan a change or a test. Decide how to use the observations.

2. DO - Carry out the change or test decided upon, preferably on a small scale.

3. CHECK - Observe the effects of the change or test.

4. ACT - Study the results. Know what we learned. Use the information to predict.

The problem? It's too simple.

Some descriptions of the concept go on to outline the rest of the concept:

5. Repeat Step 1, with knowledge accumulated.

6. Repeat Step 2, and onward.

These two added steps hint at the real world situation. With an actual problem, the circle is really not circular. It is not even oblong. It is really some misshapen spiral in time which is, at best, difficult to describe.

Can we can realistically represent the four main steps of improving a process? I believe we can and that we can do it without too much difficulty. We will need to go beyond a circle, however.

First, some background: often a team takes on a problem in the vaguest of terms. Their first task is to plan. The team may, and probably should, take several meetings to work through the Plan phase. Toward the end of their planning, they may start work on the Do phase by testing a solution on a small scale. As the Do phase winds down, the team is probably already checking some of the results. Then, as checking continues, full implementation in the Act phase may begin.

The next cycle could be an idea which started before the first cycle completed. Since the team should be working on the most critical problems first, the second and subsequent cycles will probably be less intense than the first.

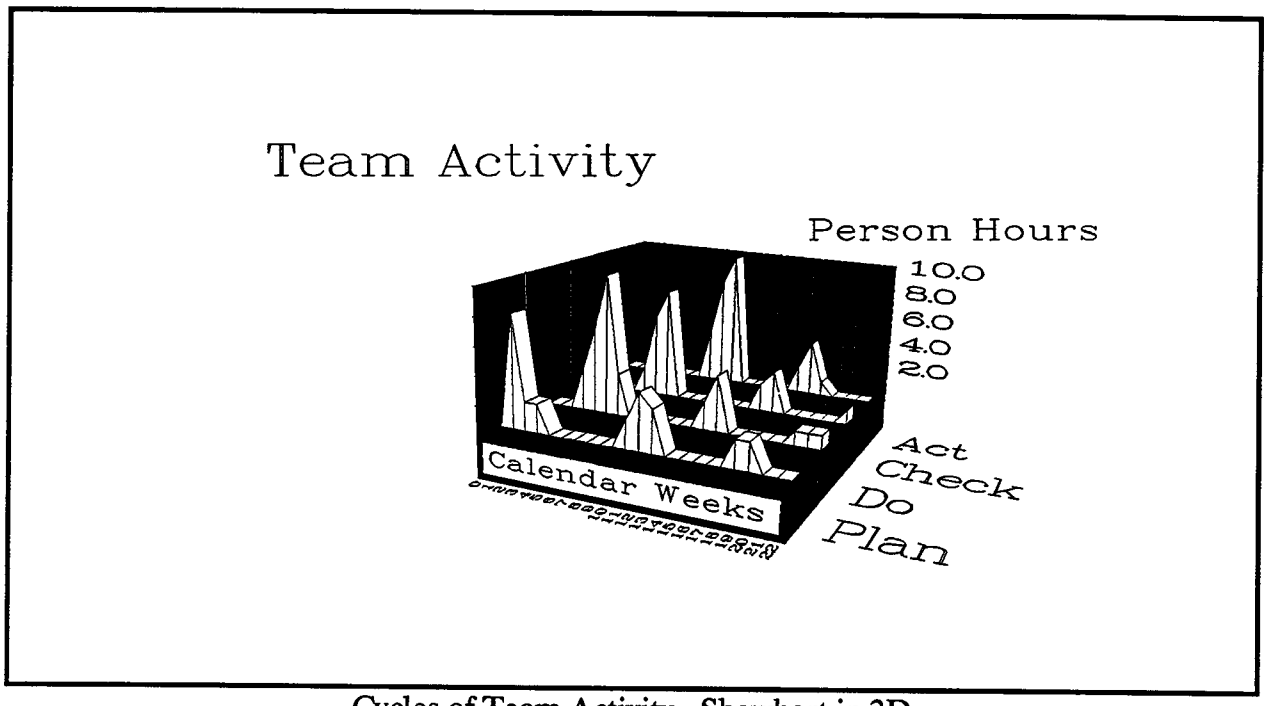
With just a little effort, a team can quite easily write down the amount of time they spend on each phase of the cycle. In this example, "Person Hours" is the number of team members multiplied by the number of hours spent on the effort. When this is shown graphically, the four cycles can be seen as they occur over the life of the team. The intensity of activity is on the vertical axis.

What is the value of all this? First, the team can see how its level of effort compares to its original plan. If, for instance, the team is spending too much time during the meetings arguing over who is responsible for work, the phases may linger on for a year with nothing ever done. This would indicate that the team is clearly off schedule and the team's sponsor should step in to assist.

Second, the balance of the phases can be seen. If a team finishes its "Plan" in a few hours and then spends several months in the "Do" phase, the team probably is not approaching the problem in the right way.

Third, as subsequent cycles are tracked, the team may realize there is little need for them to continue to meet on this problem as frequently as they had been meeting.

The bottom line is this. The Shewhart Cycle is not just a neat little pie cut in four equal pieces. Teams can show how they are progressing by regularly recording simple information on the time they spend working on the



Cycles of Team Activity - Shewhart in 3D

problem. It can be shown graphically in three dimensions. The X-axis is time - the number of calendar weeks the team is in existence. The Y-axis is Person Hours. This represents total team activity. The Z-axis is the Shewhart phase - the Plan, Do, Check, Act element. Another alternative would be to use the Z-axis to show the problem solving step which the team is working on.

Drawing the graphs would be a little tricky except for microcomputers. This graph was done using Enable's Perspective. There are many other programs which I'm sure would do a similar job. The technique allows team members and managers to see a picture of the team effort. By knowing what a team is doing, judgments can be more intelligently made about a group's progress.

We're Already Measuring

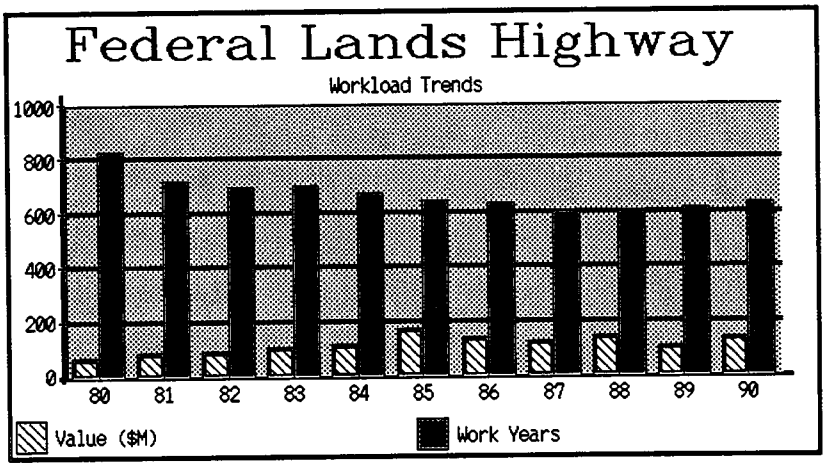
by Mark Chatfield, HFL-1

Every time I hear of a new management initiative, I wonder if its purveyors ever looked to see if people were already doing it. The emphasis on measurement is clearly an element of our top management initiative. We can legitimately ask, "Aren't we already doing that?"

It turns out we are -- at least in part. We generate numbers to represent almost everything we do. Many of the things we record are the big things. Number of projects, contract amounts, engineers' estimates, number of personnel, cost of materials, and program costs are all examples. We also turn out statistics on several distinct quality areas. We measure, for instance, pavement smoothness, contract growth, construction quality, bridge conditions, and materials properties. So, what's the problem?

Too often we make our measures, record them -- even publish them; and then we promptly move on to the next cycle, forgetting what went on before. Statistical process improvement takes time. Sufficient data must be in place to permit control limits to be established. An elementary example is your body temperature. When you don't feel well you stick a thermometer in your mouth (or elsewhere!) and measure your body temperature. You find it is 104°F (41 °C). You wouldn't know that is abnormally high unless someone had taken temperatures hundreds of times and established the statistical base. There is a lot of value in many of our historical measurements and much of our "on the shelf data. The more we know about what has transpired in the past, the more we can know if we need to do something about it.

The latest example of this is the endlessly painful Federal Lands Highway Annual Report. Over ten years ago Direct Federal decided to document our vital statistics in an annual report. We go through all sorts of



gyrations to put together reasonably accurate numbers for the report. We write narrative descriptions of what happened during the year. We print a lovely document with color photos and distribute a copy to anyone who is interested. Then, we wipe our brows and think about how we are going to do next year's report.

In one of my more rebellious moments, I decided to take a couple of days to put all 11 years of data into a gigantic spreadsheet. Now, with the flip of a macro, I can see our past flash before me on my computer screen with pie charts, bar charts, and all sorts of combinations of data I never dreamed of before. Some of the charts are shown here. I need more time to do even a half-way job of analyzing it, but that isn't the point of this article.

The point is this. We are already doing a lot of measuring. We are not analyzing what we have and we are not measuring the "little" things we do every day which critically affect our work and its quality. Let's take credit for having the foresight to measure and record what we have. Let's then go on to improve by identifying what we should add to our measurements and by statistically analyzing the results. This combination of actions will keep before us our true priorities.

Notes from a Symposium on Partnering

by Glen Bedell, WFL
Oregon State University - April 26, 1991

Colonel Cowan who is in charge of the Portland District of the Corps of Engineers spoke first. [*Col. Cowan is now Director, Arizona Department of Transportation - Ed.*] He mentioned why the Corps thought they had to do something. The Corps had the huge backlog of claims and large contract overruns which he lumped the claims and overruns together as "contingent liability". He said Partnering was something that could be done without major legislative or procedural changes involving outside authorities. He described Partnering as something that can be done working within our circle of influence.

He described some insights he has after 3 years. During this time they have finished several large projects. He said generally it has been a good success. Partnering has reduced cost growth by 80 percent. (He also said later that cost growth does not include changed conditions.) He said they have eliminated time growth. They have no new litigation after 3 years. Colonel Cowan defined

quality as conformance with requirements, not necessarily conformance with the specifications.

He said, "the more you try to be specific with specifications, the more ambiguity you produce." I have observed over time that when you try to cover any eventuality with detailed procedures and specifications, you are continually setting traps for yourself and playing "catch-up". The Colonel also said that there is no eleventh commandment that all "hard money contracts" must be adversarial. Their procedure of sequestering the Project Engineer and the Contractor's Superintendent for a week is a first step in their Partnering process. During that time, these two people get to know each other and plan the general Partnering meeting; something like we've done except with a team-building training session to kick things off. They have a workshop, which is what their original Partnering meeting is, about every 6 months.

Richard A. (Dick) Lewis, of Granite Construction Company said the alternatives to Partnering are not satisfactory, so less than 100 percent success of Partnering is acceptable. There will be various degrees of success. The entire idea should not be scrapped, even if there are partial or total failures. He said it is important for all to understand that Partnering is not just a matter of rhetoric -- you can't fake it. Partnering is largely a matter of concentrating on issues rather than viewpoints. Partnering is the first step and then ADR (Alternate Disputes Resolution) is the second stage. (I assume he meant that it's a second stage when, hopefully seldom, it's needed.)

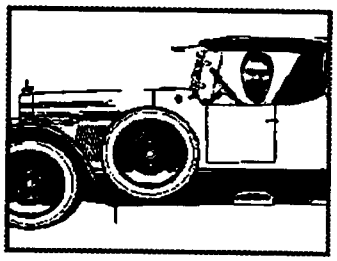
We learned that WSDOT has a consultant-led training session in conflict management. (We are obtaining some additional information about it.) ODOT is teaching team building skills to all their people as part of their: "Constant Improvement". I think from a report we got earlier from Patrick Wlaschin and Jim Hall that Constant Improvement equates pretty well to TQM.

I understood that the Corps includes designers and their operations people in the implementing workshops for Partnering. They listed some problems: reluctance to escalate, lack of attention from the top down, erroneous conceptions, and failure to mutually understand "agreements".

Which issues are the most difficult in the Partnering arrangements thus far? I noted two: (1) subcontractor incorporation, and (2) lower level and production employees not being cognizant of the "Big Picture." Colonel Cowan agreed that the main problem they've had is orienting all the other players -- those not signatory to the agreement, who were not participants in the initial workshops.

The following articles are by Patrick Wlaschin, WFL:

TURNING THE CORNER



My teenage son, Aaron, and I were driving to the grocery store last week when he asked me this question: "Dad, how do you remember all the things you are supposed to do when you drive a car?" I was thinking, (meat, milk, cheese & bread, or was it milk, peas, bread & meat?), to my son I said, "What things?"

To this he replied, "You know, (kids always say this), you turned on your signal, pressed in the clutch, shifted from 3rd gear to 2nd gear, released the clutch, changed radio stations, applied the brake, checked your rear view mirror, pressed in the clutch again, applied the brake again, changed the radio station again, shifted from 2nd gear to 1st gear, turned the steering wheel, released the brake, released the clutch, pressed the gas pedal, pressed the clutch while stepping off of the gas pedal, shifted from 1st gear to 2nd gear, released the clutch, pressed the gas pedal again, changed radio stations again, pressed the clutch again while releasing the gas pedal, shifted from 2nd gear to 3rd gear, looked in the rear view mirror, released the clutch and applied the gas again, and turned off the radio. How do you remember to do all that?"

"That's a good question," I responded, groping for an answer. The fact is that I hadn't remembered them, and worst yet, I felt a twinge of uneasiness concerning the next corner I was going to have to turn. What if I forgot to do one of those things? "I don't remember them," I admitted. "Those steps become natural after a while, you don't even think about what to do next."

I got a glimpse of his anxiety. He is rapidly approaching the driving age and is honestly concerned about memorizing the multiple steps required in turning a corner; all this -- mixed with geometry, biology, dating, and parents. I could understand his fear.

"Don't worry, (Dads always say this), we will go to an open parking lot and practice many, many times before you have to turn corners in traffic."

The same is true for us in implementing Total Quality Management in FLH. Instead of driving a car through streets and around corners to the grocery store, we are implementing TQM through leadership techniques, team building, and problem-solving processes to a destination called Quality. We are still in the teenage stage. The task looks difficult. The steps are numerous and it is difficult to remember them all.

The past year we formed teams to redesign forms, to recycle our waste, and to improve our services. These projects indicate that we are still driving in that open parking lot. We are still practicing our turns. The major tests, the big projects to reduce 4th quarter awards, engineering costs, and contract growth, await our efforts. These are the freeways waiting to test our skills.

As I reflect on my driving motions, I don't seriously think about them. They have become a part of me, almost as unconscious as breathing. I hope that during this next fiscal year we practice our driving and become proficient to the point where we don't concentrate on the step-by-step approach of implementing quality. These TQM steps should become natural for us. We can then be free of the terror of "What comes after brain storming!", and "How do we use force field?". We can then focus on the processes which keep us from our destination of quality products and services.

MARKETING AT THE NEWBERRY NATIONAL VOLCANIC MONUMENT

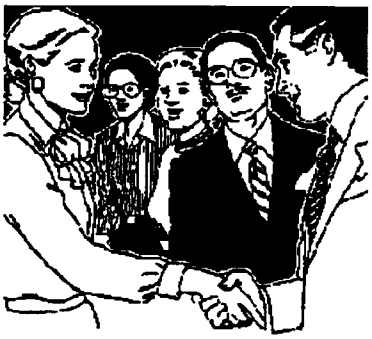
One of Western Federal Lands Highway's current construction projects connects the outside world to our nation's newest National Monument. The Newberry National Volcanic Monument encompasses 56,000 acres in the Deschutes National Forest in central Oregon. The monument stretches from the Newberry Crater, near the town of La Pine, north 28 miles to Bend. This area and the Lava Lands Visitors Center were dedicated in a ceremony on Sunday, June 30th.

The dedication commenced with an official ribbon cutting ceremony. A pictorial commerative stamp was issued. Live music was provided throughout the day. Scenic tours, a barbecue, dessert wagon, beer garden, and souvenir stands selling T-shirts, hats and bumper stickers rounded out the activities.

FLH participated in the gala festivities by providing an information booth. We prepared brochures and a display describing our agency and our construction project. TQM brochures were also distributed. The booth was staffed by our Construction Operations Engineer, Gene Stager, the Project Engineer Ken Welborn, and his staff - Tom Sutton, Michael Hicks, Bill Howard and Robert Stevens.

ELTE Inc. is our contractor on this project. A partnering agreement exists between ELTE and FLH. Congratulations to both ELTE and Ken for the good publicity they are generating.

BEING RECOGNIZED AS THE BEST...



Watch Out!! It's Spreading!

As the FHWA 2000 Work Group continues its progress toward shaping the future of our agency, they were bound to bump into FLH and our TQM efforts. This occurred during the months of May and June.

The head of the FHWA 2000 Work Group, Regional Administrator, Pat Clark, observed the Team Building and Leadership training the Quality Coordination Team has been providing for FLH managers and supervisors. Region 10 sent a team to Vancouver's training session. The reports from "Team 10" (as this team came to be known) concerning our training, were very positive. Mr. Clark realized that the team approach to solving systemic problems was an item he wanted to encourage in his Region. As a result, Mr. Clark requested Team Building training from FLH for all of Region 10's employees.

We shortened the scope of the original training to a two-day class. Topics covered during the training included: team building, problem solving techniques, communication methods, roles of team members, and leadership styles. We scheduled classes, meeting rooms arranged, and flights. The training encompassed four

Divisions and one Region office in a whirlwind three-week tour during the month of May.

FLH's objectives in performing this training service were: (a) To provide team building and facilitator training from a Federal Highway perspective, (b) To further strengthen the bond between the Federal Aid Divisions and Federal Lands, and (c) To contribute to our vision of "Being recognized as best highway engineering organization ..." by explaining our quality techniques and talking about our team work experiences.

Mr. Clark's objectives in performing this training were: (a) To train these offices so they would be able to use the team work approach to solve at least one systemic problem during this fiscal year, (b) To prepare Region 10 employees to meet the challenges presented by the FHWA 2000 Work Group, and (c) To strengthen the team spirit that exists in the Region 10 offices.

Marili Green (Region 10), Clara Conner (EFLHD), and Patrick Wlaschin (WFLHD) conducted this training. We measure all our formal training sessions and the participants rated the instructors as "excellent."

In an interesting sidelight of the training, almost every employee who attended these sessions was in favor of reimplementing flextime. They seemed eager to address our agency's considerations surrounding this issue. Perhaps it is time to reexamine it.

QPMA CONFERENCE, CHICAGO

By Peter Perros, FLHO Executive Officer

Back in April, I had the enjoyable assignment (i.e., no one else on the Quality Coordination Team was available!) of attending the Quality and Productivity Management Association's (QPMA) Spring Conference in Chicago. The conference, titled "Assembling and Updating Your TQM Toolkit," was the third in a series of five semi-annual meetings designed to take participants through the TQM implementation cycle, from the essentials to the bottom line. It turned out to be a concentrated and valuable learning experience.

Some background on QPMA, which FLH joined as a sponsor last year. It is a non-profit association, in existence for a dozen years, that exists primarily to provide networking opportunities for its members in more than 500 public, private, and educational organizations. In addition to the national organization and its twice-yearly conferences, QPMA functions at the local level in the form of eleven councils (with more being formed) that meet more frequently to allow members to exchange ideas and experiences. The QPMA bills itself as "the premier network of individuals who are responsible for organization-wide improvement of quality, productivity, and customer satisfaction." This conference confirmed that immodest claim.

Outside, the blustery Chicago spring felt like a Washington winter, but inside, the conference was a hotbed of ideas and enthusiasm for the twin theologies of continuous improvement and customer satisfaction. The 355 conference participants networked themselves into a frenzy during breaks, meals, and evening activities. They spent most of their time, however, attending a formal program of expert presentations, including six by Baldrige Award winners.

Space and time restrictions prevent a distillation here of 31 pages of handwritten notes; that will have to be done separately. Instead, what follows is just some of the major points and recurring themes that stuck in my mind. If a few are beginning to sound familiar to FLH employees, it's no coincidence; it was exciting to hear them validated by representatives of truly world-class organizations.

- Measure
  - Everything is measurable. Measure everything; "You can't manage what you can't measure."
  - Update your measures frequently and make them available to all employees so they know the organization's status.
- Train
  - Training needs to be continuous in quality management, technical skills, and interpersonal skills.

- Training should start with top management, then cascade down through the organization (this was perhaps the single most common tactic cited by presenters).

● Empower

- If your goal is complete customer satisfaction, then your employees must be empowered to do anything necessary to achieve it.

● Benchmark

- This can be a powerful tool to overcome the limitations of gradual "continuous" improvement, which sometimes isn't good enough.
- Benchmark each of your processes--maintenance as well as task--separately against whoever is best at that process, even if they're in a completely different line of work.

● Teams and Teamwork

- Sometimes, it can be a mistake to mandate teams.
- Cross-functional teams are valuable in breaking down barriers between different parts of the organization; they can also be emancipating to their members, who can go back to their own organizations to question its orthodoxy.

● Customer Focus

- A powerful means of sharpening customer focus is to have all managers (why not rank-and-file employees, too?) site-visit all customers.

● Finally, some observations from one session that was too fascinating not to summarize here: "Workplace 2000: The Revolution Reshaping Business."

Continued on Page 16.

FLH Quality News - Customer Survey

Since the theme of this issue is "Measurement," we take this opportunity to ask you to help us measure the value and effectiveness of this newsletter. Please fill out this self-addressed form, cut it out, and drop it in the mail box - no stamp is required. The results will be published in a future issue. Suggestions will be used to improve the publication.

Cut along line

My office location: _____

Job title: _____

Date: _____

I receive my own copy of the newsletter. __ Yes __ No

On a scale of 1 to 6, with 1 representing the least and 6 representing the most:

The FLH Quality News is:

1. Useful. ____
2. Interesting. ____
3. Challenging. ____
4. Easy to understand. ____
5. Well written. ____
6. Well organized. ____
7. Illustrated properly. ____
8. Concise. ____
9. Imaginative. ____
10. Neat. ____
11. Attractive. ____
12. Accurate. ____
13. Timely. ____
14. Educational. ____
15. Fun to read. ____

The FLH Quality News could be improved by:

Cut along line

- In the past, the U.S. could afford to be wasteful; no longer.
- A now-familiar idea put in a compelling way: "We have squandered an insurmountable lead in areas where we were the original innovators."
- Customers are increasingly looking for either the best or the "cheapest of the good enough;" the cheapest is getting better, and the best is getting less expensive.
- The "Common Fate Culture," i.e., workplace as family, is arriving.
- The greatest value in the new workplace: Flexibility, i.e., some knowledge in many areas is more valuable than narrow, in-depth knowledge.
- Always look for the new opportunity; entrepreneurs do this outside the organization, "intrapreneurs" do it inside.
- There will be less management control, more employee self-control; managers will become "enablers."
- The leaner, flatter organization we've all heard about will indeed arrive; layers of management lost in recent years will never return.
- Education and Training:
  * will be continuous and emphasized, because more responsibility is turned over to workers,
  * will need a mix of "hard" skills (e.g., computer literacy, SPC) and "soft" skills (e.g., negotiation skills, reflective listening),
  * in 10 years, 1 to 2 years of college will be the minimum requirement for almost any job, and the functional illiterate will be unemployable.
- Workers will become mentally and emotionally closer to their customers.

These are just a few of the highlights of a worthwhile conference sponsored by a worthwhile organization. The staff of QPMA likes to promise that its members are "never more than three phone calls away from connecting with an expert" in any area of quality management. That makes QPMA a resource we in FLH should use to fullest advantage.

Customer Survey

Cut it out. Fill it out. Send it in!

U..S. Department of Transportation
Federal Highway Administration

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FLH Quality News

400 7th Street, S.W. HFL-1

Washington, D.C. 20590

Volume 2 Issue 4 Federal Lands Highway Fall 1991

FLH QUALITY NEWS

U.S. Department of Transportation
Federal Highway Administration

400 7th St., S.W. *Washington, D.C. 20590* *(202)-366-9492*

LEADERSHIP

Leadership is *the* essential ingredient as an organization initiates and develops its quality culture. Michael Sonduck, president of Total Quality Systems Co. in Massachusetts says, "Things become fads when management doesn't practice them, when it delegates with an it-doesn't-pertain-to-me attitude."

Leadership involves direction, guidance, instruction, and example. Before teams of employees can deliver consistent improvements, top management teams should show how they are improving processes.

Bill Dickenson, Editor-in-Chief of the Total Employee Involvement Newsletter writes, "'I have a dream,' the leader in you says. 'I have a vision of an organization in which continuous quality improvement is the name of the game.' Did you remember to show people clearly what you mean? Have you left room for them to put their own stamp on the vision? Do your words and actions inspire confidence, trust, and faith? Do you walk the talk? Can you identify your internal customers? Do you serve them well? How consistently and thoroughly do you share vital information? Do you have focused improvement targets that are ambitious but realistic?'"

In this issue of *FLH Quality News*, you will find several articles on the subject of leadership. Each of us is a leader. Our title or job description may not say it, but each of us is being watched by others. We are an example to others and by example lead others to emulate us. If you are a top executive, you lead more people with make-it or break-it impact.

FLH Quality Policy

Vancouver, Washington, September 11, 1991

The Federal Lands Highway organization now has an official Quality Policy. The six Executive Quality Council (EQC) members each signed the policy statement at their September meeting. What is our policy on quality?

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Publication No. FHWA-FLP 92-002

FLH QUALITY NEWS
Volume II, Issue 4
Fall 1991
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The FLH QUALITY NEWS is an official publication of the Federal Lands Highway Office, Federal Highway Administration, U.S. Department of Transportation. It is published several times a year for educational purposes to promote quality principles among FLH's and other organization's employees, managers, and supervisors.

Other topics may include information about programs, policies, projects, and administration. Contents of this publication may be used without permission. However, courtesy credit is appreciated.

Mention of private firms in no way constitutes an endorsement or recommendation. Communications should be submitted to: Editor, FLH QUALITY NEWS, Federal Lands Highway Office (HFL-1), Federal Highway Administration, 400 7th Street, S.W., Washington, D.C. 20590.

"The Federal lands Highway organization is committed to excellence in everything we do through continuous improvement, employee involvement, and customer satisfaction."

We are dedicated to the principles of Total Quality Management as explained further:

Customer Focus

Meeting customer requirements means quality in Federal Lands Highway. We explore and develop relationships with partners, customers, and suppliers, emphasizing problem prevention. Every employee identifies and develops professional relationships with their partners and customers and works directly with them in order to anticipate their requirements.

Employee Involvement

We foster a culture where every employee has the opportunity for self improvement and to enhance our products, and services. We encourage employees to concentrate on process improvements and take full advantage of spot improvements by widely sharing ideas. We increasingly empower our teams and employees through coaching, training, and appropriate delegation. We accept the risks that accompany team and employee empowerment and responsibility.

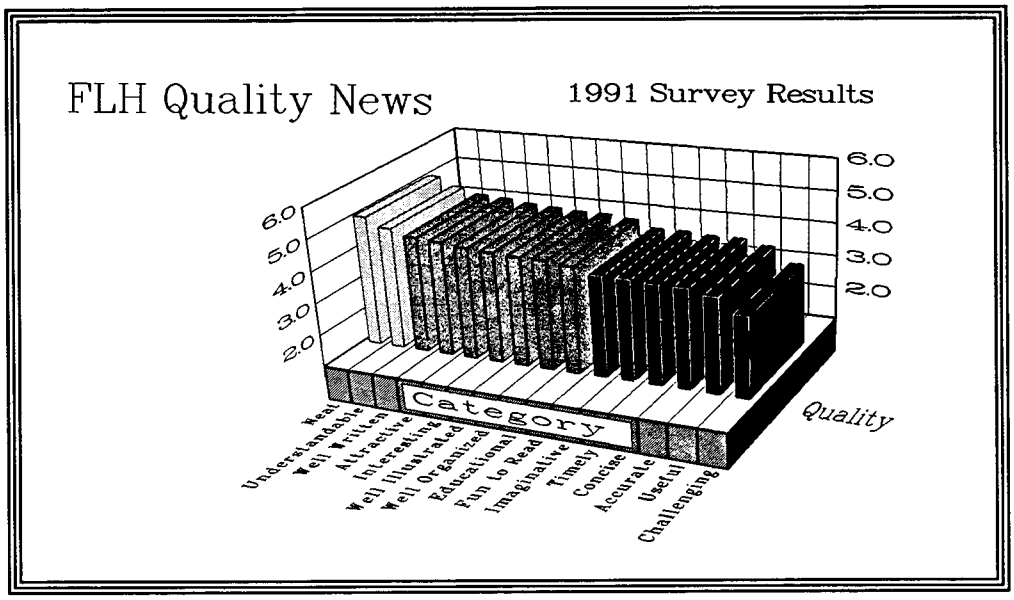
Continuous Improvement

We work to improve endlessly the quality of our products and services. In its most general sense, this means getting better at what we do -- forever. We act to eliminate barriers and provide the resources (including time, environment, and support) necessary to incorporate quality into our way of doing things and in all we produce. We reduce variation in our work and know the costs and benefits of quality. We expect everyone to measure the quality of what they do in order to raise their own job satisfaction, improve overall performance, and increasingly please our internal and external customers.

The EQC also documented the reasons we need a policy on quality:

- Reinforce what top management wants.
- Establish a management commitment to the organization.
- Communicate with new and existing employees.
- Communicate with clients/customers.
- Provide a framework for decision making.
- Help set goals and priorities.
- Establish an overriding value for the organization.
- Set the organizational direction.
- Resolve conflicts and conflicting objectives.

FLH QUALITY NEWS SURVEY RESULTS



The last issue of FLH Quality News was dedicated to the topic of measurement. We included a mail-in survey form on the last page of the newsletter. Part of the reason for the survey was to demonstrate by example one way of measuring. Another reason was to improve the newsletter by knowing what readers think.

Joe Tunner, in his book, "A Quality Technology Primer for Managers," says the survey we conducted was a "haphazard" survey. That is, the customer chose to be sampled. The main problem associated with this type of survey, Tunner says, is that people who respond usually have strong negative feelings. This is particularly interesting because our results were very positive. In this case a "haphazard" survey may be the best way to start because it is virtually effortless. Follow-up surveys should be more formal. They should be thoroughly planned, more statistically significant, and more rigorously conducted and analyzed. For starters, however, I think we can make several improvements based on what we have.

The help of those who responded is really appreciated. The graph shows the categories we need to concentrate on: Challenging - we will attempt to provide ideas for people to implement and concepts which will help readers to recognize a need to improve. Useful - we will work to give practical information which employees can use in their work. Accurate - we will check sources and content to make sure the information we present is correct. Concise - we will make articles shorter and more to the point. Timely - we will encourage rapid circulation of the newsletter and print articles which are as current as practicable. Imaginative - we will use creative ways to present information.

Narrative comments:

Constructive criticism:

Better organization. It just seems to ramble on.

Need more success stories in-house.

The newsletter is fine - some of the articles are mediocre (almost forced).

Could be improved by not making it so long.

Focus more on what QATs are doing.

Seems to be another orientation for TQM.

Articles are too long.

Felt like it was preaching.

Tell what is going on in other teams.

Not for the working people.

Put in to newsletter that we applied for the QIP.

Other:

It is ridiculous and costly (taxpayers' money) to distribute to EVERY employee; it isn't worth reading anyway!! - SUGGEST YOU DISCONTINUE ISSUING.

Compliments:

A worthwhile effort!

An excellent publication. Congratulations on getting so many people involved as authors. - Can I get on your mailing list?

First class publication.

The longest comment came from Federal Highway Administration's, Director, Office of Management Systems:

"I was getting ready to send you a completed survey form from the latest issue of **FLH Quality News**; however, I decided to provide a more personal response.

As the agency TQM coordinator, I look forward to each issue of your newsletter. I read them from cover to cover and have been highly impressed with the content and quality of the articles. TQM obviously has become an integral part of the Federal Lands Highway Program; employee involvement and enthusiasm for continuous improvement are clearly evident in the articles.

You and your staff are to be commended for a first class publication. By the way, my scores on the survey were all '6 plus.'"

Mike Vecchietti.

Articles from Central

by Charmaine Farrar

DEPLOYMENT FLOW CHARTING

The Multi-Branch Quality Action Support Team (MBQAST) recently embarked on a new project -- making the travel arrangement process more efficient. They are using the Deployment Flow Chart developed by Myron Tribus, Ph.D, to analyze the process. You were introduced to this tool by Joe Tunner if you have attended one of his classes on statistical process control."

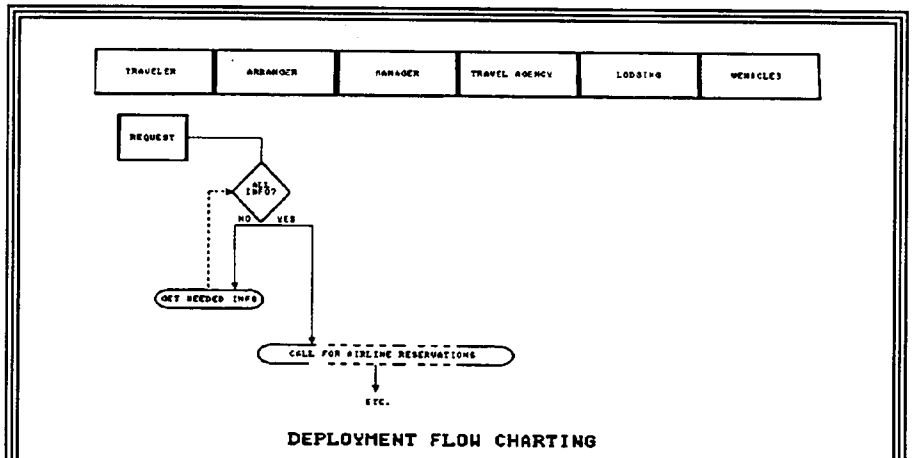
The Deployment Flow chart is similar to the standard flow chart except that a "people coordinate" is placed across the top of the chart. Symbols are placed under the particular person or group to indicate a task to be performed by that person or group. The positions of the people on the coordinate are placed In order of convenience in arranging the chart rather than by importance. The MBQAST team used "traveler", "arranger", "manager", "travel agency", "lodging" and "vehicles" as their "people coordinates."

Various symbols are used to designate different tasks. An elongated oval (i.e. rectangle with rounded ends) may be placed under the individuals or groups attending a meeting. If there is an individual or group omitted from the meeting, a dotted line is used on the symbol to designate their omission, A diamond symbolizes a decision. Dotted lines drawn between symbols are used to represent adverse paths, such as when a decision causes rework or delays. A box represents a task and Hexagon a "standardized" task. A long, detailed task may be shown on another chart and designated as a box, with a shadow on the main chart.

Teams may obtain valuable information about the processes they are analyzing by creating a Deployment Flow Chart. Horizontal lines between symbols designate customer-supplier relationships. Dotted lines help to identify locations within the process that need improvement. In addition, dotted lines within meeting symbols may indicate an omission of a person or group that should have been involved. Many paths between the same symbols may signify unnecessary repetition or what computer programmers call a "loop."

So what did the members of the MBQAST gain from developing a Deployment Flow Chart of the travel arrangement process? They now:

- have a better "perspective" of the travel arrangement process.
- know how to eliminate "backtracking" by making sure they have all the necessary initial information at the start of the travel arrangement.



DEPLOYMENT FLOW CHARTING

- realize that travel should be authorized at the beginning of the process and not at the end when all the work has been done.
- have good supporting information for their presentations to their sponsor.
- understand how to make flow charts of work processes.

The team intends to make another flow chart of how the process should be executed. Then they will be able to compare the two charts to identify locations for improvements in the process. In conclusion, a team must understand the process before it can improve the process.

The members of the CFLHD MBQAST are: Teresa Oray, Jane McClaugherty, Linda Sullivan, LaVica Andre, Sandy Uffman, Kate Cornwall, Brenda Povsha, Penny Lale (who is out on extended leave), and Darrell Harding (facilitator).

> *"A team must understand the process before it can improve the process."*

BENEFITS

One of the greatest rewards of the TQM process are the benefits the organization receives from the implementation of a project generated by a Quality Action Team (QAT). Our Administration ("A") team has worked several months to obtain the best solution to the problems with the quarterly order office supply. The best solution the team has developed is to provide a store for customers to pick up supplies when they need them.

The benefits of a perceived improvement are intangible until a team makes measurements. Once the measurements indicate there is an improvement, the benefits are considered tangible. The team perceives the following benefits will be derived from changing the office supply order system:

- Improved customer satisfaction -- the new system will be more convenient and allow for a more timely receipt of supplies.

- Elimination of the duplication of work -- currently, the procurement staff duplicates what the ordering office is already doing by retyping all the ordered items.

- Improvement in the efficiency of word processing -- with the old system, depot personnel were required to sort and then deliver shipments to individual customers. The new system will involve receiving the supplies as one bulk shipment and then stocking the shelves in one location.

- Elimination of paperwork -- the ordering offices will no longer be required to fill out requisitions.

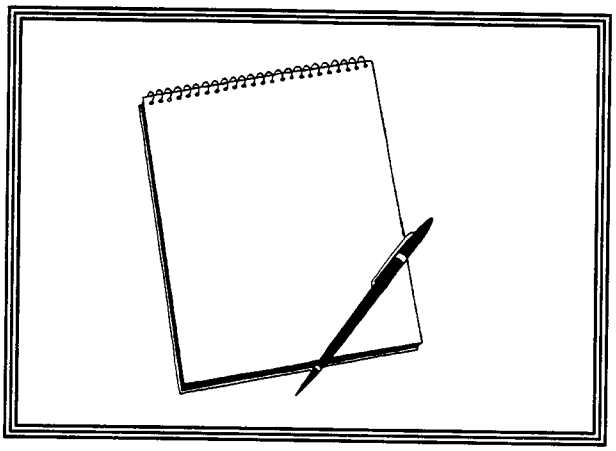
- Reduction in the stockpiling of office supplies -- the old system caused offices to stockpile supplies because they could only order them quarterly. The new system will enable offices to "shop" for the supplies they need weekly.

In addition to helping the internal offices order supplies, the new system will especially help the field personnel. They will be able to take the supplies with them to a project instead of waiting for the supplies to arrive.

The "office supply" store is planned to open in mid-November. However, the tangible benefits of the new system will be unknown until the offices have depleted their stockpiles, in approximately six months, a customer survey will be distributed to determine the effectiveness of the new system.

The members of the CFLHD "A" team are: Brad Hammond, Anne Hinshaw, Peggy Hutchinson, Fred Krok, Garry May, Judy Tancreti, Phil Whitener, Kay Hymas (Facilitator), and Charmaine Farrar (Part Time Facilitator).

* * *



Conference Notes

Charmaine snuck into two sessions at the Regional Federal Quality Conference in Dallas. Here are some of her notes:

Top Management: What Does It Take?

- Top management commitment includes: making decisions, creating a vision; enthusiasm, dedicating resources, and committing one's time.
- Dr. Deming indicates time spent by managers should be about 60% on quality and 40% on fire fighting and administration.
- You don't fix problems, you improve processes (look at the process rather than at problems).
- You are going to get worse before you get better.
- Staff meetings should begin with quality issues and be 50% dedicated to quality.
- Run a video on management change at every staff meeting then have a discussion and decide on an action plan.
- The most difficult people to get on board are the first line supervisors because they view TQM as a threat.
- Training managers is a continual process.
- In obtaining a facilitator say, "I want the best person you have, not just a person that is available."
- Pitfalls of TQM include: 1) lack of real commitment; 2) "cowboy approach" - we are good already so we can just ride off into the sunset; 3) impatience - pushing too hard; 4) not pushing hard enough; 5) lack of training; 6) problems vs. process; 7) old paradigms; 8) not understanding - perceived as a threat.

Measuring: Where are we?

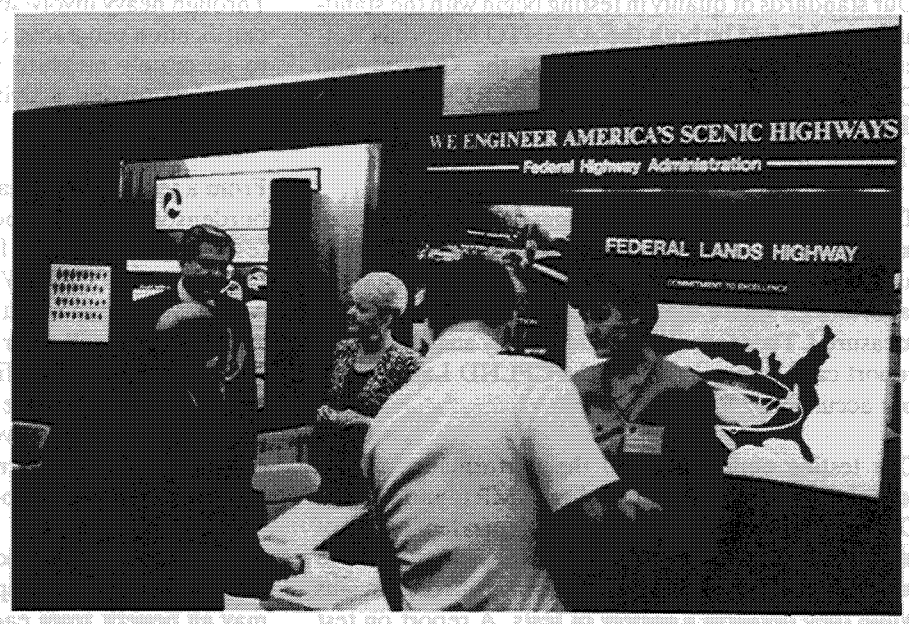
- Decisions should be made based on fact (measurement).
- Control chart your golfing or bowling.
- To understand what you are doing you need to measure.
- Measure what you are going to control before you look at what to improve.
- Ask internal customers what to improve.
- Don't work harder, work smarter.
- Look for repeats and inspection points in the flow chart.
- We need to award people that sit on teams and improve processes.
- Pareto charts are better than pie charts - a pie chart is too finite.

Recent Quality Related Activities in FLH

Secretary's Annual Award for Quality - We are expecting to hear soon if FLH has been selected for this first-year award.

FLH Marketing Plan - The FHWA's Office of Technology Applications recently provided comments on our draft Marketing Plan. Upon finalization, this plan will provide guidance on how to see if a new technology or other feature meets customer needs. The plan also presents techniques to make sure those who may be

interested have the opportunity to learn about better ways to do their work.



Wes Mendenhall, Vivian Hanna, Charmaine Farrar in Dallas

FHWA 2000 - The "cascading" effort for FHWA's Vision, Mission, Values, and Goals (VMVG) has been completed in FLH. In its September meeting, the Executive Quality Council confirmed compatibility between our Vision, Mission, and Guiding Principles statements with those of FHWA. Our unit operating plan for implementing Total Quality Management is one of several goals which will ultimately be our Strategic Business Plan. Under this goal, we have fourteen objectives. Each of the fourteen objectives will have action items necessary for their accomplishment. Now that the FLH Quality Policy is adopted, we are working to package the entire strategy for implementing TQM.

QPMA Sponsorship - Benefits of belonging to the Quality and Productivity Management Association are difficult to quantify. QPMA is made up of the premier quality organizations in private and public industry. Our membership gives us access to a vast array of resources. If you see a need for more information, or if you want to benchmark a process, see your Quality Coordinator for a contact.

The 10 Wastes - The most recent benefit from our QPMA sponsorship is a process to reduce waste. One of the basic elements of TQM is making small improvements to allow our work to be "smarter." Baxter Healthcare's Vice President, Alex Kemp developed a way to permit each employee to know what waste really means and how to eliminate it. The way it is done is a simple presentation by the unit supervisor to employees. The method is set up for ten 15-minute meetings, each with an opportunity for employees to think about their own work and how they can make their job more effortless. Your Quality Coordinators have been provided packages, courtesy of Mr. Kemp through our networking with QPMA co-sponsors. Division Quality Councils will be considering implementation plans.

Dallas Federal Quality Conference - Charmaine Farrar, Vivian Hanna, and Mark Chatfield recently shared information on the FLH efforts in TQM. The event was the Regional Federal Quality Conference in Dallas on September 3-5. The display was provided by the Eastern Division. We had about 400 visitors to our booth and handed out copies of the *FLH Quality News*, our "TQM in FLH" brochure, and copies of our *Guidelines for Establishing and Operating Quality Action Teams*. Representatives from each Division of FHWA's Region 6 visited our booth as did Regional Administrator Wes Mendenhall and Conference Coordinator Sheila Gibson (also from Region 6, FHWA).

"QUALITY MEASUREMENTS IN THE MATERIALS LABORATORY

by Darrell Harding

How can you define quality? It's simple--you can define quality by measuring it! The last issue of *FLH Quality News* made it clear -- measurement is the key to quality.

We, in the CFLHD Laboratory know what quality is because we measure it. We define standards in testing procedures, in the equipment we use, and in the performance of our technicians.

Our standards of quality in testing begin with the standards established by both the AASHTO Materials Reference Laboratory (AMRL) and the Cement and Concrete Reference Laboratory (CCRL), located at the National Institute of Standards and Technology (Bureau of Standards).

They send samples of soils, aggregates, asphalt cements, paints, cements, pozzolans, asphalt mixtures and concrete 15 times a year to participating laboratories where the accuracy of the test results are measured. These results are statistically analyzed and a report card is then issued to the CFLHD Lab grading our accuracy.

Our testing equipment and the performance of our technicians are also evaluated by AMRL and CCRL. During 18 month intervals three independent teams of inspectors from AMRL and CCRL visit the lab to inspect equipment and actually observe our technicians while they perform a variety of tests. A report on test equipment and procedural accuracy is sent to the head of the lab. From this, a determination of training and equipment needs can be made.

The CFLHD Lab maintains active membership, along with 45 other asphalt test laboratories, in the Western Cooperative Test Group (WCTG). We receive samples from various Western U.S. refineries. After we perform the WCTQ indicated tests, we forward the results to WCTG for statistical analyses.

The returned summary is reviewed for any aberrations which may need to be corrected.

The lab is also involved in a similar program for concrete testing. The Colorado Ready Mix Concrete Association (CRMCA) coordinates the testing of concrete with approximately 30 Colorado testing laboratories.

The CFLHD Lab establishes quality in performance by being heavily involved with the Strategic Highway Research Program (SHRP) in determining the reproducibility of resilient modules for asphalt concrete and soils, concrete compressive strength, split tensile, and Poisson's ratio.

Individual quality performance for technicians is measured by the National Institute for Certification of Engineering Technicians (NICET) and the American Concrete Institute (ACI), eighty-eight percent of the lab's technicians have attained certification through NICET and 50% through ACI.

Through heavy involvement in a number of testing and certification programs, the CFLHD Lab has been able to accurately measure the quality (accuracy) of our materials testing activities, our equipment and our technicians.

From a testing technician's perspective, it might seem burdensome for independent inspectors to observe testing practices and to frequently receive report cards from AMRL, CCRL, WCTG and CRMCA on statistically analyzed test results. I know, however, of no other approach that will assure our test results are accurate. This is our way of defining quality and maintaining those standards. But, we realize that quality is dynamic. As new methods are developed, new standards must be set. As we meet our current standards, new goals must be established. It is an ongoing process.

Now that you understand how Federal Lands Highways measures quality, perhaps you can help us improve. We may all benefit from each others' experiences. So tell us, "HOW DO YOU DO IT?"

How is quality measured in other areas such as Construction, Personnel, Design, Finance, Bridge, Procurement, etc? We would surely be interested in fresh ideas. Take some time and drop Mark Chatfield a line on your approach.

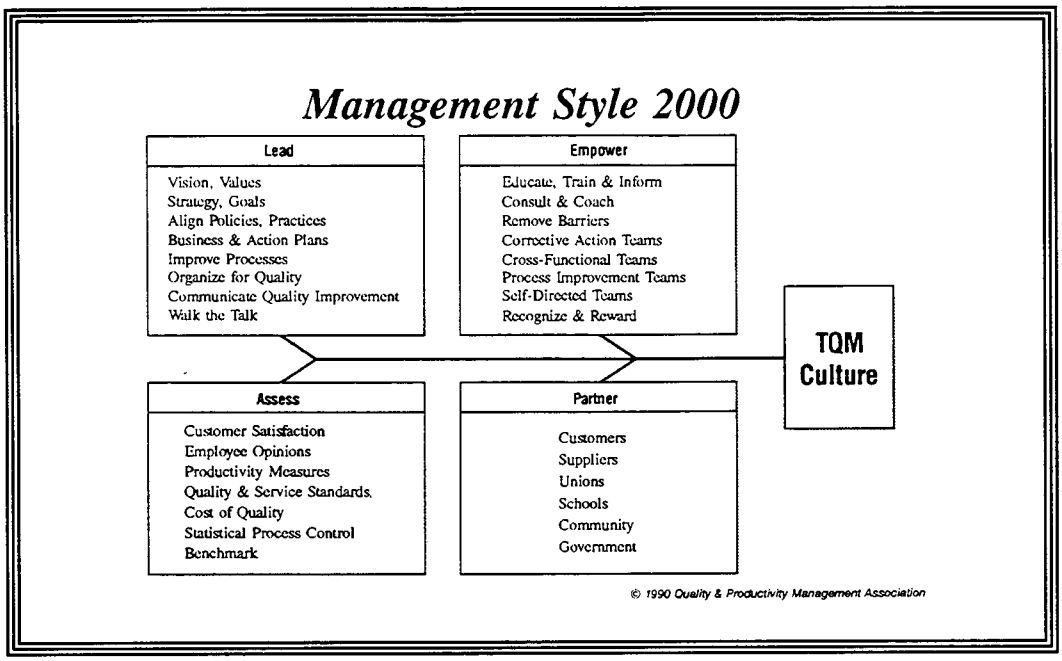
Looking back

Sometimes going back over old notes yields interesting information. Over a year ago, at the Federal Quality Conference, we heard the following points about leadership:

From the keynote Address by L. Bruce Laingen, Executive Director, National Commission on the Public Service (Volker Commission):

- An organization is only as good as its leadership.
- There is great power in the example leaders set.

From a speech by John Johnson, Harris Corp:



- They now call their program the Performance Excellence: Our People Lead the Effort (PEOPLE) program.
- The organization structure is to eliminate line structure - teams become the management base.
- Principles to remember: 1) Top management must lead (walk the talk); 2) People want to do a good job; 3) Managers don't know everything; 4) Performance improvement is a process, not a program; 5) That which gets recognized and rewarded gets done; 6) Training requirements are extensive; 7) Clean up your own house first; 8) Quality can only be achieved through ownership by the person doing the work.

From a presentation by Richard Teerlink, President and CEO of Harley-Davidson:

- Leaders must live what they say.
- Management must recognize that managers are the problem, not workers.

This Thing Called Leadership

One of the principles we espouse is that of identifying the "critical few." That is, of all the elements of a process, which ones are the most time consuming or expensive or important areas? Let's consider this for a moment while looking at the subject of leadership. Leadership is guidance, direction, instruction. Depending on circumstances, leadership may require more emphasis on one or two of these over the rest. In a fox hole in Iraq, it is too late for much instruction or guidance - it's get up and go direction that is needed. On the other extreme, a new employee needs to learn the ropes before being directed toward big new accomplishments.

The characteristics of a leader are guidance, respect, bearing, appearance, intellect, patience, ability to communicate, knowledge, reasonableness, sense of authority, charisma, power, bravery, humility, self-sacrifice, coaching, vision, and honesty. Some of these may appeal to us more than others. Weakness in any one of them may jeopardize a leader. Moreover, the perception of the absence of one of these characteristics may doom an individual to anonymity in the mind of another.

Leaders, then, are a result of the leader's characteristics and the follower's perceptions. If we complain about our leadership, first we need to look inward. At least half the problem is likely to be within ourselves. In other words, if I demand every leader be exactly like George Patton, I am going to be dissatisfied with virtually anyone who tries to get me to follow. It is not the problem with the leader, it is my problem with my preconceived notion of what a leader should do.

"The greatest achievement of the coach is to be coached by the player and become a player in return. In this way, the success of coaching is not measured in terms of a job well done, but in capabilities that form the foundation of the future."

Teambuilding, Leadership, and Quality Process Control Course Book, Federal Lands Highway, 1991

On the other hand, one who consistently behaves in ways which are contrary to proven leadership characteristics, can hardly expect to be followed. How would you rate yourself?

Guidance - ability to ask questions about processes rather than constantly getting involved in the details of specific problems and projects.

Direction - finding out the facts and making rational decisions without always looking for an expedient compromise.

Instruction - eagerness to teach, showing an excitement for the subject which infects the student.

Respect - being worthy of admiration and consideration.

Bearing - a manner and a presence which causes others to pay attention.

Appearance - the demeanor and image that indicates willingness to lead.

Intellect - aptitude to think and reason.

Ability to communicate - convey ideas in a convincing way.

Patience - composure and tolerance showing endurance and willingness to listen.

Knowledge - beyond intelligence, knowing the facts and being able to rationally use information.

Reasonableness - the ability to be fair-minded and rational.

Sense of authority - having the judgment and control to work in all circumstances.

Charisma - an appeal or personal charm.

Power - strength, force, energy.

Humility - modesty and mildness.

Bravery - courage, willingness to take a risk.

Self-sacrifice - forfeiting or relinquishing one's personal preference for the good of the entire organization, or for the sake of another.

Coaching - managing, mentoring, avoiding meddling in the work itself.

Vision - intuition, foresight, discernment to look ahead and anticipate potential consequences.

Honesty - integrity, sincerity, and straight-forward attitude to do the right thing.

Experts say that 85% of the problems in an organization are due to upper management controlled systems. The responsibility of upper management is extensive and ultimately it is only upper management that can set the example, the culture -- not just by more training or new reading material, but by showing employees we value them and their contributions enough to let them do their work without meddling. Nobody asked me, but just to show I take risks, here are some specific areas I think leaders in FLH could improve:

Ask customers what their priority activities are and agree on expectations before work begins.

Make sure people are trained for their jobs before they are expected to perform them.

Slow down. Minimize new efforts. Prioritize existing efforts. Concentrate on letting people have the time to do a good job on the right things.

Eliminate manipulation and intimidation.

Assess workload requirements in real numbers before making commitments to new tasks. When we need more people, either say "no, we can't handle that extra work at this time" or go up the ladder to get the resources. Our old paradigm is that "we can't get more people" - it is time to change. New jobs should be assigned and undertaken only when we know resources will permit quality work.

Here is where the concept of the "critical few" comes in. After looking these element of leadership over, pick out your three weakest areas and work on them. Review your progress after a month or so.

Eastern's EDDIE Program

Deborah Ranciato, Editor of the *Eastern Edition,* reported results of the second year of the Eastern Division Demonstration of Individual Excellence (EDDIE) peer awards. The number of employees receiving awards from their fellow employees increased from 69 in FY 1990 to 136 in FY 1991 -- an increase of 97%. For a more complete description of the program see the January 1991 issue of FLH Quality News or call Clara Conner, HFL-15, FTS 285-0038.

Dr. Larson Recognizes EFL

Federal Highway Administrator, Dr. Thomas D. Larson congratulated the Eastern Federal Lands Division in a note to Federal Lands Highway Program Administrator, Thomas O. Edick. The note was about the expeditious preliminary engineering and contract award for improvements to roads in the Washington, D.C. mall area. The July 10, 1991 groundbreaking ceremony made the front page of the Washington Post. Secretary of Transportation Samuel K. Skinner announced the initiative. He was accompanied by Assistant Secretary of the Interior Mike Hayden, District of Columbia Mayor Sharon Pratt Dixon and D.C. Delegate Eleanor Holmes Norton.

Other recent successes in Eastern include their use of a 15-item priority action plan, completion of a new correspondence review and tracking process, implementation of a cross-functional project scoping report, use of cost reporting along with project scheduling, initiating formal measurement of the scheduler, improved participation in the EDDIE Peer Award program, completion of a construction sign contest with the winning slogan, "We Engineer America's Scenic Highways.

News from Western

Western's Quality Coordinator, Patrick Wlaschin, recently accepted a position working for the State of Idaho. Pat's enthusiasm is contagious. His intellect and humor combine to make working with him a delight. His untiring efforts have benefited the organization and will continue to do so for years to come. We wish him and his family the very best.

National Mall Road Improvements

Aging roadways in and around the nation's capital are typical of the problems facing our country's infrastructure. The Departments of Interior and Transportation, through the National Park Service (NPS) and the Federal Highway Administration (FHWA), have created an Interagency Partnership that brings together the agencies with ownership, jurisdiction and responsibility for about 40 miles of roads leading into and around the National Mall area.

$10 million is programmed in 1990 and 1991. The "Interagency Workgroup for National Mall Road Improvements" has developed a five-year, $50 million plan that addresses the long-term street and pedestrian needs. The long-term plan depends on passage of a new Surface Transportation bill.

The Quality Coordination Team takes advantage of talent of its members by encouraging cross-division work where ever needed. Pat, for instance, along with Clara Conner of EFL, has taught in all FLH Divisions. In addition, Pat has provided training for Federal-aid and State officials in several States.

A View of Leadership from the Private Sector

John G. Johnson, Vice President, Harris Corporation, Palm Bay Operations Manufacturing, wrote an article titled, "Why Aren't Our Managers Better Leaders." The article appeared in the Quality and Productivity Management Associations Spring/Summer issue of "Tapping the Network Journal" and is used here by permission. His points have application in the highway community, including FHWA and FLH. At the risk (see our new quality policy on this subject!) of stepping on the toes of managers throughout the industry, here are some of Mr. Johnson's points which are particularly germane to surface transportation executives and managers:

- Many (especially top managers) think "buy-in" means approval and direction without subsequent personal behavior modification. The boss thinks he (like it or not, most top managers are male) has

"bought-in" to total quality management when he has accepted its viability and has directed its implementation. Then he goes back to his office, secure in the belief that he has done his part, and

> **"Leadership is inspiring people to voluntarily pursue a worthy set of mutually held values."**

that his people will do the rest. The trouble is, every one of his people go back to their work places too, but secure in the belief that the boss has merely made another motivational speech and announced the "program of the month." He thought he could continue to manage in the old paradigm while everyone else would manage in the new. Companies that have made real progress toward TQM have discovered that the CEO is the very first to change his management behavior. Then, others have felt safe in changing theirs by following his example.

- We have systematically deselected managers with predominant "leadership skills," and focused on those with only "management skills." A total quality management culture will demand that all layers of management have both highly developed management and leadership skills.

- If people are not to be told what to do in detail, then they must understand what is expected of them in broader philosophical terms. Furthermore, they need a system of measurements and rewards that will tell them how they are doing, and need to be able to draw support from their peers. These conclusions have defined the need for corporate visions, clearly defined value systems, and self-managing work teams.

- People need to understand "where we are going" and how we will know it when we get there."

- The traditional manager has been trained not to rely on either the skills or the integrity of his subordinates. He has never been required to articulate his vision, admit his mistakes, consider a value system, or treat his behavior in terms of its communicated messages. These are all scary concepts, but they are the very stuff of leadership skills.

- Leadership is inspiring people to voluntarily pursue a worthy set of mutually held values.

- Leadership skills can be learned. Every manager should be given a chance and some reasonable time to learn and adapt. A lot of patience is required while managers at all levels try to adapt.

CLASSIFIED

Libraries

Each Federal Lands Highway Division and Headquarters maintains a library of books, pamphlets, conference proceedings, and other materials related to quality. See your coordinator for information.

TQM Bulletin Boards

Office of Personnel Management (OPM)

(FTS) 266-2675 or (Com) 202-606-2675

(FTS) 266-1876 or (Com) 202-606-1876

Federal Highway Administration (FHWA)

(FTS) 366-3764 or (Com) 202-366-3764

Miscellaneous

Benchmarking Clearinghouse

The American Productivity & Quality Center (APQC) provides a clearinghouse for information about "best practices" for a large number of organizational processes. We are members of APQC through the Office of the Secretary of Transportation. Phone Charlotte Scroggins of APQC at 713-685-4657 or FAX 713-681-5321.

Research Guide and Sourcebook

FLH has a copy of this TQM source book. Consultant services and other references are described. Call Mark Chatfield, 366-9492 or Pete Perros, 366-9493.

Brochure

TQM in FLH, an attractive brochure describes our Vision, Mission, Guiding Principles as well as our organization. Your FLH Division Office has copies.

Team Guidelines

The popular book, Guidelines for Establishing and Operating Quality Action Teams is available from the Division Quality Coordinator. Additional copies may be obtained by calling Headquarters, 366-9492.

Training Opportunities

Training in all aspects of TQM is available from many sources, internal and external. See your Quality Coordinator for ideas and to help you make arrangements.

Speech Material

Ever have the opportunity to speak on TQM? Your training and exposure in FLH to the most current and most job-satisfying ways to do your work, makes you a valuable resource to others. We can provide visual aids and written material to help in your preparation. Call 366-9492 or write: FLH Quality News, HFL-1, 400 7th St., S.W., Washington, D.C. 20590

Volume 3 Issue 1 Federal Lands Highway Winter 1992

FLH QUALITY NEWS

U.S. Department of Transportation
Federal Highway Administration

400 7th St., S.W. Washington, D.C. 20590 (202)-366-9492

Winning, Yet Staying the Course

Employees of Federal Lands Highway together won the first ever Secretary's Annual Quality Award. The award was presented by Secretary Skinner October 18, 1991 at the Secretary's 24th Annual Awards Program. Receiving the award on behalf of the entire FLH organization was Greg Dolson, Eastern Federal Lands' Project Development Engineer. Tom Edick, FLH Program Administrator commented, "We were looking for someone who represented a group which is, without fanfare, successfully and measurably implementing quality management at the working level. Greg's office is doing this and we were thrilled to have him accept the award on behalf of the whole organization."

The award is given by the Secretary of Transportation in recognition of an outstanding Departmental organization which is customer-focused and committed to achieving excellence through continuous quality improvement. The citation for FLH states, "The Federal Lands Highway Office is recognized for providing leadership in implementing and sharing quality management principles in the Federal Highway Administration." "It was quite a privilege to represent Federal Lands Highway in accepting the award," Greg said, "I felt an immense sense of pride in our accomplishments in TQM. It was teamwork throughout FLH which enabled us to receive this recognition. Since the introduction of TQM into FLH almost three years ago, there have been many improvements in our organization - both big and small. The more we have achieved, the closer the team has become. Accepting our award was my moment of celebration, and I hope when our people see their award they will also take a moment to celebrate."

The competition was open to any organization in the Department of Transportation. Several groups in the Department have quality initiatives underway and applied for the award. The criteria for the award is tough but is intended for organizations which are still in the implementation phase. The idea behind the award is to encourage quality in the Department by providing

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Publication No. FHWA-FLP 92-005

FLH QUALITY NEWS
Volume III, Issue 1
Winter 1992
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The FLH QUALITY NEWS is an official publication of the Federal Lands Highway Office, Federal Highway Administration, U.S. Department of Transportation. It is published several times a year for educational purposes to promote quality principles among FLH's and other organization's employees, managers, and supervisors.

Other topics may include information about programs, policies, projects, and administration. Contents of this publication may be used without permission. However, courtesy credit is appreciated.

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recognition for agencies that are not only taking the initiative to improve their own work, but are also sharing their experiences with others.

The seven criteria for the award must each be addressed by facts and figures. A panel of reviewers from other organizations spent a week examining the applications. The criteria and the panel's approximate evaluations were: Leadership (70%), Information and Analysis (60%), Quality Planning (70%), Human Resource Utilization (80%), Quality Assurance of Products and Services (80%), Customer Focus (50%), and Quality Results (80%). So what did the panel specifically say about all our work over the past three years? They provided a list of strengths and areas for improvement for each of the criteria:

1. Leadership

STRENGTHS

- High level of organizational support as evidenced by significant involvement and visibility of top executives in developing the quality related efforts.
- Top executives form the Executive Quality Council which provides policy and strategic planning.
- Established formal quality goals and a vision statement.
- Key executives actively "spread the word" to internal and external groups, e.g., the Program Administrator visited each Division to discuss TQM, established peer reviews, held sessions between Division Engineers and employees, and networked with private industry.
- Committed significant resources to training employees.

AREAS FOR IMPROVEMENT

- Encourage many levels of employees to participate in setting and evaluating goals and objectives.
- Provide feedback to work groups on survey results and actions taken to address issues.

2. Information and Analysis

STRENGTHS

- Conducted a climate survey of employees, and questionnaires of external customers.
- Incorporated quality into existing productivity initiatives such as Value Engineering, project development and design manual.
- Established SOP's for external customers, e.g., the National Park Service and the Forest Service.
- Initiated efforts to improve quality processes such as PRMS, and the Quality Assessment Plan.

AREAS FOR IMPROVEMENT

- Increase users' access to databases.
- Develop formal action plan based on feedback for the Quality Assessment Plan and Climate survey.
- Supplier data is addressed minimally.

3. Quality Planning

STRENGTHS

- Established hard, measurable short and long-term quality goals.
- Established over 60 QAT's which monitored quality goals.
- Surveyed customers annually.
- Encouraged employee participation in the planning process.
- Benchmarked data for several cost factors against like organizations.

AREAS FOR IMPROVEMENT

- Expand on and refine the principal types of data used in the planning process.
- Feedback of customer requirements into the planning process appears limited to external customers.

4. Human Resource Utilization

STRENGTHS

- Established "Eddie" awards for peers, which is an innovative approach to employee recognition.
- Encouraged employees to participate in QAT's which instituted process improvements without higher level approval.
- Trained top management and a portion of middle managers.
- Scheduled facilitator and statistical quality control training.
- Established newsletter and TQM handbook.

AREAS FOR IMPROVEMENT

- Expand training to include "field" personnel since they are closest to tasks and represent the Federal Lands Highway Office to customers.

5. Quality Assurance of Products and Services

STRENGTHS

- Established proactive as well as reactive formal means for problem identification and detection.
- Developed and effectively used quality control plans for projects.
- Developed standards and SOP'S for contractors and suppliers.
- Reviewed and updated standards, specifications, and manuals.
- Evaluated data using numerous statistical techniques.

AREAS FOR IMPROVEMENT

- Consider including contractors on QATs to increase solicitation of input and feedback.

Federal Highway Administration's, Regional Administrator, Region 3, sent FLH Program Administrator Tom Edick a note which seems to reflect sentiment that has been expressed by other FHWA organizations --

Tom,

Congratulations to you and your Federal Lands Highway team for receiving the Secretary's Award for Quality. I know the effort you have all put into teamwork, excellence and quality through your TQM program. I'm pleased to see it result in such well deserved recognition.

/s/David S. Gendell

6. Customer Focus

STRENGTHS

- Instituted Quality Assessment Plan and formalized service goals.
- QATs processed feedback and complaints from a systemic viewpoint.

AREAS FOR IMPROVEMENT

- Methods for obtaining feedback are largely reactive.
- Consider supplementing annual meetings with external customers with other forms of communication.

7. Quality Results

STRENGTHS

- Documented growth in involvement and strong improvement process.
- Demonstrated improvements in many areas, e.g., in program administration, technology, and training.
- Initiatives such as the TQM handbook, newsletter, and the annual Climate survey greatly improved communications with employees.
- The PRMS system included provisions for continuous expansion and improvement.
- Evidence of strong, formalized structure and processes.

AREAS FOR IMPROVEMENT

- Increase frontline involvement and expand work group focus.

Our challenge is to stay the course. Our latest assessment shows that we are passing through the halfway mark toward institutionalizing quality in Federal Lands Highway. Receipt of the Secretary's Award is a signal that we are on the right road. The trophy is circulating to each of our field Divisions. A framed photo will be on permanent display in all our offices. We have much to do - but then continuous improvement implies we will always have much to do. Congratulations, FLH - WE WON!

National Quality Month Activity

On October 28, the Office of the Secretary sponsored a presentation and panel discussion titled "Our Leaders in Quality." Mark Chatfield, FLH Quality Coordinator, and Clara Conner, Eastern's Quality Coordinator, were feature presenters. Organizations that participated included finalists in the award competition; the Coast Guard's Naval Engineering Division, Maintenance and Logistics Command; the Coast Guard Support Center, Boston; and FAA's Office of Management Systems. Over 100 attended the session. Several agencies have requested information as a result.

The New Highway Act and FLH Planning

Our authorizing environment includes Congress as one of our primary customers. Congress provides funds and authority for all we do. In return they expect these programs to be delivered with the highest level of quality. We can gauge our success as an organization by the business our primary customers give us.

Consider the Federal Lands Highway planning effort successful. The previous legislation gave our FY '91 programs $235 million. It's interesting to compare FY '91 annual authorization levels under old legislation to the new program levels. To compare, we used the six-year average annual authorization under the new law. The minimum increase is in the Park Roads and Parkways program, up 35% from $60 million to $81 million. The Public Lands Highway program is up 42% from $40 million to $57 million. The Forest Highway element of the new Public Lands program is up 100% from $55 million to $110 million. The Indian Reservation Roads program is up 132% from $80 million to $186 million. Overall, the Federal Lands Highway program is up 85% from $235 million to $434 million.

Conclusion? One of our primary customers expects more of what we provide. Specifically in demand is our work which provides access to outdoor recreation and places of scenic, historic, and cultural interest. Congress sees the value in rural access and economic development, increased tourism, positive public perception, and environmental closeness which our program assures.

The tie to quality is this. Quality means conformance to requirements set by management considering customer needs. A chief customer is Congress as representative of the public. Their need is expressed in the legislation which authorizes and requires us to carry out our mission. When our mission and our work are consistent with the need, we can expect our efforts to be in demand and to be rewarded.

Starting in 1987, we helped identify our customers' needs through coordinated planning. We supported this legislation via input to efforts such as AASHTO 2020, the FHWA Futures initiative, development of the National Transportation Policy, as well as subsequent legislative proposals and initiatives. We measured and, although it was imperfect, we were able to present hard data in terms road conditions and needs. We demonstrated interest in management by facts and continuous improvement by endorsing programs for better planning and management systems. These will enhance delivery of FLH funds. The new legislation is perhaps the greatest indicator of the importance of quality planning in FLH.

FQI Bulletin Board

The Federal Quality Institute (FQI) has a bulletin board for Federal agencies interested or involved in total quality management. The board is not as "user friendly" as it could be because it is mainframe resident. However, here is a script file for CrossTalk which simplifies the access. Set your modem up for 2400 baud, half duplex. Use one of the following numbers: Headquarters, 301-937-0722; Eastern, 301-937-0722;

Central, 303-893-3808; Western, 503-241-0549. If you can't figure it out, call Mark Chatfield, FTS 366-9492.

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wait quiet 35
reply |
wait quiet 35
reply |
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reply L|
wait quiet 10
reply C2|
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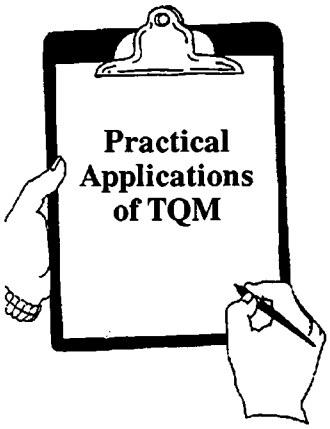


One of the newsletter survey responses particularly bothered me. Employees seem to have problems applying TQM to their everyday work. Part of the difficulty is semantics. I think people are generally turned off by the term "management." After all, the term is derived from the idea of manipulation - nobody likes to feel manipulated. Semantics are important. Some organizations use TQL to reflect "leadership." Some agencies are anti-TLA (three letter acronym) and avoid calling efforts to improve or change by some other terms. Frankly, we can't get away from such problems entirely. Maybe we can ignore them and just try to find value in the concepts - regardless of what we name them.

People inside and outside FLH are constantly making statements like this:

"These TQM ideas don't really have any application in my organization, they are more suited for a company that makes widgets."

"We are already doing that as much as we can."

"You can't really show any real improvement, can you?"

"I don't think there is any way I can make use of these ideas."

My response is usually along these lines:

"They apply to any organization which wants to continue to exist."

"If the group is perfect, you're right - you are doing as much as you can."

"Yes, FLH can show real improvement. Not all improvements are in terms of dollars saved, however. Much improvement has been measured in the ways we do our work -our processes and our work environment.

"If you don't think there is any way you can use these ideas, you probably won't. If you have nothing to measure or improve, you aren't doing anything."

Here are some specific TQM ideas which may cause you as an FLH employee to further improve the way you do your work:

- Make a list of your customers (people you provide things to), then ask them if what you give them is exactly what they need.
- Make a flow chart of the most important process you are involved in, then discuss it with your co-workers and your boss.
- Go over your work schedule for the past month, find what helped you stay on schedule or get off schedule, then try to make one improvement.
- Think about your best abilities and how you can contribute more to your work unit in those areas.
- Look for a team to join and participate in structured problem solving.
- Write a report on waste in your area of responsibility. Give the report to your supervisor.
- Determine a way to measure how long it takes you to do a task. After doing the same task and measuring it 15 to 20 times, plot a control chart and consider ways to improve the consistency and timeliness.

- Go over the letters you wrote over the past year. Count the errors. Make changes to reduce the mistakes.
- Look for ways to compliment people you work with.
- Post a chart showing weekly how accurately you have done your main task.
- Practice humor and skepticism without spite or cynicism.
- Ask your supervisor for a training class to improve your work skills.
- Write down your goals for the rest of your career. Then put a date by each one for when you want to complete it.
- Talk to your boss and all your co-workers at least once each work day.
- Nominate a fellow employee for an award, or suggest it to their supervisor.
- Ask your Quality Coordinator for information on what tools you might use or learn to improve your work.

Some Basic Definitions

- Customers - People or organizations that use a product or service which you provide.
- Partners - People or organizations that work with you to provide a product or service to others.
- Suppliers - People or organizations that provide you with a product or service.
- Stakeholders - People or organizations that indirectly influence or are affected by products or services you provide.
- Quality - Conformance to requirements set by management considering customer needs.

Conceptual Matrix Management

	Technical Disciplines		
	Civil Div.	Haz. Waste Div.	....
Region 1	Geotech	Env. Law	
Region 2	Bridge	Safety	
	Hydraulics		
Region 3	Highway	Solid Waste	
"	"	"	

Benchmarking Matrix Management

Benchmarking for quality improvement is an accepted industry practice for organizations and businesses who are competing to improve their own product or service quality. The benchmarking process includes identification and measurement of the "industry best," and then deploying strategies for improving systems, processes, practices and techniques to achieve and exceed the benchmark values. The Federal Lands organization has done internal benchmarking, and we are now going outside the public sector to evaluate other possibilities. We initially used the ASCE Peer Review process this past year as a starting point, and our efforts are now focused externally to establish a set of world class standards.

A three-hour Matrix Management benchmarking presentation was made to our Federal Lands' and Central Division's Quality Councils by James Poirot on November 20, 1991, in Lakewood, Colorado. Mr. Poirot is Chairman of the Board of CH2M Hill, a leading engineering firm which employs roughly the same number of people as FHWA and has over seventy offices located on five continents. Mr. Poirot is a prominent leader in the engineering profession. For example, in February 1988, Engineering News Record

named him "Construction Man of the Year," and in 1985 and 1987 he was commended as one of "those who made marks."

Mr. Poirot's presentation covered their corporate policies and Matrix Management techniques that have made them very successful in the market place while remaining the most sought after engineering employer by new engineering graduates. His company also has an extremely low turnover rate of about 5 percent compared to industry's standard about 15 percent. Jim has made similar presentation to other public agencies and his willingness to share his company's policies and management techniques is a model of professionalism. His presentation was video-taped, and copies are available.

Handling Failure and Judging Success

by Mark Chatfield

Washington, D.C., November 26, 1991

The National Symphony Orchestra draws a crowd for every performance. Ticket receipts exceed $40,000 for a 2-hour concert. Weekends are usually sold out. Judging by customer satisfaction, the NSO is tops. But last night's performance was flawed.

The Cello Concerto in E minor by Elgar was performed almost perfectly by cellist Gary Hoffman. Then, after intermission, Conductor Andre Previn led the orchestra in Von Williams' "A London Symphony" (Symphony No. 2). The first of four movements suggests the start of a busy day in the city. The second movement featured the English horn described by Von Williams as "an idyll of gray skies and secluded by-ways." The "idyll" didn't linger long last night.

You probably know the scene at the Kennedy Center. The conductor in his tuxedo, orchestra members in black formal attire, the audience is made up of politicians and diplomats, tourists and bureaucrats. The atmosphere is nervously proper. It would be the end of the world if something went wrong.

It was then. English horn player Richard White began his solo and then suddenly, shockingly, collapsed on stage with a clamorous disruption.

The ensuing scene reminded me of the way an injured football player is cared for during the big game. The

orchestra stopped playing. The audience and other orchestra members gazed in anxious and helpless curiosity as the oboist and bassoonist stooped to help the stricken player. In a minute, Mr. White struggled to his feet and was helped to the side exit. Fortunately, the problem was not critical. He had apparently fainted after suffering from flu-like symptoms.

Had it not been for oboist William Wielgus who also plays the English horn, I'm not sure what the orchestra would have done. As it was, they simply coordinated the substitution and started the second movement over, continuing the piece to the end. Amazingly, the incident was almost forgotten 10 minutes after it happened. The customers will be back for the next concert.

The orchestra did not play the London Symphony as it was intended. They did not meet the standard which the audience or the composer or the critics expected. The quality of their effort, however, was never in question. In fact, their ability to recover and perform in the face of adversity heightened their image from within and without. We can learn from all this.

First, no matter how much we know and practice and try, there will be circumstances which arise to cause disruption and failure. We cannot be perfect. We can minimize adversities, however, and we can learn and get better.

Second, there are other ways to judge success besides blind conformance to a specification or a policy. We must think of our external customers and their needs while also considering our internal resources and capabilities. The show must go on.

> Bryson's Rule:
>
> We get so concerned with urgent, we never have time to deal with the important..

Third, there are things we can do to diminish harm even though we know we can't prevent every deficiency. Having people who are trained, accomplished and versatile provides a flexibility which can ameliorate an otherwise devastating event.

Fourth, and possibly most pertinent, we should not use examples of failure to judge motive or ability or quality. We should judge success by knowing what the customer thinks.

Climate Survey - Still Improving

November 15, 1991

We now have results from a full three years of tapping into our employees' attitudes and perceptions of the Federal Lands Highway organization. Baseline data for other Federal agencies shows an average score of 3.5 of the possible 6.0. Our *lowest* score is 3.7! The overall FLH Climate Survey data shows our very highest marks in three areas:

- "Social environment encourages quality." (4.47)
- "Employees perceive high value and ethics." (4.60)
- "Employees are customer focused." (4.55)

Perhaps the greatest value of the survey information is knowing where we have the greatest potential for improvement.

Over the three years, none of our scores were below the target value of 3.5 out of 6.0. However, our lowest marks were:

- "Creativity and innovation is encouraged." (3.70)
- "Organization structure helps focus on quality." (3.70)
- "Rewards and recognition are fair and timely." (3.83)

Here are some ideas for things which can be done to improve in these areas:

Innovation

How many things are being done in your Division just because "this is the way that it's always been done"? Many times there are good reasons for the tried and true approach. However, there are likely to be more than a few instances where a fresh approach can be a better approach. The best source of ideas about these new approaches are the people involved. Here are some ways to tap into this source.

- Make sure people are not afraid to try something new. Don't punish creativity but rather encourage calculated risk raking.
- Publicize success stories and give credit to the initiators.
- Institute a suggestion system - attach a bonus for the best suggestion.
- Allow more freedom for people to guide their own work.
- Introduce formal mechanisms for the implementation of new ideas.

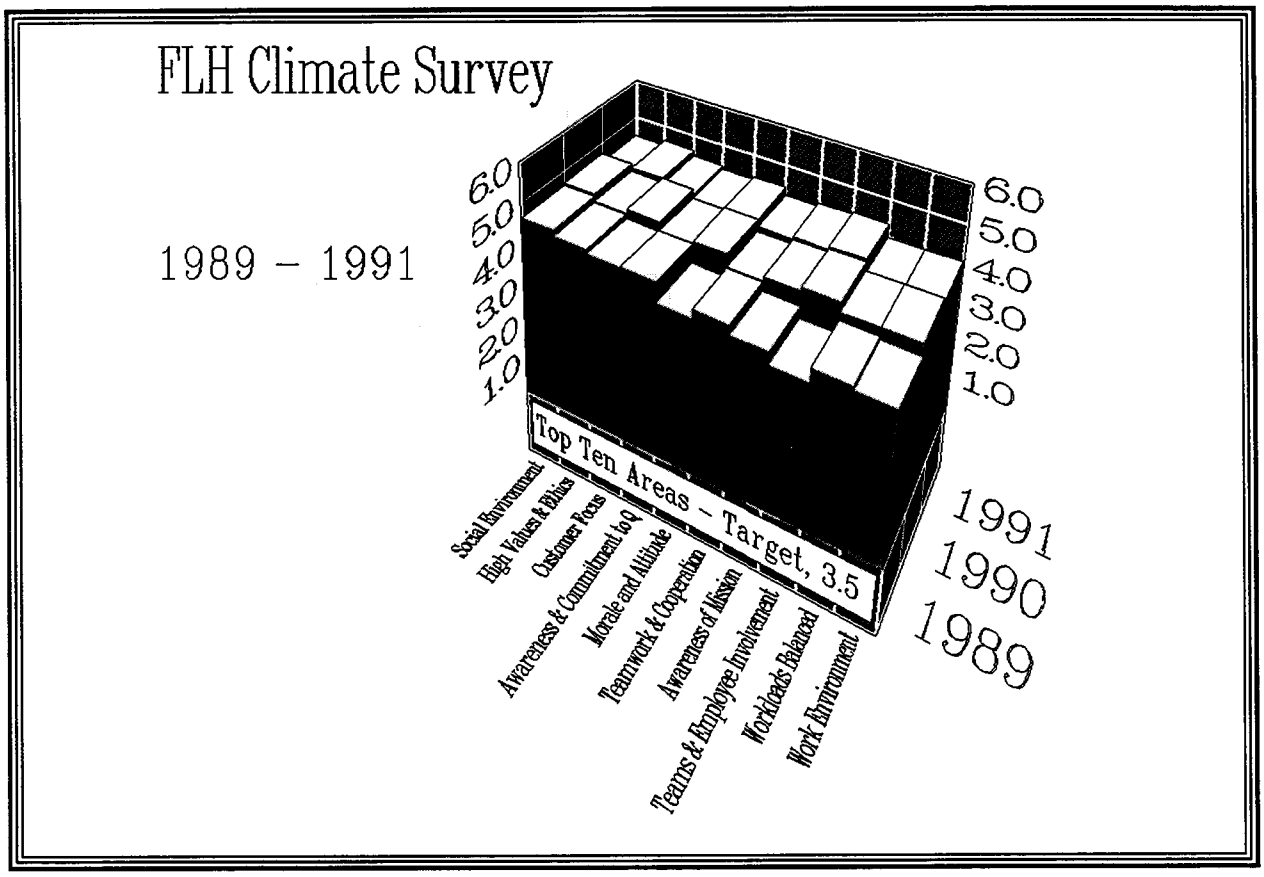
Organization/Group Structure

Our scores indicate that people often have to shift work priorities and/or re-do job tasks in order to get the job done. Sometimes shifting work priorities is inevitable due to the nature of the jobs. Often, re-structuring the group can alleviate some of the problems.

- Give people responsibility to make decisions and be flexible.
- Check on information flow - especially between work unit and organizations.
- Use task teams or project teams when appropriate.
- Assign a quality team to investigate the problem.

Reward Systems

While salary increases and promotions can be powerful rewards, there are other reasons that people find work to be rewarding. Since the FLH is limited in the types of monetary rewards that can be use, we need to make sure we follow through on our successful efforts in peer awards and concentrate on dedicating the resources necessary to make our new suggestion program work. Some other possibilities include:



- Awards - (formal and informal) It's always possible to set up an in-house award for "best effort" or "most improved."
- Recognition - Publicize success stories.
- Pats on the back - Everyone likes to be told they're doing a great job.

Although salary increases and promotions cannot be tied directly to the quality and/or productivity improvement process, it can be helpful to include an evaluation of such efforts in the performance appraisals of managers and employees. The use of this option presupposes the establishment of fair goals and/or objectives.

Progress, Plateaus, and Declines

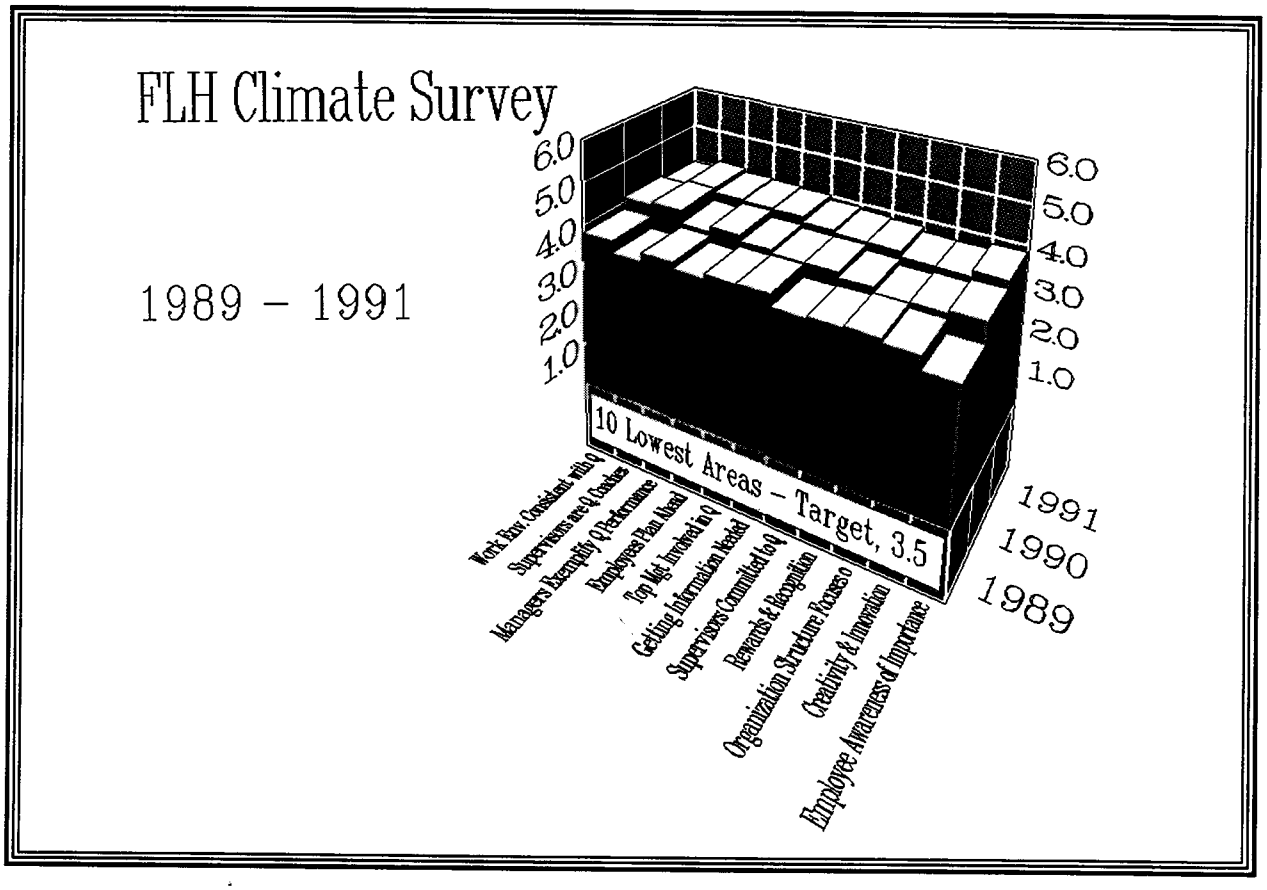
When the stock market's Dow-Jones average goes up or down 20 points, no one really pays much attention. It's not significant. In terms of our survey which is on a scale of 1 to 6, generally speaking, changes of less than 1/2 point in one year are not statistically significant. As improvements are made, scores begin to plateau. The very best organization's scores level off in the 4.5 to 5.0 range. In the past year, our scores began to reflect this.

We are making extraordinary progress on several fronts. From 1989 to 1991, our greatest progress was in:

- "Teams and employee involvement." (3.56 to 4.38)
- "Employee awareness of the importance of quality." (3.14 to 3.84)
- "Supervisors are quality improvement coaches." (3.53 to 4.17)

From 1990 to 1991, our biggest increases were:

- "Managers set examples of quality performance." (3.86 to 4.08)
- "Top management involved in quality and productivity." (3.85 to 4.04)
- "Employee awareness of the importance of quality." (3.64 to 3.84)



We declined in only two areas from 1989 to 1991, neither of which is statistically significant:

- "Social environment encourages quality." (4.64 to 4.47)
- "Employees aware of and committed to quality." (4.39 to 4.36)

In the past two years, from 1990 to 1991, we declined in five areas, none of which are statistically significant:

- "Social environment encourages quality." (4.70 to 4.47)
- "Work environment is consistent with quality policies." (4.10 to 4.01)
- "Workloads are balanced and tools are available." (4.08 to 4.03).
- "Employees are customer focused." (4.61 to 4.55)
- "Employees aware of and committed to quality." (4.38 to 4.36)

So, the next time someone asks what real results we are seeing, tell them that since 1989, our employee involvement is up 22%, morale and mission awareness are up 18%, and our supervisors and managers are 17% more quality oriented.

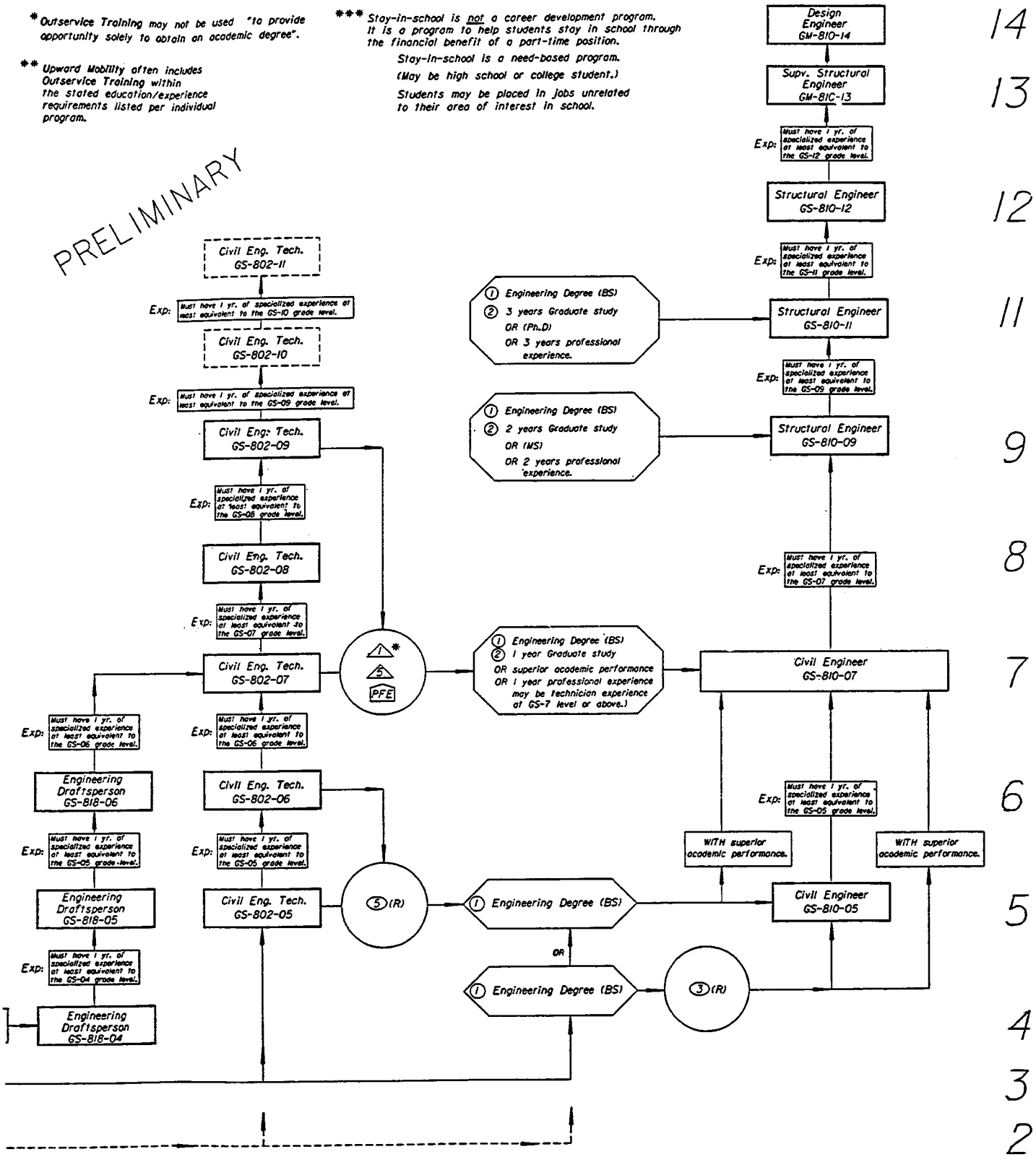
CAREER DEVELOPMENT PLAN

by: Ellie Minahan, Central Federal Lands Highway Division

Career development is perhaps the most effective management tool for building and keeping high quality staff in Federal Lands Highway. It creates a win-win situation -- employees have the means and support to advance their careers and managers have a motivated staff that grows in-house and buys into the organization. Career development provides a more stable workforce and develops better employees throughout the ranks.

It gives our people hope for advancement and establishes a personal interest in their success. Research by Central's Bridge Quality Action Team (BQAT) shows that FHWA's existing career development programs are not well known or used by supervisors and employees. The teams comprehensive plan draws all these plans together and shows how they can be used. Very simply, an individual locates his

(Continued on page 12.)



Segment of the career "road map"

or her current position on the map and can quickly see the options currently available and those ahead.

Although designed for career opportunities in Bridge and Structures, much of the plan applies to all FLH employees. The plan could serve as a pilot Career Development Plan for all FLH and beyond. [Excerpted and edited from the team's preliminary report. - ed.]

The BQAT, CFLHD, first met together on November 7, 1990. This team consists of four members. They are Jim Keeley, Bridge Design Engineer; Teresa Oray, Bridge Secretary; Norm Schneider, Supervisory Design Engineer; and Ellie Minahan, Civil Engineering Technician. Co-facilitators were Darlene Puleo and Janet Curtis. We lost Janet, however, to a promotion. (Congratulations!) Thanks, Darlene, for your continued support and assistance.

Career Development was chosen as our team activity. This area was perceived as something which affected everyone. We were especially interested in implementing the reasonable use of duty hours for employees seeking training to increase their skills and further their careers.

We did some brainstorming during our first meetings to identify problems. We agreed upon a vision and mission statement, as well. In looking back over the past year, I can see that our statements have been a definite guide in staying on track.

We have done much research in reaching for our goal. What has evolved over the past 12 months is a compilation of existing programs and their regulations. These varied programs may be implemented for career development, career enhancement, and for recruitment.

Our team, I believe, has been exceptional. Each member has shared views, gathered information, edited statements, and proofread text. Because of our individual busy schedules, tasks have often been split into four pieces. Each member has also volunteered to perform tasks which might be unique to their personal contacts or resources in gathering information.

Currently, we have gathered all this information into a single, one-inch (2.54 cm) notebook which lists 13 programs that are in place. The BQAT has compiled a career road map, using the bridge positions only, which shows paths that may be taken to advance in one's career. This road map also shows how "cross-overs" may occur (dependent upon acquiring the qualifications and job openings).

We have not finalized our "Plan" yet. We anticipate two reviews. Our personnel officer, Ms. Annie Achee, has been very supportive and has supplied us with much information we are including, to assure that our presentation is correct.

In addition, we have agreed to request a review by a representative cross-section of CFLHD employees. We hope that it will be received enthusiastically, and we shall consider any constructive comments resulting from this review. Naturally, we must also receive approval and endorsement from management in order to circulate and utilize this plan.

A few topics included in our Table of Contents in addition to the 13 programs and the Bridge road map are copies of the forms referenced in the various programs, e.g., the "Agreement to Continue in Service" form. We are including an edited "Individual Development Plan" form which is short and may be discussed and completed during the performance appraisal process. Also included are two excellent resources from the FHWA Office of Personnel and Training; "Traditional Career paths in FHWA," and "Employee Guide to Individual Development Plans."

The final statement of our vision/mission is, "Each member is committed to the successful completion of our mission." This commitment by each individual, communicating and functioning as a team, is truly the essence of TQM.

Paradigm Shift?

ASCE News, December 1991 tells of a bridge in China that is nearly 1,400 years old. It has a clear span of 123 ft. (37.3 m), is still in use, and has required maintenance every **300 to 500 years**. The bridge is an arch made of limestone blocks held together by keys and through bars, both made of wrought iron.

What in our society today keeps us from such quality?

Quality Coordination Team Back to Full Strength or An Introduction to WFLHD's Lonnie Moss - by himself

Western Federal Lands Office, Vancouver, Washington

Mark Chatfield asked me to write an introductory blurb about myself as a new member of the Quality Coordination Team. I've struggled somewhat with this assignment. Perhaps that's because it's difficult to summarize who I am in just a few words, and yet I find talking at length about myself to be an unappealing talk. However, Since, for reasons still not entirely clear to me, I did volunteer for this job, I'll be a good sport and acknowledge that this is probably a reasonable initiation rite. I'm going to start by listing some of my likes and dislikes and let you paint your own picture of me.

I like: every day to be different than the day before; loose plans, but a good sense of direction; only enough organization so that I can find what I'm looking for without searching much; real challenges; people who take their work seriously; the satisfaction of having done a difficult job well; time with myself or other good company; my family; learning a new skill; building or rebuilding almost anything from a new house to a broken hay baler; spicy food; strong drinks; being outdoors; Dean Koonz novels; elk hunting; the classified ads; growing things; seeing new places; little kids; big animals.

I dislike: filing, changing the oil, balancing my checkbook, or otherwise maintaining anything; repetitious work; unnecessary rules; people who take themselves too seriously; meetings without purposes; shopping for clothes; well-planned vacations; crowds; writing about myself.

What do I bring to this job? Most importantly, a positive attitude toward TQM. like the philosophy. I believe that, if properly applied, TQM will ultimately produce the very best products and services. It will do that because it will produce excellent employees and managers who work together toward well-defined goals. That's the most that we can ask of any management system.

Lest you doubt my sincerity, I should say that I consider myself a skeptic. I've been in Federal government long enough to have seen lots of "buzz word" management philosophies come and go, some of them more than once. Few of them had a lasting impact. I believe this one is different. If we don't allow it to be abused, it will be with us for a long time.

The Sound of Quality? The Quality of Sound?

by Gina Sexton

I spent some time last year working on improving communications within WFLHD. During that time, I collected what seems like a mountain of information on communications. One article I ran across had some particularly interesting statistics about how messages are conveyed during the communications process. This article stated that when you are communicating with a person (face-to-face), your words only convey 7% of the message, Your body language conveys 55% of the message and your tone conveys 38% of the message. How you are positioned in your chair and your tone of voice is more important than your words?

The article had even more astounding statistics about communicating over the phone: your words convey only 13% of the message and your tone conveys 87%.

I must confess that I thought choosing and delivering the right words was the most important part of communicating the message. I thought that body language was the second most important part of communicating. I don't know about you, but when something I think is true is disputed, I have to run some tests to see just what

to believe. Hence, I started the most unscientific study in history; I was determined to uncover the facts about this tone thing. I began the study by actually listening to what was going on around me. This was a brand new concept for me!

I noticed that radio and TV broadcasters have excellent tone and pitch usage. I also noticed that people working in phone sales tend to have a highly developed use of tone and pitch. Periodically, I get a call from a new insurance agent who wants to save me money on my insurance. The last time I got one of those calls (yesterday), I asked this young man how he learned this illusive skill of using tone and pitch. He said he was trained and he actually practices the way his voice sounds over the phone. His company's course teaches which words to emphasize, when to raise the voice, when to lower it, and how long to pause between sentences. His company recommends pausing for less than .01 milliseconds between sentences; I recommend lengthening that pause a bit for non-sales related communications.

I continued the study by zeroing in on the people in my office that I felt were already good communicators; I watched them and listened to the way they use their voice while communicating. Of course, I did not listen to what they were saying; that wasn't part of the study. What conclusions did I reach from this study, you ask?

1. I believe that communication is the most important thing we do in our jobs (and life). It seems to be the thing that we spend the least amount of time on.

2. I believe that most people think that once they learn the skill of speaking (as a baby), they are set for life. They are finished learning that skill and they can move on to bigger and better things. On the contrary, I think we need to continually work on improving our communication skills.

3. It is not what you say but how you say it!

Western Division Team Successes in Project Development

by Scott Rustay, Project Development Engineer, WFL

Since the beginning of our involvement with the Total Quality Management concept, we have seen steady improvement in our ability to use teams to improve operations. While some of our initial efforts suffered

because of our inexperience with the process, even the least successful efforts taught us what not to do next time. The facilitator training and the training in communication and team building have enhanced our ability to form successful teams. Until TQM came along, the common wisdom was "If you want to kill an idea, just give it to a committee." Committees could haggle forever and never accomplish anything. Steadily improving team skills coupled with a growing acceptance of the view that teams can produce better results than individuals, has led to the following success stories:

Computer Aided Design and Drafting (CADD) QAT: Succeeded in bringing together representatives of all the CADD users and support groups. Developed filenaming standards and addressed other common user issues. Was disbanded when a split in team member interests caused problems some members were interested in solving specific problems while others were interested in long-term development issues.

At the request of CADD users, this group has been reformed as a committee to provide general oversight for CADD operations and to form Quality Action Teams to resolve specific technical problems.

Roadway Design System (RDS) Team: Gathered together all the normal notes maintained by individual RDS users on short cuts and problem solutions and assembled them into a booklet, The booklet, currently in draft form, will be distributed to all RDS users when finished and will be updated by ADP whenever RDS system changes are made.

Survey-Design QAT was formed to find the cause of a series of problems that appeared to be in the transfer of survey data among Survey and Location and Design. Initial findings of the group disproved some of the

Federal Lands Highway's 1991 Administrator's Award Recipients

From left to right between Deputy Administrator McCormick and Administrator Larson are:

Ben A. Torres, HFL-16; Cynthia B. Kinder, HFL-17; and David Hamm, HFL-15.

preconceptions about the causes of the problem. Recommendations resulted in improvements in survey staffing and practice and in better communication between Survey and their customers. This QAT will continue its work this winter.

A Remodeling Team was formed to remodel the Design Section work area and to implement the plan. It succeeded in reaching agreements on floor plan, furniture, and all other aspects of the task. The process was very successful in addressing the concerns of all the people who work in the section, and in blending these personal concerns with management requirements. This team did in roughly six months, what had been under study using other approaches for six years.

Eastern Division Quality Council Workshop

by the Eastern Division Quality Council, reprinted with permission from the Eastern Edition

The Second Annual Eastern Federal Lands Division Quality Council (DQC) Workshop during the week of November 4th was very successful. The DQC reviewed what the Division had accomplished over the last year, reviewed comments and suggestions from employees, and looked forward to what could be accomplished in the coming year. The most important effort of the Workshop was the preparation of a new Action Item List: 1) the formulation of new action items where necessary; 2) modification of the role of existing QAT's to address certain issues if they pertained to Action Items generated last year; and, 3) identification of specific actions the DQC would implement in the coming year. The Action Item List for this year was distributed to all EFL employees by memo dated 11/25/91.

Another important part of the Workshop was to evaluate what the Division accomplished with TQM in the past year. The Climate Survey results showed increases in <u>every</u> category. The DQC attributes these increases, in part, to various efforts initiated in the last couple of years; the PRMS system; the availability of fiscal data on the LAN; Project Scoping Reports; employee meetings; Partnering; EDDIE Awards; QAT's; and TQM orientation and training meetings.

Finally, the DQC made some decisions on how to better communicate our TQM efforts throughout Eastern in the coming year. To start, there was a 3-hour meeting open to all employees on Friday, December 6 for sharing of information.

In addition, five employees will be invited to each DQC monthly meeting on a rotational basis, beginning with the January meeting. Their participation in discussions is encouraged.

All employees are encouraged to participate in Total Quality process through their presence at employee and QAT meetings, their suggestions or questions, and their general support. TQM, if implemented properly, should enable us all to work more efficiently and with increased quality of results. Each person is an important part of the overall effort.

Manage Your Time

Time management is more art than science. One of our EQC members, Al Burden, has a system you may find useful.

Using a simple word processing file, Al creates a new page of "Things to Do" each morning. He copies the page for the previous day and updates it. Then, during the day, he checks off the items completed and notes interruptions and priority shifts. The result is a time management plan, a record of activity, a measure of how time is spent, and a baseline to compare work characteristics from one month to the next.

First, Al lists all his pending work items, one per line. Then, at the bottom, is a Daily Schedule. This is a time line across the page from left to right under which his work item is placed:

FHWA 2000
PRP-PMS
- Final Plan
- RIP Van

Annual Report
DC Streets
- Memo to HAD-1

Etc.
Etc.

6am 7am 8am 9am ....
-> Misc > FH Alloc. --> PMS-->

Now I see how Al manages to get so much accomplished. He uses the Shewhart Cycle, "Plan, Do, Check, Act."

Recommended Reading

Libraries

Each Federal Lands Highway Division and Headquarters maintains a library of books, pamphlets, conference proceedings, and other materials related to quality. See your coordinator for information.

New Books

"Participative Management," Plunkett & Fournier, Wiley, 1991.
"Positively Outrageous Service," Gross, Master Media, 1991.
"Beyond Quality," Bowles & Hammond, Putnam, 1991.
"Performance Measurement for World Class Manufacturing," Maskell, Productivity, 1991.

Information Sources

Benchmarking Clearinghouse

The American Productivity & Quality Center (APQC) provides a clearinghouse for information about "best practices" for a large number of organizational processes. Phone Charlotte Scroggins of APQC at 713-685-4657 or FAX 713-681-5321.

Research Guide and Sourcebook

FLH has a copy of this TQM source book. Consultant services and other references are described. Call Mark Chatfield, 366-9492 or Pete Perros, 366-9493.

Miscellaneous

Brochure

TQM in FLH, an attractive brochure describes our Vision, Mission, Guiding Principles as well as our organization. Your FLH Division Office has copies.

Team Guidelines

The popular book, Guidelines for Establishing and Operating Quality Action Teams is available from the Division Quality Coordinator. Additional copies may be obtained by calling Headquarters, 366-9492.

Training Opportunities

Training in all aspects of TQM is available from many sources, internal and external. See your Quality Coordinator for ideas and to help you make arrangements.

Speech Material

Ever have the opportunity to speak on TQM? Your training and exposure in FLH to the most current and most job-satisfying ways to do your work, makes you a valuable resource to others. We can provide visual aids and written material to help in your preparation. Call 366-9492 or write: FLH Quality News, HFL-1, 400 7th St., S.W., Washington, D.C. 20590

Volume 3 Issue 2 Federal Lands Highway Spring 1992

FLH QUALITY NEWS

U.S. Department of Transportation
Federal Highway Administration

400 7th St., S.W. Washington, D.C. 20590 (202)-366-9492

Federal Lands Holds Workshop

The Federal Lands Highway organization held its second national workshop in Nashville, Tennessee on March 2-5. The Eastern Division sponsored this year's FLH Quality and Planning Workshop. The session covered issues of current national interest as well as areas of special importance. A beautiful notebook contained most of the necessary materials for the week. It provided a permanent record of the many facets which were covered. In it, participants found summary information on the primary subjects:

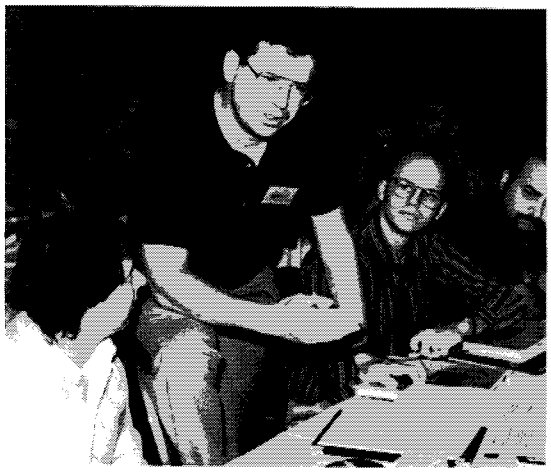
Goals and Status of Planning Efforts

Key Indicators

Partnering

Organizational Development

"Cracker-barreling" was the most popular element of the workshop. Eighty four percent of the participants rated it "Very Useful" on the survey. Lois Hart of Leadership Dynamics in Boulder, Colorado suggested the novel forum in her role as consultant for workshop planning. Most conferences have rigid agendas for the entire session. Our workshop provided time for learning in any area there was special interest. We used input from everyone to decide on the workshop subjects by asking people to write down what they wanted to hear about and what they were prepared to present. The list of subjects gives an idea of what might be current interest areas across the organization: Scheduling, Customer Surveys, Project Management, Project Development, Division Action Planning,



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Publication No. FHWA-FLP 92-009

FLH QUALITY NEWS
Volume III, Issue 2
Spring 1992
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The FLH QUALITY NEWS is an official publication of the Federal Lands Highway Office, Federal Highway Administration, U.S. Department of Transportation. It is published several times a year for educational purposes to promote quality principles among FLH's and other organization's employees, managers, and supervisors.

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TQM, Communications, Use of Architects and Engineers, Training, Hiring Practices, Legislation, Benchmarking, Teams, Process Improvement, and FHWA 2000.

The 1-hour sessions were conducted informally without guidelines -- like the old-timers would do in the general store while gathering around the cracker barrel. A special team combined the lists of interests and available expertise and set up eight different sessions.

- **Scheduling** - Clara Conner and Charmaine Farrar
- **Customer Surveys** (2 sessions) - Rob Stone
- **Total Quality Management** - Mark Chatfield
- **Project Development and Management** - Lonnie Moss, Scott Rustay
- **Communications** - Gina Sexton, Lois Hart
- **Training in the Western Division** - Rich Wasill
- **Architects and Engineers** - Ed Calderon
- **Central Division Action Plan** - Charmaine Farrar

Planning topics included the FLH Strategic Business Plan Concept presented by Mark Chatfield; FHWA 2000 presented by Larry Smith; Impacts of ISTEA presented by Al Burden; Field Division Action Plans presented by Lonnie Moss, Charmaine Farrar, and Clara Conner; and Headquarters plans including Workforce Diversity presented by Pete Perros.

Quality-related topics included Key Indicators presented by Rob Stone of Rob Stone Associates in Madison, Wisconsin; Partnering presented by J. Sullivan of Performance Training Corporation in Golden, Colorado; and Organizational Development presented by Jeff Bryan from the Volpe National Transportation Systems Center in Cambridge, Massachusetts.

The workshop, however, was not <u>all</u> work. The Quality Coordination Team (QCT) who arranged the times, set aside several opportunities for rewards and recognition. In addition, (just in case there are those who were out on extended illness and haven't heard) there was a group dinner on Wednesday evening. The dinner was planned by Gina Sexton and Jim Roller. The awards were handed out by Tom Edick and the entertainment included the Division Engineers (Gary Bob, Jimmy Bob, and Jerry Bob). This may have been the first "Family Feud" to bring family members together. The *family*, of course is that of FHWA including FLH. Our special FHWA contact is Karen Kabel of Management Systems. Karen helped us get started in TQM three years ago and came to this workshop to help and to keep up with our progress.

During the workshop, two field trips were provided. First, an afternoon motor coach ride to the Natchez Trace permitted participants to hear about and see work on the Parkway. Then, after the workshop, about half the attendees stayed for a Friday motor coach trip to the Cumberland Gap tunnel project.

The articles which follow provide an overview of the main topics of the workshop. If you want more information, just find someone who attended or contact your quality coordinator.

"We have achieved a cultural paradigm in which Quality, Operational Planning, and Execution are indistinguishable."

John Nelson, Marlow Industries

Strategic Business Plan Concept

Planning - It's not a mystery, it simply means working smart. We all work hard. We don't always work smart. Planning is essential to working smart.

In FLH, we have planned our work. Divisions develop annual work plans. Offices, as well as individuals, plan their work. So, what's all this interest in planning? We have been "planning" for years. Some of these plans are active, some are dormant. Here is a partial list of planning items from the FLH Program Manual:

- Coordinated Management Plans
- Year Management Action Plan
- Annual Work Plan
- Program Emphasis Areas
- Mandatory Plans, Reports, and Information Listing
- Program Planning
- Project Development Plan
- Road and Bridge Management Plan
- Technology Development Plan
- Cooridor Studies and Environmental Assessment Action Plan
- Personnel Management Evaluation Plan
- Performance Evaluation Plan
- EEO/Affirmative Action Plan
- Career Development Plan
- Annual Training Plan
- Budget Estimate and Fiscal Plan
- Travel Plan
- Equipment Plan

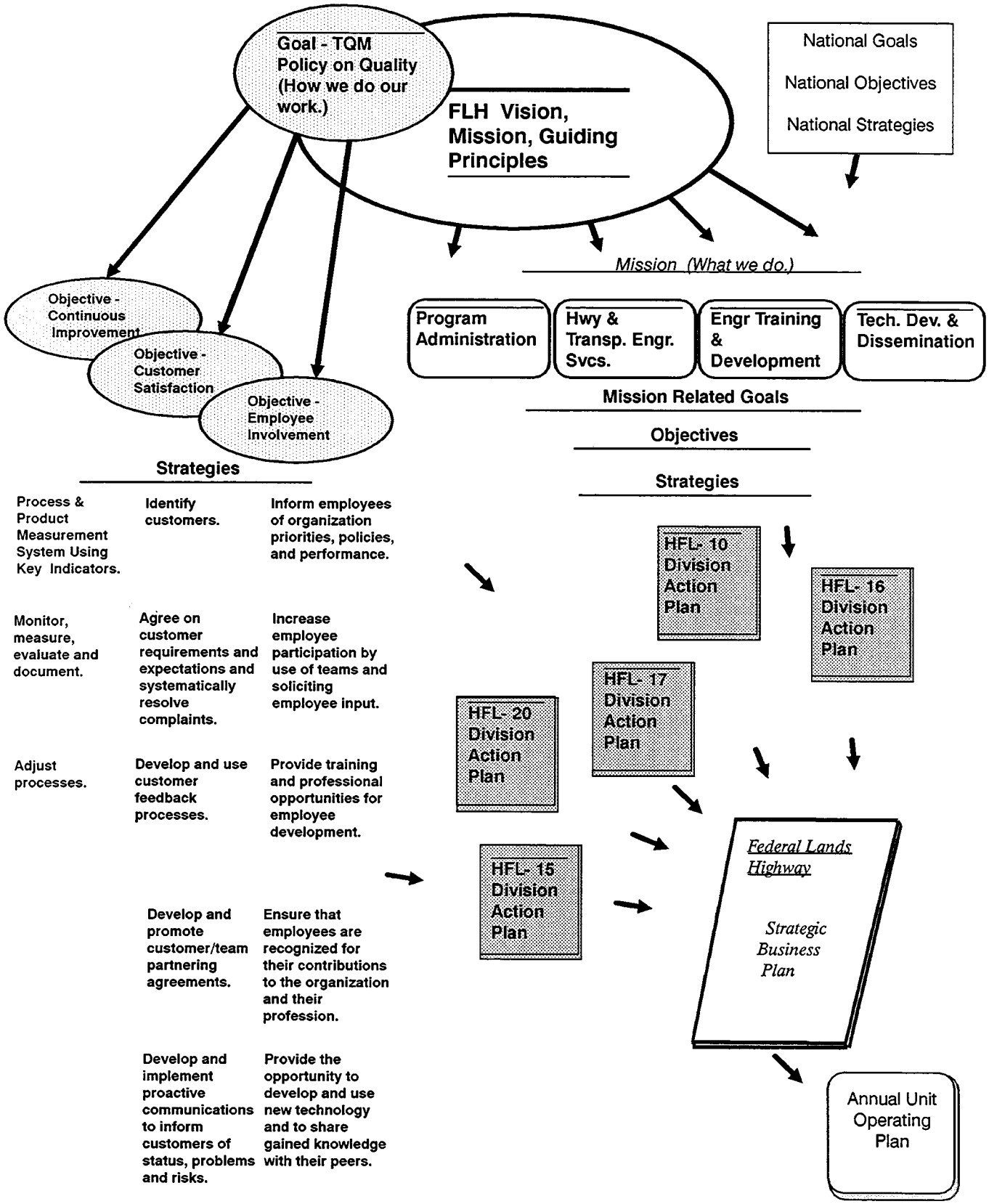
In the past couple of years, we have seen efforts to provide a meaningful framework for all these plans. We don't have our strategic planning process in place yet, but we are getting there.

The schematic titled Strategic Business Plan Concept - Federal Lands Highway, is our attempt to graphically depict how National strategic planning through FHWA 2000 provides a framework for FLH and all that we do. The schematic depicts our fourfold mission as What we do and TQM as How we do our work. In other words, TQM is cross-cutting. It provides tools for us to better perform our work.

One question came up at the workshop related to our mission of engineering training and development: Does this mean no one besides engineers is to have training? Tom Edick explained that each of our mission areas describes a major element of the FLH business. In the case of this mission area, the Federal Highway Administration looks to FLH to train and develop engineers for the whole of FHWA. For us to do this, we must be capable and trained in many disciplines -- not just engineering. For example, we can't train and develop engineers without having administrative, personnel, fiscal, clerical, technical and other skills to make it happen. Those skills require our people in all disciplines to be trained. The same goes for our other three mission areas.

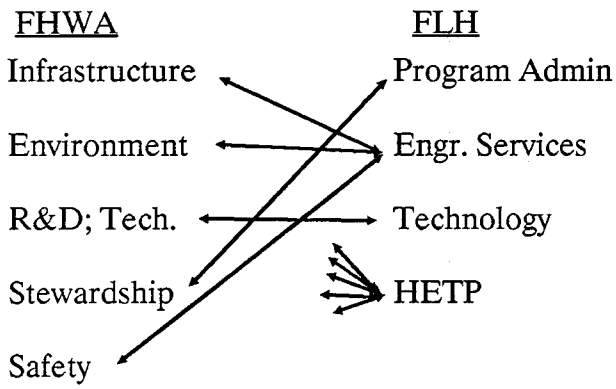
One might ask where the schematic shows that training is for all. It is part of "How we do our work." It is one of the cross-cutting strategies under Employee Involvement for TQM. It is stated, "Provide training and professional opportunities for employee development."

Strategic Business Plan Concept - Federal Lands Highway



FHWA 2000

This session covered the process for developing FHWA's Vision, Mission, Values, and Goals. The key elements of the Business Planning Process were reviewed and at several points, FHWA and FLH processes were linked. For example, the ties between FHWA and FLH missions were explained on a transparency depicted below:



We concluded that our planning efforts and those of FHWA are fully compatible. We are well on the way to a thorough and timely response to FHWA's need for a Unit Operating Plan (UOP) in July 1992.

We learned that the "Unit" of the UOP is Federal Lands Highway -- the entire organization. The purpose of the UOP is to:

- Set unit direction and provide a framework for change
- Provide a business plan of everything we do
- Span several years
- Describe our business and resource management
- Establish a commitment to improve
- Set up performance measures
- Provide accountability
- Drive the budget

This Unit Operating Plan will contain several parts:

- Executive Summary
- Strengths, Weaknesses, Opportunities, Threats (SWOT) Analysis
- Performance Assessment
- Unit Business Plan
- Information and/or Organizational Requirements
- Budget Impact
- Summary

The Unit Operating Plan will be derived from our Strategic Business Plan.

Intermodal Surface Transportation Efficiency Act (ISTEA)

Legislation now provides for increases in all FLH mission areas. From 1992 through 1997, authorizations provide for a program twice the size it was just last year. Congress wants us to wisely spend $2.6 billion over the next 6 years.

Some of our programs needed more attention before the increased funding. Our planning must include provision for the increased work. One of the ways will be to increase our use of architect/engineer firms. Another will be increased emphasis on process improvements.

Division Action Plans

The FLH Divisions each have plans which outline short-term and long-term actions and status. The plans vary in format and terminology but each serves its purpose for the division. Each division plan as well as the Diversity Action Plan is tied to the FLH vision and mission and directly supports the National vision and mission.

Key Indicators

Before discussing key indicators, the entire workshop group watched the video, "The Power of Vision" by Joel Barker. This high impact learning medium was followed by a review of TQM, several models and concepts such as SIPOC, PDCA, Johari window, empowerment model, and statistical tools.

Key indicators are the critical success factors or functions. These are the few activities without which the organization or an individual would fail or no longer be necessary.

In FLH, we will define our key indicators in terms of our four mission areas. We could just print up a bunch of ideas and call them our key indicators. The probability of them being meaningful would be nil. So, the process of coming up with them is almost as important as the key indicators themselves. We want everyone in FLH to understand how they came about and how they are meaningful to them individually. One of the steps in this process is to involve employees. At the workshop in Nashville we did just that.

The group broke into teams to develop key areas and indicators for our four mission elements. The intensity of effort is shown by the number of areas the groups developed -- 638 of them! Participants received an overview and summary of the items at the meeting, but the amount of information has led to a separate EQC meeting to further refine the overall FLH key indicators.

The EQC's first followup meeting was in Herndon, Virginia on March 25-27. At least one more meeting will be needed to complete this first effort. However, as an exclusive article for the FLH Quality News, the seventeen key indicators for FLH have been reported by Clara Conner, who co-facilitated the EQC meeting with consultant, Rob Stone.

Federal Lands has "Program Administration" as one of our four mission areas. We <u>must</u> administer these programs. The functions which must be performed to accomplish the basic mission include five things: 1) Stewardship of Title 23 and of allocation accounts; 2) Budgeting; 3) Legislation; 4) Program planning, and; 5) Executive direction. Each of these can be broken down into critical functions as well. Then measures can be assigned. Some of the measures have been drafted and are shown. Others will be developed over the next few months. The whole thing can be shown roughly as follows:

- **Program Administration**
  - Stewardship of Title 23 and Allocation Accounts
  - Budget
    - Formulation
    - Execution
  - Legislation
    - Formulation
    - Coordination
  - Program Planning
    - Needs Identification
    - Priorities
    - Program Resource Allocation
  - Executive Direction
- **Technology Development and Dissemination**
  - Identification
  - Evaluation and Development
  - Implementation in FLH
    - Pilot
    - Training
    - Develop Policy
  - Marketing
- **Training and Development of Engineers**
  - Highway Engineer Training Program (HETP)
  - Engineering Development Program (EDP) for FHWA
  - Non-FHWA training and development
  - Co-ops
- **Highway and Transportation Engineering Services**
  - Project Development
  - Procurement
  - Construction
  - Technical Services

The EQC also worked on measurements of these items. The key measurements are like the football stadium scoreboard. They will tell at a glance how we are doing as an agency. Ultimately, offices and individuals at all levels will have "yardsticks" of their own which tie in to these overall key measurements.

Measurements which exist or can be derived from data already being collected include:

- Project Development
  - Accuracy of estimates
  - Customer satisfaction
  - Timeliness of PS&E's
  - Engineering costs
- Program Planning
  - Quality of data
    - Percent updated
    - integral quality checks
- Highway Engineering Training Program
  - Reports from trainees
  - Percent of graduates who request FLH for a permanent assignment
  - Number of trainees trained
  - Market share
- Construction
  - Contract growth
  - Quality of construction
    - Traffic management in construction zones
    - Number of accidents in construction zones
    - Number of congressional complaints
  - Cost of quality related to engineering
    - Amount paid to contractors for prevention.
    - Percent of materials within specification

Plans call for a complete EQC-approved list of FLH-wide key indicators by summer.

Partnering

The entire group heard a presentation on partnering and its application to construction and beyond. Then, break-out teams reviewed the FLH draft policy on partnering and generated comments for consideration in finalizing the policy. Here is what Yolanda Montez of Central had to say,

"The success of an organization is measured by the quality of its product or service. The higher the quality, the more satisfied the customer. When people group together, there is collective strength and energy. The reasons for succeeding become strengthened and the result is an overwhelming desire and commitment to the success of the organization. The FLH Quality and Planning Workshop was such an experience. It provided a means to share successes, to learn from each other, and to come to focus on our mutual goals and planning efforts.

The FHWA 2000 efforts and how it all came together within our FLH Plan was of special interest to me. One topic which kept coming to the forefront throughout the FHWA 2000 initiative was the topic of partnering. My perception of partnering was that it was an agreement between FHWA and State agencies or contractors. What I learned was that partnering is applicable to all activities including administration and that it can be entered into at all levels of the FHWA organization. My next question was, 'What is it for and how is it used?'

The answer is that partnering is Conflict Resolution. The reason it works is that it resolves conflict before it happens. The benefit is that it saves time by averting delays, allowing schedules to be met and results in profits for all parties, cost savings, improved relationships, and qualtiy. It is a formal means for two parties to come to agreement on a mutual goal.

In order for partnerships to work there must exist trust, respect and communication between the participants. Everyone must want a good product. This is their primary mutual goal. There must be a problem escalation process that provides a means for the partners to resolve a problem that cannot be resolved at their level

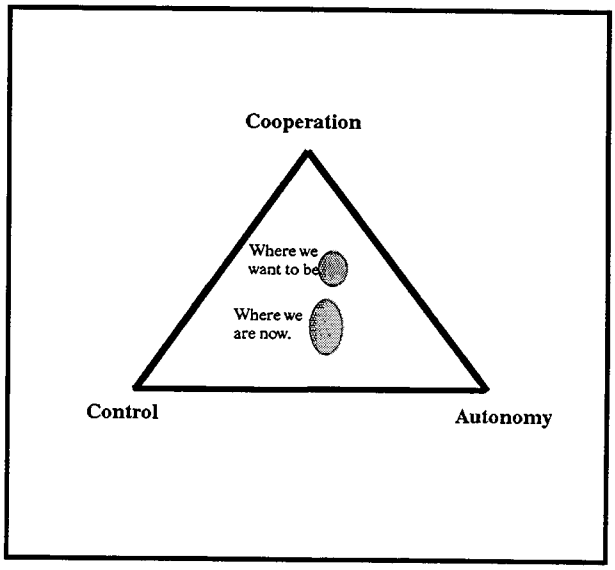
and that provides a means to elevate it to whatever level it takes to get it resolved. There must be progress evaluation and measurement. There must be executive involvement and participants must possess skills in problem solving. This is Total Quality Teamwork. As a team more will be accomplished. We will learn more and become more open minded. In a partnering atmosphere a mutual vision and a mutual responsibility to each other will be developed and both grow together.

I found myself thinking of how partnering could be used in other than construction contract partnering or program/project development partnering. The things that came to mind were such areas as interagency partnering with GSA for telephones, space, furniture, files management, procurement issues; or with Public Health Service on safety or occupational health. We could also partner with administrative contractors or our building manager for services or construction work. we could partner with educational institutes such as university for trainees, and cross training activities. We could partner with other FHWA Regional Offices for improved or new services in areas such as personnel support, legal services, EEO, and engineering training/expertise. These are examples of mutually benefitting potential partnering agreements.

In order for partnering to work, information and training needs to be provided to ALL employees on partnering, how it works, and how it can benefit all aspects of the organization. As a workshop participant, I learned a lot on this and other subject matters and about experiences of our other Division Offices' partnering efforts. There is quality and success to be gained through partnering in all aspects of FLH."

Organizational Development

The theory of organization design was presented to the workshop attendees. Then break-out teams assessed the current organization in terms of our orientation to cooperation, control, and autonomy. The consensus was that FLH as a whole is currently moderately decentralized and somewhat prone to dissention. In the eyes of the teams, the ideal organization for all FLH would be somewhat more decentralized and more cooperative. See the illustration.



Videotaping and Exhibits

All five FLH Divisions contributed to the quality-related exhibits. Teams and individuals provided creative displays of their accomplishments. Greg May of the Central Division videotaped interviews relating to many of the exhibits as part of his thorough taping of the entire workshop. We look forward to a compiled video which will permit us to share the week's experiences with everyone in FLH.

Notes from Nashville

by Rick Cushing, Central Division

The one thing that impacted me the most from the Nashville Workshop was a story told by one of the instructors which I'll relate as best as I can here and probably with a little embelishment.

There was a corporate executive officer of a company who had started his company on the road to Total Quality Mangement. He was curious how much time his three managers were spending on making quality part of the organization, so he called them into his office to talk with them.

"We've been working toward implementing TQM in our organization now for three years," he said to his managers, "and I want to find out how much each of you is spending in using our guiding principles. The first manager said, "Well, with the two hours per week we

have as a guide for teams to work on problems, it's about 5 percent of my time helping to guide our team as their sponsor." The second manager said, "We've got a couple of teams working in my department so my time is probably closer to 10 to 15 percent because one of the teams has a large project they're working on and it's taking quite a bit more time than anticipated." Now the third manager had this quizzical look on his face and finally said, "I don't understand the question. You seem to be asking me how I think. This is the way I think and the way my people think, so I guess I spend 100 percent of my time on implementing quality,"

That, to me, is where we are heading with TQM in FLH, when everyone realizes that this is not just "another program," When we all realize that it's not just the QAT's job to work on continual improvement but it's part of everyone's job to transform our organization toward total quality in everything we do. I was reminded of something Dr. W. Edwards Deming says in his book *Out of the Crisis* as his 14th point of the transformation of an organization to a quality organization: "Put everybody in the company to work to accomplish the transformation. The transformation is everybody's job." (p. 24)

It is a transformation in our way of thinking from using the old method of making a solution when there is a problem, which often creates new problems; to a new method of finding the cause of the problem, addressing that cause, and then seeing the problem disappear. It's a transformation that takes all of us to look at all the good things we've done and start looking at everything in a Total System approach. The workshop reenforced the concept I had learned during a Deming seminar that an organization needs to work as a Total System. In a system all the components are interdependent and each component works toward optimizing the aim (mission) of the system rather than just their own aim. In the system-oriented organization there is a focus on processes, how those processes fit into the whole organization (the system), and what the outcome is--the final product. Everyone in a system-oriented organization is focused on how their work can optimize the final product.

I also learned something very important about one of our mission statements, I was concerned that our mission statement of "training and development of engineers" was excluding a large portion of our organization (technicians and non-technical staff). Our mission statements, as was explained, are our external focus--"What we do" to accomplish our part of the National Goals and Objectives of FHWA because we are part of that larger system of the FHWA.

The Objectives of our TQM Policy on Quality is "How we do our work," through Continuous Improvement, Customer Satisfaction, and Employee Involvement. Our strategies to reach these objectives are the internal focus of FLH and one of these strategies is to "Provide training and professional opportunities for employee development." This is where we focus on developing everyone in the organization to their highest potential.

There were many other things I learned, but lastly and perhaps most importantly I learned that FLH's upper management truly does support TQM and doesn't just see it as "another program." There was a period of time when I thought that our upper management was getting into this mainly to get a quality award for the organization. That is not what was portrayed to me, so I believe that one day everyone will be using each of our guiding principles with the key elements of TQM and be able to say "this is the way I think."

Nashville Workshop Enlightens WFL Newcomers

by Gordon Clark, Jerry Johnson, Ray McClelland, Brad Neitzke, Harriett Peifer, Betty Roe, WFL

What did we learn?

The Nashville trip proved to be both insightful and eye opening in a number of different areas. For those of us at WFLHD who were "first timers", the learning process took on various forms. We would like to share some of our experiences and observations from this meeting.

Although change doesn't come easy, it is comforting to know that we are forming change as a team. This meeting emphasized those teamwork concepts of TQM. From past experiences, policy has always been directed from the top down. This meeting stressed the importance of ALL individuals of the team regardless of position within the organization. Within this forum, all ideas are equal and the final product is a consensus of all group members.

For this meeting, a group participants were given the task of formulating key indicators for the FLH mission statements. Key indicators can best be described as tools for measuring the progress toward a goal. Although the key indicator process is not totally complete, the input that was given was based on individual ideas and concerns. From this input, the key indicators will eventually be established.

From these group activities, information exchanged hands. People from different Divisions traded ideas, problems, and solutions. By interacting with our counterparts, we in WFLHD have a new resource to obtain information or discuss differences of operation.

What particular areas were especially applicable to our work?

For the first time since hearing about TQM, a number of the newcomers were able to see how much TQM has affected their work. Some supervisors are holding small group meetings to ask how their individual section can work more efficiently. This process is not as formal as the Nashville, but the results are still the same.

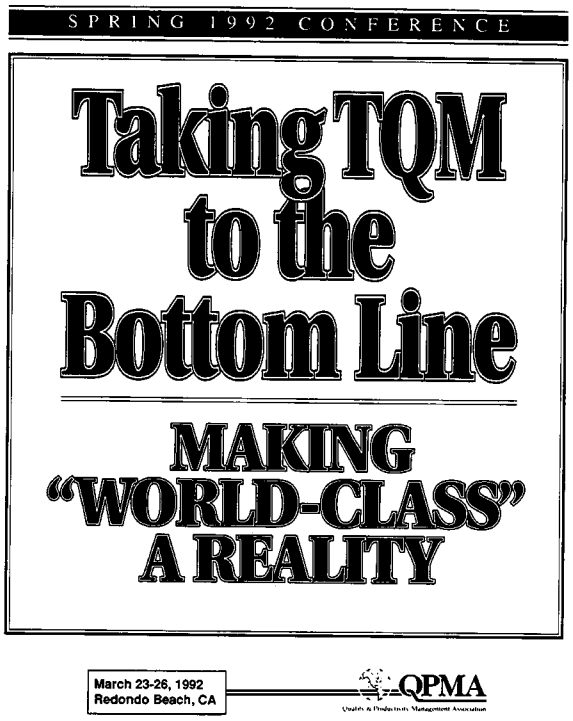
At the meeting the question was asked, "How much time should we spend on TQM?" We would like to think that TQM could be restricted to a portion of our work day. But in reality, it becomes a method of performing our jobs. When this method is repeated, TQM is then practiced in every aspect of our jobs, even if we don't realize it. It is this way of thinking that reinforces a positive attitude toward TQM. Through this attitude, TQM works and the benefits of teamwork, quick problem solving, and communication can be seen. This attitude can apply to all areas of work, and is not limited to formal groups formulated to solve a particular problem.

What value did the workshop have to FLH as an organization?

The greatest value that this meeting held for FLH was to demonstrate that all employees do count. The ideas that were shared by all the participants were important. Teamwork then could take over and help organize these ideas into useful information.

The meeting also helped to unify organizational needs. It provided an opportunity for people from different Divisions to come together. Between work and social activities, people could interact, share ideas, discuss issues affecting work, and develop friendships.

Finally, the meeting demonstrated that we still have a long way to go. Not everyone in our organization understands TQM and we need a method of conveying this philosophy to all levels of our organization. We still have some confusion regarding our vision, mission, and goals. But even though we have problems, we have a means by which we can solve them. As our TQM objectives state, employee involvement and continuous improvement will help us reach our goals and lead the agency into the future.



FLH Attends QPMA Conference

Redondo Beach, California, March 23-27, 1992

Federal Lands Highway employees from across the country attended the most recent Quality and Productivity Management Conference to learn the latest techniques in organizational improvement. The conference theme was, "Taking TQM to the Bottom Line: Making World-Class a Reality."

Eastern's Quality Coordinator, Clara Conner, could not make it to the conference. John Seabrook, Preliminary Design Squad Leader in Eastern took Clara's place. In addition, Jeff Rapol, Headquarter's Park Roads and Parkways Program Engineer, attended. He was the beneficiary of a "Nashville Notable" award from the early March FLH Quality and Planning Workshop. Tom Edick awarded Al Burden's Headquarters team a conference coupon for HFL-10's work on ISTEA provisions. The rest of the QCT attended as well. That is, Lonnie Moss, WFL; Pete Perros, HQ; Charmaine Farrar, CFL; and Mark Chatfield, HQ.

We heard Robert W. Galvin, the visionary Chairman of the Executive Committee, Motorola, Inc.; Dr. Ed Lawler of the University of Southern California; Roy Bauer of IBM Rochester; Kenneth Francis of McDonnell Douglas; Raymond Marlow of Marlow Industries; Paul Smith of Rockwell International.

Government leaders who gave presentations included, D. Brian Marson, Director of Service Quality for British Columbia (Canada); Keith Smith, Chief of Field Operations for California's Bureau of Automotive Repair; R. Barry Crook, Quality Officer for the City of Austin, Texas; Edward Schlar, Quality and Productivity Coordinator for the City of Phoenix, Arizona; and Theran C. Polivika, Director of the IRS Fresno Service Center. Consider these points the tip of the iceberg of information shared at the conference.

Charmaine Farrar, Central - The most facinating part of this conference to me was the discussion of the Malcolm Baldridge Quality Award Criteria. This award was initiated by the United States Department of Commerce in 1988 to recognize American companies that are doing an exceptional job providing quality services and products to their customers. Mark Graham Brown's presentation included "How to Determine Your Quality Quotient." This self-assessment questionnaire contains 76 questions such as, 'Are regular and frequent reviews done of quality plans and performance in all work units and with all levels of employees?' The survey provides for four levels of response ranging from 'Completely' to 'not at all.' Completing the self-assessment is a humbling experience. The self-assessment and the Malcolm Baldridge criteria are for private industry. I'm sure that is part of the reason the self-assessment indicates we have so far to go. The description which goes with our self-assessment score is, "You have a great deal of work to do to make quality part of the culture of your organization. The majority of American organizations probably fall into this category, however, so don't dismay."!

Pete Perros, Headquarters - I was particularly impressed by a striking and controversial message from Dr. Edward Lawler, Professor of Management and Organization at USC. He cited characteristics that leading organizations are beginning to adopt as including:

- **Weaving products and services around the needs of external customers.**
- **Eliminating layers of management.**
- **Rewarding employees based on job/skill growth and teamwork.**
- **Making fullest use of communication technology to inform and to accomplish work (e.g., "virtual teams" of people working together from different locations).**
- **Creating self-managed teams that derive their accountability from peer rather than supervisory pressure.**

A lot of what Dr. Lawler advocates can be lumped under the term **employee empowerment**, which QPMA defines as "enabling employees and managers to solve problems and make decisions that were traditionally reserved to higher levels of the organization."

John Seabrook, Eastern - I found it supporting to find such a national commitment from such a broad cross section of private and public sector companies and organizations. One understands the size of the movement under the title of Total Quality and I feel that it is important for us to see that this is not just an isolated attempt by Federal Highways. In addition, it is interesting to see the same struggles being faced by everyone in thir trek toward Total Quality. You hear universally, the cry or need for the commitment to the techniques of excellence starting from the top down. If this criteria is not met, then an organization can only achieve moderate successes and never total success.

One Speaker in particular from the IRS discussed the unique nature of Government service in that we cannot file chapter 11, we cannot lose our customer base, and inherently we do not like change. Given the above, it is easy to see the formidable barriers Federal Lands must overcome. This speaker also cautioned against the overuse of QATs. Not everything is best evaluated and solved by action teams.

Overall, the points that were discussed as key areas to improving our processes were:

- **Commitment from top management.**
- **Sound and committed leadership.**
- **Timely training on team problem solving techniques.**
- **Having the means to measure.**
- **Reward and recognitions systems for individuals and team accomplishments.**
- **TQM is not a program with a beginning and an end, but a system of continual improvement.**
- **The movement to total quality is not overnight. It takes time and commitment and will take less time with more commitment."**

Jeff Rapol, Headquarters - I have a vastly improved understanding of 'processes.' Everything I do can be reduced to series/parallels of processes. I learned about process flow diagrams and to identify what steps are driven by internal, intermediate, and external 'customers.' To improve the delivery of my program, I must know what processes immediately precede mine and which ones are affected by mine. I can make incremental improvements in those I own and hopefully share improvements with other program managers.

One of the speakers mentioned that hard work, commitment, and responsible management are necessary to sustain any improvements. We need to begin flowcharting FLH processes and identify who actually owns them.

Lonnie Moss, Western - The opportunity to hear Robert W. Galvin was especially unique. Mr. Galvin is Chairman of the Executive Committee of Motorola and a world leader in quality. He pointed out that quality is not a department, but it is a personal commitment. We must learn to speak about quality in the first person.

He said that the "cost of bad quality," is 15% to 40% of manufacturing sales. The cost is so significant that no organization can afford to ignore it. He told us that quality and productivity are kindred words -- improving quality automatically improves productivity. If you improve quality, you'll save money.

Similarly, Mr. Galvin said that if you teach the right things, it is impossible to spend too much money on up-front training. Motorola has concentrated their training in the areas of basic math (algebra), English, problem solving, statistical principles, and team skills, because this has given them the best return on their training dollars.

He told us that the companion of continuous improvement is to take giant strides by thinking in terms of improving by a factor of 50 or more. Pick out the toughest competitor to beat. Our expectation levels concerning quality must be extraordinary.

Mark Chatfield, Headquarters - I kept hearing the term, 'strategic planning.' It was encouraging to me to see that even Malcolm Baldridge Award winning organizations are still working to integrate their strategic planning and quality initiatives. The concept of what we do (mission related activities) and how we do it (quality related activities) must meld into a consistent, meaningful, and fully respected plan. I thought we were doing things all wrong since we are having trouble rolling out our plan. Now I appreciate the extraordinary difficulty of bringing this multi-dimensioned and rather abstract concept forward. Sure, we've had our starts and stops -- I chalk that up to continuous learning. We are not there. But I'm convinced we must quit thinking about reaching some final destination. It is patently correct for FLH, of all organizations, to love the journey. In this case, the system which gives a solid base for priority decision-making at all levels.

Recommended Reading

Libraries

Each Federal Lands Highway Division and Headquarters maintains a library of books, pamphlets, conference proceedings, and other materials related to quality. See your coordinator for information.

Books

The 7 Habits of Highly Effective People, Stephen R. Covey, Simon & Shuster, 1989.

The Team Handbook, Peter R. Sholtes, Joiner Associates, 1991.

Information Sources

Benchmarking Clearinghouse

The American Productivity & Quality Center (APQC) provides a clearinghouse for information about "best practices" for a large number of organizational processes. Phone Charlotte Scroggins of APQC at 713-685-4657 or FAX 713-681-5321.

Research Guide and Sourcebook

FLH has a copy of a TQM research guide and source book. Consultant services and other references are described. Call Mark Chatfield, 366-9492 or Pete Perros, 366-9493.

Miscellaneous

Brochure

TQM in FLH, an attractive brochure describes our Vision, Mission, Guiding Principles as well as our organization. Your FLH Division Office has copies.

Team Guidelines

The popular book, **Guidelines for Establishing and Operating Quality Action Teams** is available from the Division Quality Coordinator. Additional copies may be obtained by calling Headquarters, 366-9492.

Training Opportunities

Training in all aspects of TQM is available from many sources, internal and external. See your Quality Coordinator for ideas and to help you make arrangements.

Speech Material

Ever have the opportunity to speak on TQM? Your training and exposure in FLH to the most current and most job-satisfying ways to do your work, makes you a valuable resource to others. We can provide visual aids and written material to help in your preparation. Call 366-9492 or write: FLH Quality News, HFL-1, 400 7th St., S.W., Washington, D.C. 20590

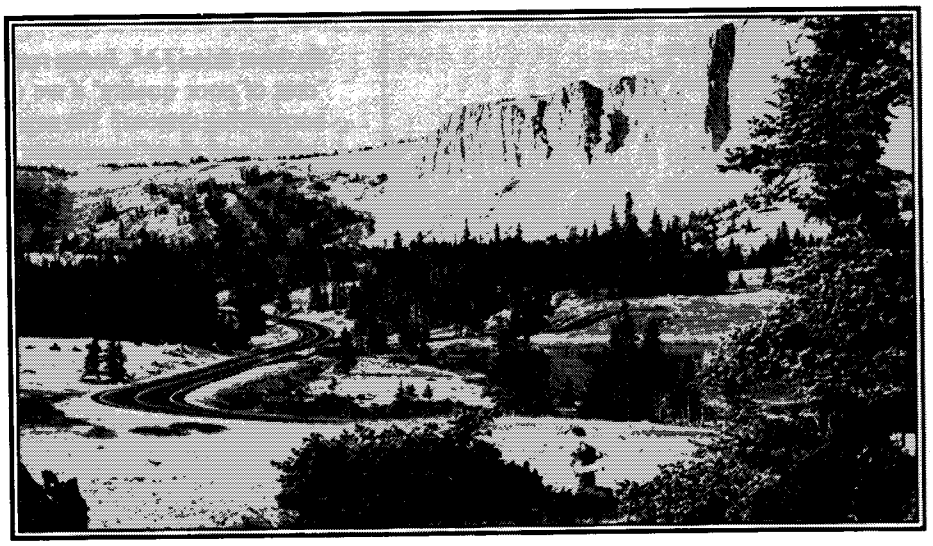
Volume 3 Issue 3 | Federal Lands Highway | Summer 1992

FLH QUALITY NEWS

U.S. Department of Transportation
Federal Highway Administration

400 7th St., S.W. | Washington, D.C. 20590 | (202)-366-9492

Total Cost of Quality



There are a number of new terms we need to be familiar with to pursue Total Quality Management. One of those is "Total Cost of Quality." Other terms which you may hear along the same lines are, "The Cost of Poor Quality," "Quality Costs," or just "Waste." This article is meant to clarify and explain the concept as it relates to FLH.

"Total" - The word total implies there are components which make up the whole. We will talk about six main components of the cost of quality. The sum of the six is the total cost of quality.

"Cost" - The word cost suggests resources which are expended. Those resources include money, people's effort, and time. There are also intangible costs, such as the cost of losing organization reputation for doing poor quality work which results in fewer requests from our customers. We will deal primarily with the tangible costs and will often translate time and people's effort into a dollar value. But we need to think of total costs as going beyond mere monetary expenditures.

"Quality" - Quality means meeting requirements based on customer needs.

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Publication No. FHWA-FLP 92-012

FLH QUALITY NEWS
Volume III, Issue 3
Summer 1992
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The FLH QUALITY NEWS is an official publication of the Federal Lands Highway Office, Federal Highway Administration, U.S. Department of Transportation. It is published several times a year for educational purposes to promote quality principles among FLH's and other organization's employees, managers, and supervisors.

Other topics may include information about programs, policies, projects, and administration. Contents of this publication may be used without permission. However, courtesy credit is appreciated.

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Minimize Accounting

Juran says, "Many companies have in fact undertaken expansion of the accounting system to quantify the 'quality costs.' All too often these programs have run into maddening delay because of the time required to define the accounting categories, argue out the classifications, and set up the data system. Still more delay has resulted from preoccupation with a level of accuracy not needed for managerial decision making. Consequently, enlarging the accounting system seldom led to quality improvement."

Use Estimates for Management Decisions

So, how does J.M. Juran recommend we come up with "cost of poor quality" if we don't create a bureaucratic accounting system? He says, "By estimates. This is the 'quick and dirty' approach. It involves only a modest amount of effort. It can in a few days or weeks provide an evaluation of the approximate amount of cost of poor quality and where this is concentrated." The point he makes is that we don't need a precise figure for a management decision to proceed on an improvement effort, all we need is to know there is a lot of waste in a particular process. Of course, if a particular area is of special importance, a longer-term and more accurate estimate may be needed -- but then only as necessary to make the needed management decision as to what, if anything, needs to be improved.

The Costs

Additional supplies, time, money, and personnel all increase "cost." Excesses beyond that are absolutely essential to accomplish the task are costs of quality. It applies to every area of endeavor. There is nothing perfectly efficient. There is, however, an optimal level of quality cost which represents the most efficient operation. For example, in FLH, we might say we have optimum total cost of quality if:

Our allocation memos were prepared within 2 hours of fund availability, every time without error and without checking.

Road inventory and bridge inspection/rating data were current, consistent, error free, and management exception reports were issued on schedule.

Our environmental documentation was done only once and was complete, accurate, and acceptable to all interested parties in a manner which caused no delay to the design, contract award, or construction.

Design plans were error-free and completed with no delay to planned construction.

Operating policies, procedures, and guides were current and resulted in total compliance.

Costs and delays from foundation failures in construction never exceeded 1% of the construction cost or time.

Construction quality levels were 1.0 or greater on every project while contract growth is kept below 1% and no contract claims are filed.

Components of the Total Cost of Quality

Prevention

Prevention is effort trying to make sure we provide the correct product or service.

- **For an allocation memo, the effort made to check available funds before writing the memo.**
- **For environmental documentation, the time and money it takes to train people and to identify what type of documentation is needed; environmental regulations, policies, and guides.**
- **For a potential foundation failure, the manuals, guides, training and work to make sure the design accommodates geologic conditions.**
- **For a set of plans; design guides, training on CADD equipment, assuring supplies are on hand, checking with the customer to make sure their criteria are met.**

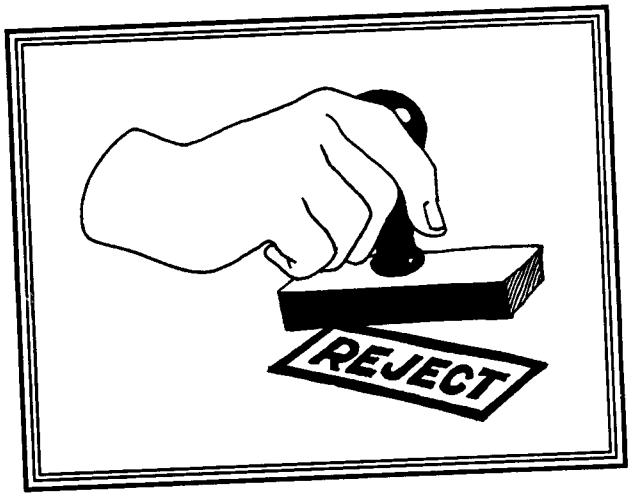
Internal Appraisal

Internal Appraisal is time and money used to see if we provided the correct product or service.

- **For an allocation memo, the time spent by supervisors reading the memo to make sure there are no errors.**
- **For environmental documentation, the effort made to check with others after we developed documentation.**
- **For the potential foundation failure, the time and money spent to monitor movement or groundwater accumulation.**
- **For a set of plans, the effort made to check accuracy, completeness, and constructability.**

External Appraisal

External Appraisal is time and money used by others to see if we provided the correct product or service.



- **For an allocation memo, the time spent by customers checking our allocation against what their records show it should be.**
- **For environmental documentation, clearinghouse, State, other Federal Agency checking.**
- **For a potential foundation failure, reviews by a contractor or another agency to see if our design is adequate.**
- **For a set of plans, reviews by the customer and other agencies prior to award.**

Internal Failure

Internal failure occurs when we don't provide the correct product or service. Examples:

- **An allocation memo written with a typographical or program errors requiring it to be rewritten.**
- **Environmental documentation which must be supplemented or rewritten.**
- **A poorly designed foundation which must be redisigned at added cost.**
- **A set of plans produced with errors which must be corrected with extra design cost during construction.**

External Failure

External failure is the costs associated with not seeing that we didn't provide the correct product or service.

- **For an allocation memo, the inability to advance a needed project because another project received too much funding.**
- **For environmental documentation, the cost to FLH associated with delays due to inadequate assessment -- including litigation.**
- **For a foundation failure, our cost to correct the problem during construction.**
- **For a set of plans, our extra time and effort to construct a project which was not properly designed.**

Indirect

Indirect quality cost is the price paid by the customer to fix our incorrect or incomplete product or service.

- **For an allocation memo, the increased maintenance cost, increased vehicle wear, decreased accessibility, and reduced recreational value due to projects not receiving allocations according to actual need.**
- **For environmental documentation, the environmental damage caused by incorrect, but approved and accepted, environmental mitigation.**
- **For a foundation failure, the cost to correct damage which did not show up until after the agency accepted the project.**
- **For a set of plans, the cost to the contractor of incomplete or incorrect plans. The added cost of constructed safety hazards, economic losses due to reduced property values, correction of design flaws which were accepted by the agency as part of the completed project. Any costs of litigation tied to improper design.**

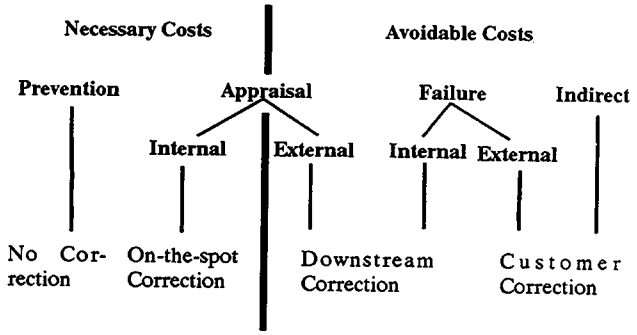
Example -- FLH Quality News preparation and publication process:

Category	Description	Estimated Annual Cost
Prevention		
FLH Training	Software updates	$ 200
FLH Testing		
FLH Inspecting	Editing articles	$ 200
Internal Appraisal		
FLH Checking	Reading drafts	$ 120
FLH Verifying	Checking proced.	$ 120
FLH Insp. output	Reading final copy	$ 120
External Appraisal		
HMS Checking	HMS Reading drafts	$ 80
Review of Final	Public Affairs review	$ 60
Getting sign-offs	Hand-carrying	$ 100
Internal Failure		
Rework	Re-doing drafts	$ 600
Lost time		
Extra supplies	Paper	$ 25
Extra equipment		
External Failure		
Handling complaints		
Penalty payments		
Litigation costs		
Indirect		
Non-FLH time	Review by FHWA	$ 80
Non-FLH cost		
Loss of credibility		
Estimated total cost of quality:		**$ 1,705**
Estimated product or service cost		$ 3,200
Ratio		53.3%

This means that, based on these estimates, more than half the total cost of this newsletter is expended just to make sure it is done correctly. The need to do it right the first time is evident.

What to do with the costs of quality

The six categories we identified can be shown as follows:



Total Cost of Quality:

The cost of quality increases geometrically as the development goes from initial to completed stages because the cost to correct become so great. A project with an estimated cost (X) of will escalate to many times its original cost if problems are not caught in time.

Cost

1X ——→ 10X ——→ 100X ——→

Initial Stages	Mid-way	Final
Planning	Re-dos	Litigation
Quality Assurance	Value Engineering	Contract Claim
Design Manual	Field Design change	Abandoned Project
Construction Manual	Const. change order	Collapsed Bridge
User Guide	Award slippage	Firing an Employee
Partnering	Re-advertise	Project shut down
QAT	Employee complaint	On-the-job fatality
Training	Replacing failed equipment	
Improved Communication	Rejecting materials on site	
Continuous Improvement	Correcting safety violation	
Customer Satisfaction		
Employee Involvement		
Regular equipment maint.		

FLH "Maps out" Its Future

Planning is the first way to minimize the cost of quality. The May 1992 FHWA Strategic Plan calls for FHWA's twenty Unit Managers/Office Directors to develop Unit Plans. The six Associate Administrators, nine Regional Administrators, the Federal Lands Highway Program Administrator, and four Staff Office Directors make up the total. The Federal Lands Highway Strategic Business Plan will be the basis of our Unit Plan.

The FLH people have been involved in the unfolding of long-range planning since its inception. The FLH has held two workshops dealing with strategic planning and has had the benefit of two external management reviews. These events, in combination with our other internal measurements using Quality Improvement Prototype evaluation criteria and our annual climate survey data, gave us a head start in our unit planning. In other words, we have done a lot over the past 3 years to map out what we want to accomplish. Our plan is a document which represents a process which guides us into the future. In terms of quality, our plan is our road map to make sure we all see our route and can anticipate what will happen next. With a good understanding of our direction, we are less prone to making the wrong turn or going down a road which leads nowhere. If we travel the right way the first time, we don't have to turn around and lose time and effort correcting ourselves.

The FHWA planning effort calls for Unit Plans to be developed in a format which is tied directly to our national goals. This permits compilation and budgeting decisions from a more consistent base. Our FLH Strategic Business Plan will be the same plan, formatted differently. Three years ago we established four mission areas (listed below) describing what we do. We also have a September 1991 formal policy on quality and a plan for implementing Total Quality Management (how we do what we do). The FLH Strategic Business Plan combines the earlier work on our mission area goals, objectives, and strategies with those we have set for Total Quality Management.

So, where is the plan? The Executive Quality Council (Tom Edick, Al Burden, Larry Smith, Gary Klinedinst, Jerry Budwig, and Jim Hall) have met several times to interpret the FHWA Strategic Plan. They have considered existing plans, employee input from national and division planning sessions, results of management reviews, internal and external priorities, and available resources. A draft Unit Plan has been developed and was submitted to FHWA on July 15. At the same time, our own FLH Strategic Business Plan was formatted as a draft for further review. The goal is to have the FY 93-95 plan finalized and printed by mid-September so it will be available FLH-wide at the beginning of October.

The FLH Strategic Business Plan will cover the four mission areas we are all familiar with.

- Program Administration,
- Highway Transportation and Engineering Services,
- Training and Development of Engineers,
- Development and Dissemination of Technology, and

Each of these business areas will be described by a goal statement and several objectives. The objectives will be amplified by a description of activities (strategies) which provide dates and assign responsibilities. If you are wondering what the plan will emphasize, look for program and project control systems such as the Program and Resource Management System (PRMS). We will be emphasizing information sharing. Architect and Engineering management will be emphasized -- top management has set a guide for FLH to do 30 percent of our engineering service work through A&E's. Customer feedback will be a key area and the existing plan for implementing TQM will be incorporated. Of course, we will be able to see the entire final plan when it is published.

The most current activity is the development of sub-unit plans. These are really our Division Action Plans. The EQC is assessing by questionaire how the planning process is working. We are learning as we go.

Deputy Administrator Endorses Quality Initiatives

The Federal Highway Administration was featured at the May 27-29 National Quality Conference in Washington, D.C. Federal Lands Highway provided an exhibit for the Department, exhibiting the trophy for winning the first Secretary's Award for Quality.

Clockwise from the lower left: Julia Perry, HFL-15; Clara Conner, HFL-15; Rosalee Wilson, FQI; Tom Edick, HFL-1; Jon Seymour, M-1; Al Burden, HFL-10; Gary Klinedinst, HFL-15; Larry Smith, FLH-20; E.Dean Carlson, HOA-3; Pete Perros, HFL-12; Photo by Mark Chatfield, HFL-1

A high-impact video, "TQM: A Federal Commitment to Quality," was premiered at a May 28th plenary session. The video is a brief overview of some of the attributes of TQM and showed a few things Federal agencies are doing. We were particularly pleased that Deputy Administrator, Gene McCormick narrated the Federal Highway segment. He stated as part of his narrative, "We're incorporating quality initiatives in everything we do; from the way we work together, to the way we serve our customers."

The producers had asked Federal Lands Highway to quickly provide examples of benchmarking and customer-oriented measurement. We were at a disadvantage because we readily admit our work in these areas is not where we would like it to be. However, it turns out that even our pioneering work is of significant interest to those who are just beginning to explore TQM. The examples we used included our climate survey which was based on benchmarking the Department of Defense internal surveys. We also identified the Cumberland Gap tunnel ventilation cost savings as a benchmarking effort based on European ventilation technology. For customer-oriented measurement, we used our work to specify pavement smoothness incentives/disencentives based on profilometer readings.

In thanking Gene McCormick for narrating the segment and Dean Carlson for attending the plenary session with us, our Program Administrator, Tom Edick, made the following points:

"One of the panelists and author, Martin Sandler, who is a co-author with Tom Peters of a book to be published in 1993 on excellence in the public sector, mentioned a very important point in his closing remarks. He said that the biggest problem they found in their four-year research work in writing their book was that the public agencies who are way out ahead of most of the private sector in doing quality management, taking risks, making commitments, and delivering excellent products and services, do not let their customers, the public they serve, know what is really going on. The public only hears about the bad things through news media stories. He did recognize that most public agencies, particularly the Federal Government is restricted in how far they can go in this area, but encouraged agencies to do more in educating their public. The video is an example of what Sandler was saying needed to be done.

I reflected on the FHWA 2000 Strategic Plan and one of our National goals on Public Awareness when Sandler made his point. The Federal Lands plan for implementing TQM has purposely focused on this very point. We have done a number of things along the lines mentioned by Sandler. We try to take every opportunity to work with our customers and partners, tell them about what is going on, get them involved, and attempt to bring them into the process of continuous improvement. We are members of and work closely with several quality associations and institutes as a means for networking, benchmarking, sharing and learning. While directed to FLH personnel, our FLH Quality News is one of several information and education tools which also gets wide distribution to our customers and the public, with good feedback reviews I might add." - signed, Tom Edick

PAULINA LAKE ROAD

RECONSTRUCTION

US Department of Transportation
Federal Highway Administration
Western Federal Lands Highway Division
610 East Fifth Street
Vancouver, Washington 98661-3893

Elte Inc. 1991 'Partner of the Year'

Monday, March 30, 1992

Portland Daily Journal of Commerce

The 1991 Partner of the Year Award from the Western Federal Lands Highway Division has been given to Elte Inc. The construction company from Boring received the award by being a part of a very successful partnering agreement in the $4.25 million Paulina/East Lake Road Federal Highway project in Central Oregon.

"Of all the partnering projects we did last year, the one with Elte was the best," says Glen Bedell, construction engineer for the Division. "Till Forman, the owner of the company, seemed a bit puzzled when we first started talking about putting together a formal partnering agreement. He had never been involved with one before. But after a while, he realized it was simply putting in writing exactly how he had done business for the past 45 years."

"Do whatever you think best. Whatever you do will be approved - but be careful not to undertake anything you cannot carry through."

- Lord Salisbury, British Foreign Secretary in the 19th century, responding to a request for advice from a consular agent in Zanzibar faced with mob violence and an endangered British community.

"We thought the partnering was a good thing for all involved," says Till. "It made us all conscious of the need to work together. We do feel like it was a continuation of how we have always worked around here."

"There was a real spirit of cooperation on the project," adds Wes Forman, superintendent on the project. "It was my first experience with partnering and a very good one."

After receiving a business degree from Oregon State University and serving in the 82nd Airborne during the World War II, Till started the company in 1946 with surplus heavy equipment from the army. Since then he has concentrated mainly on public projects involving rock, riprap, rock crushing, and difficult excavation.

"We have done a lot of flood control and dam work over the years for the Corps as well as public road and highway work," says Till. "We also used to do a lot of subcontracting work with Lord Bros. As a matter of fact, we joined AGC in the early 1960's when Bill Lord strongly suggested that we should."

The partnering project with the Division ended on a very high note when, on December 14, Elte had a party for all those that worked on the Paulina/East Lake Road project. The party was the idea of Marcia Forman.

"I just thought that after an 18-month long job we should give everyone a big thank you for work well done," says Marcia. "We had 40 to 50 people here from all over the State, and we all had a great time. A wife of one of the Division's engineers told me that that was the first time she had ever gotten a chance to meet one of the con-

tractors that worked with her husband on a project. She really appreciated it."

Congratulations to Elte for the Partner of the Year Award and continued success with the partnering process, be it formal or business as usual.

Coaching for Top Performance

Coaching for top performance is a three part management process:

1. Educating
   - Identify current skills
   - Select training method
2. Developing
   - Monitor performance
   - Use coaching guidelines
3. Counseling
   - Identify performance problems
   - Confront problems directly
   - Involve individuals in solutions

Basic Guidelines for Coaching for Top Performance:

- **Be a model -- set the foundation for trust and credibility**
- **Be where the game is played -- experience what is going on outside your office.**
- **Listen and observe -- it is the only way to learn what your team is doing.**
- **Think and speak success -- positive thinking and communication produces good energy.**
- **Build to strengths -- discover and support attributes instead of harping on weaknesses.**
- **Celebrate success -- hailing a job well done empowers/inspires individuals and their teams.**
- **Accept mistakes -- they could be used as learning tools.**
- **Communicate -- let your team know that they are an integral part of the organization.**

- **Focus on each team member separately -- respect his/her individuality or special needs.**
- **Provide consistent support and feedback -- be timely and specific.**

"Straight Talk -- Honest Work"

For those who think TQM is a new fad of some sort, Al Burden, Chief, Program Planning, Development, and Administration Division provided well-weathered copy of an old letter. The letter was written by his Dad, president of a roofing and siding contracting company, "Weather-Master" on March 22, 1940 -- 52 years ago.

To Our Patrons and Friends:

As the season for commencing operations in 1940 approaches, we reaffirm our purpose to continue to serve the building interests of this section with a comprehensive contracting and supply service, sound and practical from an engineering and an economic sense.

That means wide acquaintance with a large number of manufacturers; technical knowledge of processes and materials, both separately and in combination with others under the stresses of climate and use; and understanding attitude toward the special economic problems of each of you whom we may be privileged to serve.

We pledge our constant effort to keeping up to the minute on the latest materials, uses, practices, and reports of results. We shall strive to give you access to the widest range of materials, and painstaking diagnosis of conditions, sound planning, and careful workmanship.

We guarantee every product and every job to be as represented, and in general, all that would naturally be expected of it.

Our Motto: "Straight Talk--Honest Work"

Sincerely Yours,

Howard W. Burden

Partners for Quality Roads

by Cindy Story, WFL

In a joint effort to improve working relationships and communications between the Federal Highway Administration and the National Park Service, Western Federal Lands Highway Division and several parts of the National Park Service have entered into a partnering process. That process has been defined by the participants in the followig purpose statement:

"We are building a partnership in a way that promotes clear communication, defines and unites goals, utilizes skills and knowledge of all members so that we have an effective, timely, decision-making process to produce quality products as measured by our pride and satisfaction with our decision-making process and the learnings and information gathered in post-construction project evaluation."

A mutually selected consultant, Saltwater Institute, initiated a three-step procedure for the first of three contemplated phases of the partnership. The three steps included (1) information gathering by the consultant, (2) a group learning session, and (3) a group work session for applying skills to issues.

During the information gathering process, the consultants visited WFLHD, the Denver Service Center, Rocky Mountain Regional Office, Yellowstone National Park, Glacier National Park, and Grand Teton National Park to interview key participants. The objective of these visits was to become acquainted with all participants, understand goals, understand cultural barriers, and tour each entity's work site and several project locations.

The next step, a workshop held in Jackson, Wyoming, April 22-25, took more than 35 FHWA and NPS participants through a 4-day learning session. The learning process was to increase awareness and improve skills in communication, decision making, problem solving, and personal behavior. Along with the planned agenda, many of the participants socialized and have found new friends within the cooperating agency.

The third step, a workshop held in Missoula, Montana, May 27 and 28, covered identification of barriers and problem identification and action planning. At this meeting there were many issues noted along with their impacts. Channels to follow for resolution were determined for those of highest priority.

At this point the two agencies are working toward a mutual decision whether to continue with Phases 2 and 3 with the help of the consultant, or if they feel they have the knowledge and skills to continue the partnering process on their own.

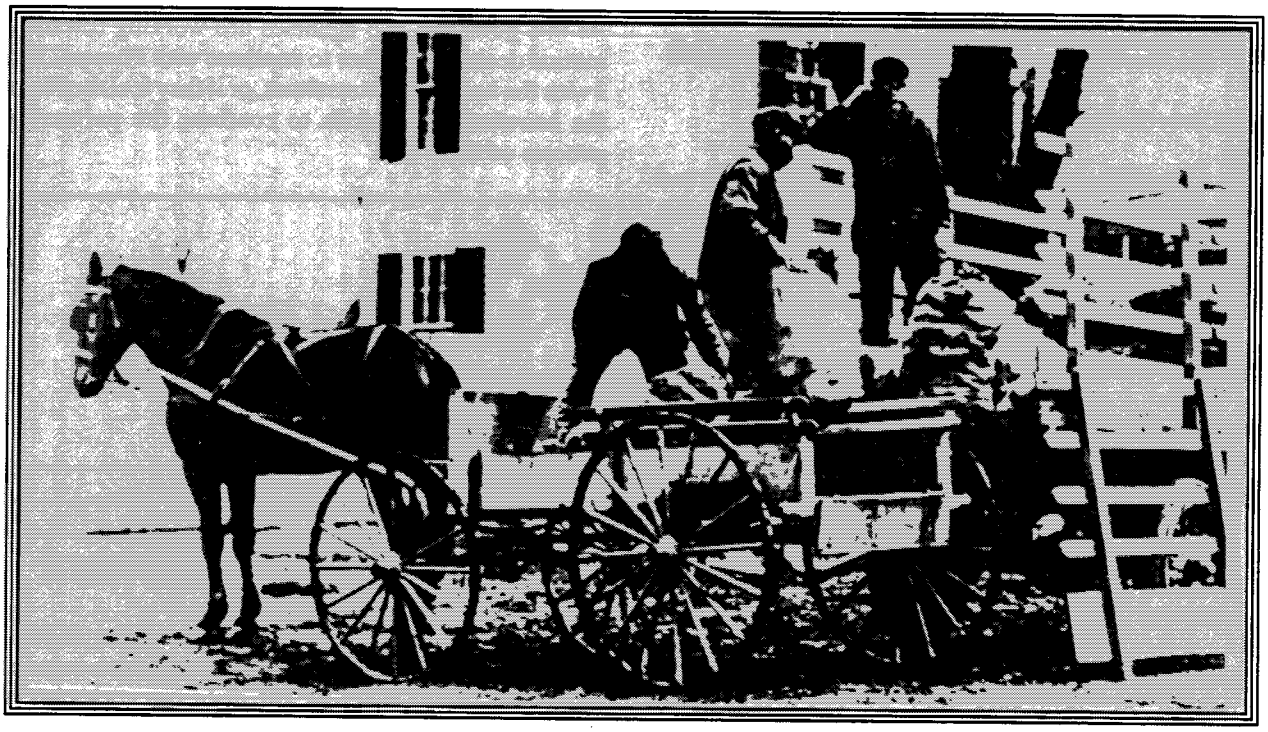
FEDERAL QUALITY INSTITUTE

Fourth QIP Assessment

This is the fourth year FLH has used the Federal Quality Institutes (FQI) "Quality Improvement Prototype" (QIP) criteria. The eight categories in the evaluation give us a measure of our overall progress in implementing Total Quality Management. This year we departed from previous methods used to complete the assessment by expanding the assessment to include four Division Quality Councils. This not only multiplied the input, but also assured every DQC member was thoroughly exposed to the criteria and standards we are trying to achieve.

Criteria	1990	1991	1992
Quality Environment	49%	63%	59%
Quality Planning	61	60	57
Employee Training	42	60	60
Quality Assurance	51	53	39
Employee Involvement	48	50	58
Customer Focus	25	44	39
Quality Measurement	23	41	33
Results	10	18	36
Average	**38.6**	**48.6**	**47.6**

Scoring is on the basis of 200 points. Some categories are weighted more heavily by FQI than others. For our internal purposes, we do not weigh the categories, but



merely look at the percentage of the possible which we believe we have achieved.

The three focus areas for now are quality assurance, quality measurement, and customer focus -- we should score higher in all these categories given our other areas of progress. It is not uncommon for many organizations who have implemented or are in the process of implementing quality management principles. There are studies and reports written on this which refer to "hitting the wall." It is at this critical juncture, that many organizations begin to falter and even fail in their quest to change. W. Edwards Deming speaks to this and offers a couple of principles to overcome such obstacles. He says to create constancy of purpose and institute leadership.

The first question to ask is how this came about in FLH with two years of good progress, and then ask ourselves what FLH is doing to overcome the apparent stagnation. When we look at the data and indicators to see which goal areas (criteria) have shown significant and continuous progress, we can point to TQM strategies and actions which we have taken that made the differences. Likewise, for those areas which have shown little progress or have reached a plateau, we see that our TQM plan has not emphasized certain strategies and actions which would be necessary to achieve the objectives as measured by the QIP criteria indicators. For these very reasons, we continue to measure our progress and use this information to help guide our organization in undertaking the most important strategies and correct actions.

What are our plans to go forward if we are to reach our October 1994 goal? The Executive Quality Council and the Division Quality Councils with the support of the Quality Coordination Team are in the process of updating the FLH Strategic Business Plan (unit plan) and the Division's Action Plans (sub-unit plans). The FLH Unit Plan covering the next 3 fiscal years will be completed in July and the Divisions' Action Plans are scheduled to be updated in September. For many years we have updated Division Action Plans. This year we will identify resources more by showing work years and contracted services more clearly. Some of the activities and actions which are planned have been sent already to each FLH employee in a memorandum report from the Federal Lands Highway Program Administrator.

The analogy is not completely on target, but we might think of an organization as an old horse-drawn cart going to market. Along the path toward the market are items to be taken to for sale: a crate of fresh carrots, a bushel of apples, a suckling pig, etc. -- the list is endless. Sitting on the seat at the front of the cart is the cart's owner. She [Don't let your old paradigms get in the way here.] gets a percentage of everything that is sold so she knows what to look for in the way of quality and only selects the best items. She want's to make sure the cart

is full when she gets to market, so she loads up at the first stop with six bales of hay. At the second stop there are 50 watermelons which are sure to sell. By the fifth stop, the cart is overflowing, but she can't pass up the ten 20 kilo sacks of potatoes which are tossed on top. Unnoticed, four dozen eggs are smashed three feet below. The gooey mess drips down on several hay bales. At the last stop there is just no room for the fine carrots which would have made a handsome profit.

The cart wheels bow out under pressure on the overloaded axle. On a level pathway, the cart creeks along. Down hill progress is hampered by overheated bearings. Then, on the last uphill climb to the market, the cart stalls. The exhausted horse lays down to rest. By the time the damaged merchandise is offloaded, the beast is fed, and the cart makes it to the top of the hill, and the load is transferred to the truck for final delivery, it is already afternoon and the customers have gone back home.

What is missing in the example? A thorough, up-to-date plan. If the cart owner doesn't know most of what is available to pick up, she can't efficiently load-up. If the horse or the cart are not in good condition, she can't expect to carry out the plan. If she doesn't know the weather is going to be bad, she can't plan for the fact that the customers may not even be there when the goods arrive.

The employees, of course, are represented by the horse. The cart is the total workload capacity -- all the work that can be theoretically done. The merchandise along the way represents all the projects the organization has the opportunity to take on. The cart owner is the manager who makes the decisions about what work is to be done.

FLH is an overloaded cart. Management has known this, our ASCE Peer Review told us. Our employees are telling us this. Most recently, the Booz-Allen, & Hamilton management review suggested the same thing. We have asked for additional personnel, but this will only help a little -- even if the request is granted.

Fortunately, we are well along the way to having a plan to deal with the situation. The plateau we are encountering is one which will be overcome by the immediate actions we are taking to complete and carry out our FLH Strategic Business Plan.

Leading Strategically

by Mark Chatfield

FHWA 2000's strategic planning work is being handled through two committees. The Strategic Management Committee (SMC) includes and is led by the highest officials of FHWA. The Business Planning Committee (BPC) is made up of a cross-section of employees and managers.

Manny Marks, Pennsylvania's Division Administrator, took over for Jim St. John, the Division Administrator from Wisconsin, as the chairman of the BPC. Manny is weaning us from "planning" to other, more comprehensive terms.

This doesn't mean we are to depreciate planning. Planning is as necessary as rain. Strategic planning is appropriate to distinguish an annual plan from a 5-year one. The FHWA Strategic Plan is comprehensive and long-term and responsive to the Department's National Transportation Policy. The FLH Strategic Business Plan will also be comprehensive and long-term -- as well as tied to the FHWA Plan.

Plans, however, usually end up in the form of a reasonably flashy document suitable for placing in a prominent place in an executive office. It is the use of the plan which makes the difference.

What dictates whether a plan is used? I suggest that our FLH Strategic Business Plan, when it is published, will only be used under the following circumstances -- all of which are controlled by top management:

- Every employee can find their work addressed in a way that is meaningful and stimulating to them.
- Managers can successfully use the document to decide what to work on and, more importantly, what <u>not</u> to work on.
- There is not an overwhelming number of emphasis areas. Maybe it's my age, but I can't keep track of more than a half-dozen or so.
- The plan shows that our agency is being led strategically by considering the resources available while setting forth work goals and objectives.

With only one BPC meeting under my belt, I can't say with finality, but my first reaction is that we indeed have strategic leadership in FHWA. That leadership is thinking well into the future, beyond this administration

and the next. It is considering the need to ensure a strategic planning process which will be useful for the organization throughout the 1990's and beyond.

FLH Suggestion Program Formally "Rolled-Out"

Ideas, anyone?

An idea in FLH could translate quickly into cash or other awards in our new suggestion program. The "Bridge to Improvement" was formally announced by memorandum from Program Administrator Tom Edick on May 19, 1992.

The new suggestion program is the product of the Suggestion Multi-Division Quality Action Team (MDQAT). Team members are Pete Perros, HFL-10; Terri Brannan, HFL-15; Ron Smith, HFL-15; LaVica Andre, HFL-16; Joe Clem, HFL-16; Lonnie Moss, HFL-17; and John Arriaga, HFL-17. Ruth Burley from FHWA's Office of Personnel and Training was the team's liaison with higher authorities.

Using the highway analogy, the "Bridge to Improvement" has a regular lane and an express lane, or short-cut. The regular lane is for formal, higher impact ideas. The short-cut lane is for smaller "everyday" improvements. Under the short-cut system, there are no eligibility limitations, turnaround in a few days, minimum documentation, and an award for every suggestion. Both systems will be run mostly in-house, by employees within the local office.

Each office has a designated coordinator and a committee to manage the program. A database is set up to keep track of each suggestion and how it is processed. The suggestor is kept informed all along the way and the team has made sure successful ideas will be shared with other FLH offices.

Recommended Reading

Libraries

Each Federal Lands Highway Division and Headquarters maintains a library of books, pamphlets, conference proceedings, and other materials related to quality. See your coordinator for information.

Books

The Fifth Discipline, "The Art & Practice of the Learning Organization," Peter M. Senge, Doubleday, 1990.

Service America, "Doing Business in the New Economy," Karl Albrecht - Ron Zemke, Dow Jones - Irwin, 1985.

Information Sources

Benchmarking Clearinghouse

The American Productivity & Quality Center (APQC) provides a clearinghouse for information about "best practices" for a large number of organizational processes. Phone Charlotte Scroggins of APQC at 713-685-4657 or FAX 713-681-5321.

Research Guide and Sourcebook

FLH has a copy of a TQM research guide and source book. Consultant services and other references are described. Call Mark Chatfield, 366-9492 or Pete Perros, 366-9493.

Miscellaneous

Brochure

TQM in FLH, an attractive brochure describes our Vision, Mission, Guiding Principles as well as our organization. Your FLH Division Office has copies.

Team Guidelines

The popular book, **Guidelines for Establishing and Operating Quality Action Teams** is available from the Division Quality Coordinator. Additional copies may be obtained by calling Headquarters, 366-9492.

Training Opportunities

Training in all aspects of TQM is available from many sources, internal and external. See your Quality Coordinator for ideas and to help you make arrangements.

Speech Material

Ever have the opportunity to speak on TQM? Your training and exposure in FLH to the most current and most job-satisfying ways to do your work, makes you a valuable resource to others. We can provide visual aids and written material to help in your preparation. Call 366-9492 or write: FLH Quality News, HFL-1, 400 7th St., S.W., Washington, D.C. 20590

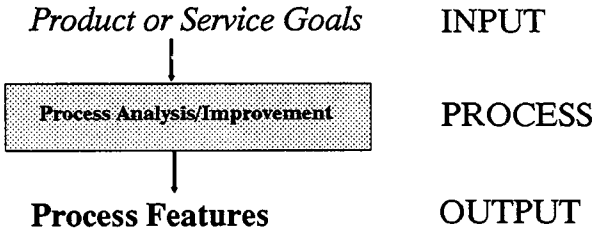
Volume IV Issue 1 | Federal Lands Highway | Winter 1993

FLH QUALITY NEWS

U.S. Department of Transportation
Federal Highway Administration

400 7th St., S.W. | Washington, D.C. 20590 | (202)-366-9492

Process Improvement Teams Initiated Across FLH



Federal Lands Highway is in a very unique and exciting position. It serves partner Federal and State agencies by providing tourists and other travelers with access to the most beautiful and significant sites the United States has to offer. We permit the public to "connect" with the environment. When the public experiences the wonders of the National Parks, National Forests, Indian lands, and other scenic and recreational lands, their sensitivity to protecting these vital resources is heightened. We directly participate in one of the Nation's positive balance of trade industries -- international tourism. The processes we use to provide environmentally enhancing roads and bridges which are safe and cost effective largely dictate our ability to meet customer needs.

David Osborne and Ted Gaebler in their book *Reinventing Government* say, "Governance is the process by which we collectively solve our problems and meet our society's needs. Government is the instrument we use. The instrument is outdated, and the process of reinvention has begun... We need an American *perestroika*." J.M. Juran says, "The end result of process design is a definition of the means to be used by the operating forces for meeting the product goals." He goes on to say, "the process designers should also be trained in the skills and tools associated with the planning process. These include understanding of the anatomy of processes, of the concept of process capability, and the nature and use of flow diagrams and spreadsheets."

In late November, FLH kicked off an organization-wide initiative to understand, document, and improve our work processes. The first part of the initiative was a 3-day training session in Atlanta. Bill Hayden, a consultant who specializes in quality for architect/engineer firms, presented review material and introduced concepts of process management to FLH leaders and managers. Following Bill's presentation, Dick Smith and Mike Hierl of the Pacesetter Group introduced a detailed and highly structured approach to process analysis. This technique, the "Process Map," is a step-by-step method which uses trained facilitators supplemented by computer software.

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Publication No. FHWA-FLP 93-002

U.S. Department of Transportation
Federal Highway Administration

FLH QUALITY NEWS
Volume IV, Issue 1
Winter 1993
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The FLH QUALITY NEWS is an official publication of the Federal Lands Highway Office, Federal Highway Administration, U.S. Department of Transportation. It is published several times a year for educational purposes to promote quality principles among FLH's and other organization's employees, managers, and supervisors.

Other topics may include information about programs, policies, projects, and administration. Contents of this publication may be used without permission. However, courtesy credit is appreciated.

Mention of private firms in no way constitutes an endorsement or recommendation. Communications should be submitted to: Editor, FLH QUALITY NEWS, Federal Lands Highway Office (HFL-1), Federal Highway Administration, 400 7th Street, S.W., Washington, D.C. 20590.

Background

A little pre-Atlanta workshop history is needed to let everyone know where we have been and where we are going. The FLH Strategic Business Plan shows this activity as a top program improvement priority emphasis for 1993 and 1994. All this emphasis, however, does not mean the FLH has been idle in process management and improvements over the years. In fact, one of the very first quality improvement steps started years ago was the initial flow charting of the FLH project development process and subsequent work by the several Management Unit Teams (MUT). In 1988, a quality assessment program was initiated to emphasize improvement of the total design process. The effort began with the development of the Project Development Design Manual (PDM). In 1989, the MUTs were assembled to develop the Program and Resource Management System (PRMS). PRMS is a project scheduling system that tracks the status of highway and bridge design projects by tracking completion status and resources for a sequence of activities defined for each project.

Goals of Process Management Teams

During the Atlanta workshop, the MUT's were replaced by Process Management Teams (PMT) to better align the teams with the objectives of process improvement. The PMT's have been established to define each process, complete the development of quality standards, and identify key measures. The goals of the PMT's are to improve processes, achieve continuous quality improvement, develop an action plan to address the process and map the processes/problems to enhance benchmarking opportunities. Following lessons learned from the initial efforts, the process improvements will be made accurate for all engineering and administrative systems.

Processes to be Analyzed

The eight teams or processes identified are: Location, Roadway Design, Environment, Geotechnical, Hydraulics, Bridge, Right-of-way and Utilities, and Contract Development. The teams will be comprised of subject experts at each division, a lead facilitator, a support facilitator, a process owner, suppliers to the activity, customers (both internal and external to the activity) and contract support from CH2M Hill and the Pacesetter Group. Initially, attention will be focused on two processes, Location and Design, with each Division working independently to evaluate the processes within each area.

Structured Analysis

The Pacesetter Group was chosen to lead the Federal Lands through the process assessment. Pacesetter developed an interactive PC software system identified as Process Map (PMAP) which is a highly structured process analysis tool to insure consistent PMT processes and documentation of each activity. The Process Management Teams will identify the inputs and outputs, verify the suppliers and customers, and determine customer expectations needed to establish quality attributes and quality criteria for the products and measurements for each activity. The project development activity process currently used in each Division will be identified and analyzed to determine the best process. After analysis and review of the existing processes, the PMT will make recommendations as to the most efficient process to be used for the particular activity. The PMT's recommendations will be the basis upon which the continuous process improvement will begin.

Time Frame

The PMAP technique is organized into several sessions which will include project planning, facilitator training, stakeholder identification and expectations, five PMT meetings, and eventually project evaluation. It is anticipated that PMT members will spend approximately 40 hours to complete the requirements through Session 3. This figure includes approximately 10 hours of "homework" between Sessions 1 and 2. The facilitators would be required to spend up to 50 hours for this same process. The homework would involve talking to customers, and developing and verifying the data required by the Process Map program. PMT Sessions 4 and 5 will use the action plan processes, quality standards, and measurements developed in Sessions 1 through 3 to begin the measurement process to help identify process improvement needs. This process improvement will be developed into a system for continuously evaluating key indicators to determine conformance to standards and customer expectations. Finally, performance measures will be maintained and monitored to permit analysis of the process to identify problems, develop permanent solutions, and make continuous improvements.

The PMT's are scheduled to begin work in January 1993 on the Location and Design processes at the division level. Sessions 1 through 5 are scheduled to be completed by the end of March 1993. Once the divisions have developed an action plan to address and map the processes they will work on developing an action plan at the multi-divisional level. This multi-divisional action plan will strive to achieve continuous quality improvement uniformity throughout all divisions within the Federal Lands Highway. This same sequence, of process identification and action plan formulation, will be repeated far each Project Development process through January, 1994, the scheduled completion date.

Product and service outputs are no better than the processes used to produce them.

"This is what TQM is all about."

The workshop in Atlanta generated new enthusiasm within the Federal Lands Highway Divisions to achieve and deliver a quality product to our clients. The highly structured approach used by the Pacesetter Group and the associated PMAP software system is a tangible object that we can use to analyze our process management and the processes. One reassuring factor is the commitment of the top management of the Federal Lands to empower the process management teams to make changes and strive for continuous improvement. Future articles will track the progress of the PMT's.

At the end of the training, the group was asked for their reactions. Overwhelmingly, participants found the techniques relevant to FLH and to their jobs. One comment was, "This is what TQM is all about. Let's get on with it."

With the help of the engineering firm, CH2M Hill and the Pacesetter Group, we are now aggressively going forward with process improvement teams in each Division and Headquarters. The teams will first be working in the project development aspects of the Division's work. The overall project leader is Tony Welch, Program Development Engineer in the Headquarters Engineering and Operations Division. Field Division contacts for the teams are: Greg Dolson, EFLHD, Charmaine Farrar, CFLHD, and Scott Rustay, WFLHD.

FLH Cultural Survey Results -- UP AGAIN!

Four years of cultural surveys in FLH show employee perceptions of quality are at a new high. More importantly, FLH has improved for the fourth year in a row. With a primary quality objective being continuous improvement, this is a significant indicator. When employees begin to think negatively, consider this -- many organizations don't even have a process to ask employees what they think, much less take positive action to improve.

Report Card

Cultural Survey Category (1989 Rating, 1992 Rating)	
Employees are Customer Focused (4.38, 5.06)	B+
Employee Morale and Positive Attitudes (3.87, 5.01)	B+
Social Environment Encourages Quality (4.64, 4.97)	B+
Employees Perceive High Value and Ethics (4.50, 4.91)	B+
Employees Aware of and Committed to Quality (4.39, 4.84)	B+
Employees Aware of our Mission (3.86, 4.69)	B
Teamwork and Cooperation Throughout (4.09, 4.68)	B
Teams and Employee Involvement (3.56, 4.67)	B
Supervisors are Quality Improvement Coaches (3.53, 4.45)	B
Employees Try to Plan Ahead (3.61, 4.32)	B-
Top Management Involved in Quality (3.73, 4.28)	B-
Getting Information Needed to do a Good Job (3.75, 4.24)	B-
Workloads Balanced and Tools Available (3.89, 4.19)	B-
Work Environment Consistent with Quality (3.81, 4.18)	B-
Creativity and Innovation is Encouraged (3.45, 4.18)	B-
Employees Aware of the Importance of Quality (3.14, 4.16)	B-
Managers Set Examples of Quality Performance (3.76, 4.13)	B-
Rewards and Recognition are Fair and Timely (3.50, 4.04)	C+
Supervisors Committed to Cont. Improvement (3.44, 3.96)	C+
Organization Structure Helps Focus on Quality (3.55, 3.79)	C+
Overall Quality Culture in FLH (3.82, 4.44)	B-

In 1989, when we began surveying the 20 categories of the FLH Culture, we scored a solid 3.8 on the scale of 1 to 6. The 3.8 was already above the mean of 3.5 and it showed we had a better than average quality culture to start with. If this had been a report card grade, it would have been a C+. Now, in 1992, we have an overall score of 4.4, almost a B -- we <u>are</u> making progress.

The "Report Card" shown above indicates FLH-wide scores from highest to lowest. Your Division Quality Coordinator has much more detailed information about scores for your office. Overall, employees are consistently improving. In fact, now that scores are in the upper ranges, FLH is refining its survey process. Soon a consultant will be under contract to help. It may not be evident to everyone, but valid cultural survey information is essential to a quality organization.

Managers at all levels use the results of the cultural survey to focus strategies in our quality planning process. For instance, the "Bridge to Improvement" suggestion program was a result of Executive Quality Council focus on an area for which cultural survey information showed a special need. As we progress, the inertia is more difficult to maintain and improvement opportunities become more challenging.

Our lowest scores in 1992 are about where our overall average was in 1992. However, they show a need for initiatives related to our organization structure, supervisors' commitment to continuous improvement (as opposed to fire-fighting), and innovative approaches to rewards and recognition.

1992 Construction Quality Survey

by Bill Cross, HFL-22

The constructed road or bridge is one of the primary products for Federal Lands Highway. In one sense, it is the "bottom line." Limited surveys to help determine the quality of completed construction have been conducted since 1991. Analysis of the data shows a number of trends.

Construction engineers received extremely high (4.6 out of 5.0) ratings from both contractors and cooperating agencies for their accessibility and for their quick response. Project aesthetics, quality, and workmanship all received ratings between 4.5 and 4.7. There were significant increases in quality ratings from contractors on questions which dealt with the responsiveness of the FLH engineer to contractor needs and problems. These increases seem to be attributable to our strong partnering program.

Cooperating agencies rated resolving problems to their satisfaction at 4.5. Contractors rated the same factor at 4.1. Both are higher than the mean and showed slight improvement from 1991 to 1992. Although they were improving and well above the mean, ratings on public

response to the project during construction show some room for improvement at 3.7 from cooperating agencies, and 3.9 from contractors.

The Operations Division has recognized that some of the questions in the survey are not completely meaningful to both contractors and client agency customers. As a result, the Quality Coordination Team and EFLHD are contracting for a professionally developed and administered survey for customers other than contractors. In addition, WFLHD is coordinating an evaluation and restructuring of the current questionnaire in order to direct it solely toward contractors. For both of these efforts, the surveys will not be limited to construction activities, but will elicit responses covering the full spectrum of FLH activities such as coordination, design, specifications, communication, responsiveness, contract administration, cost effectiveness, etc. It is an objective of both surveys to incorporate data already collected.

Environmental Scanning in Federal Lands Highway

The Federal Lands Highway top six executives make up the Executive Quality Council (EQC). The EQC reached a precedent-setting decision at their most recent meeting on November 11, 1992 in Dallas, Texas. Members of the EQC include (alphabetically): Jerry Budwig, HFL-16; Al Burden, HFL-10; Tom Edick, HFL-1; Jim Hall, HFL-17; Gary Klinedinst, HFL-15; and Larry Smith, HFL-20.

First, a little background on the EQC's decision making process. The team rotates responsibilities for the agenda and for moderating meetings. The EQC's decision making process was reviewed and documented at their last meeting. When an issue requires a decision by the team, they use a voting technique to attempt to reach consensus. When there is unanimous agreement, the decision is recorded and the team goes on to the next agenda item. If four or more members agree, the decision is considered passed but the team does not immediately move to the next agenda topic. First, they discuss the issue with those who do not fully agree and try to establish consensus. If fewer than four members agree, the issue is considered not passed. It is either dropped or modified for reconsideration.

Now to the decision itself. The Federal Highway Administration held an Environmental Scan (E-Scan) in mid-December. See the related article on page 12. The FHWA's E-Scan looked at broad, mostly external factors which will determine our long-range destiny. In a related activity, the EQC decided to conduct an internally focused FLH Environmental Scan to listen to employees. The EQC as a group by early February is to have been to each field division and to HQ to go over: 1. Where has FLH been. 2. Where is it going. 3. How will it get there (Plan). 4. How employees can help validate. The EQC's goals are to gather as many employees as possible, listen, answer questions, make notes for possible future planning initiatives.

This new activity in FLH is a direct result of top management's ongoing concern for and measurement of employee needs. Cultural survey results consistently reflect a need for better understanding of managers' and supervisors' commitment to quality principles. The FLH E-Scan should be another step in this direction.

Communication is Vital to TQM

by Charmaine Farrar, TQM Coordinator CFLHD

"Is TQM dead?... The TQM program is a good idea - just do something soon to let those employees who care about the organization know progress is being made...Unless management gets serious about making changes, supporting TQM, and listening to what employees are saying there is no point distributing survey after survey ..."

These are just a few of the comments Central received from their employees in response to a question asked at the end of this year's Cultural Assessment Survey about the state of the TQM program and the Central Division as a whole.

The Division Quality Council (DQC) reviewed the responses at their last meeting. They also asked why the response rate was lower than last year and, in particular, why was it relatively low for the Field Pool. After some discussion, they decided their first plan of action would be to have an All Employee Meeting. They concluded that extensive communication with respect to progress, results, goals, actions, and future plans will be vital to the success of TQM.

At the start of the All Employee Meeting, Jerry Budwig presented LaVica Andre with the "Secretary's Award for Excellence" and Dean Weisbeck with the

"Administrator's Award for Superior Achievement." Both of the recipients had already received their awards during a ceremony in Washington DC. In addition, the Wellness Committee Members received special nameplates to acknowledge their efforts in putting together the new wellness program.

After the awards ceremony and a short intermission, the employees reconvened to listen to some of the Division's accomplishments. The presentation began with a report on the results of the 1992 Cultural Survey Assessment. Results showed a marked improvement over the last few years. However, there was a decline in the response rate. One employee later questioned the validity of the results because of the lower response rate.

Next, the results of past efforts and progress the Central Division has made over the last several years was presented. One of the improvement areas included the installation of a new cost reporting system adapted from the Eastern Division that has enabled employees to access cost information for their projects in a variety of formats. The local area network has brought about improvements in communication through the use of the electronic mail feature. Changes in the phone systems in the Materials Lab and Project Development have improved productivity and provided a better link between customers and suppliers. The "Book" created by the Multi-Branch Quality Action Support team has created one source that employees can use to answer questions concerning correspondence. Some of the improvements the Field Pool Quality Action Team have implemented include: assisting in the development of a Field Pool Staffing Coordination Section, working with Administration to raise per diem rates and institute a Denver rental car and dual lodging approval, eliminating the procedure of maintaining telephone logs, developing a pre-bid conference process, and outlining a partnering process to be used by the Construction Branch.

The next segment of the meeting included presentations from employees about the ongoing quality improvement activities throughout Central. The following issues were presented:

- **Program Resource Management System final implementation strategies**
- **Advanced planning process**
- **Partnering**
- **Bridge's new Quality Assurance Plan**
- **Customer/Supplier Charts being developed by the Project Development QAT**
- **Reorganization of Project Development**
- **Materials Laboratory Automation Multi-Division QAT activities**
- **Materials Specifications and Acceptance Multi-Division QAT activities**
- **Career Development Plan developed by the Bridge QAT**
- **Management/Leadership Training Path development**
- **New employee orientations**
- **Training**
- **Bridge to Improvement Suggestion Program**
- **Wellness Program**

Following the presentations on the current quality improvement activities, Jim Roller gave an update on the FLH Strategic Planning Process. He went through each step of the process beginning with the *FHWA 2000 Strategic Plan* and ending with the *Central Action Plan*. Jim explained that the *FLH Sub Unit Plan*, developed by the Executive Quality Council in answer to the *FHWA 2000 Strategic Plan*, lists approximately 60 actions and strategies for the next three years. He stated that the *Central Action Plan* contains 11 of the highest priority actions items listed in the Sub Unit Plan. In his conclusion, he encouraged all employees to understand how they fit into the plan.

After Jim's presentation, the DQC sponsored an open forum where employees could ask questions pertaining to the meeting or other issues of concern. Although the DQC did not have enough time for this segment of the meeting, most employees liked the concept of being

able to ask questions. The entire meeting was videotaped so that the Field Pool personnel could view the meeting at a later time. Based on the success of the meeting, the DQC plans to sponsor similar events throughout the year to improve communication about our quality initiatives.

Quality Coordination Team Back to Full Strength

With the recent promotion of Clara Conner to Executive Officer in the Eastern Division, the Quality Coordination Team (QCT) was down to three members. Now, however, the team is back to full strength.

In December, James A. (Jim) Amenta, formerly a Geotechnical Engineer in Eastern, was promoted to TQM/PRMS Coordinator. Jim is from West Virginia -- and he continues to be from West Virginia -- he commutes from Harpers Ferry to the Sterling, Virginia office. Jim brings his recent field experience and perspective to the QCT at a time when FLH is making a special effort to move quality principles from philosophy to practical application at the everyday business working level.

The QCT's mission is to foster the transition of Federal Lands Highway into a world class quality engineering organization. The team receives direction and an annual budget from the Executive Quality Council to carry out quality related initiatives. The QCT measures its success by assessing the progress of FLH toward criteria published by the Federal Quality Institute. Progress is also measured through the annual FLH Cultural Survey of employees.

The FLH is making continuous improvement toward quality. With Jim's help and a fully functioning QCT, we will work through 1993 to make quality no longer a novelty, but an accepted way of business.

The Making of a TQM Coordinator

by Jim Amenta, EFL

The Quality Coordinator position is unique. It is a direct link to the Division Engineer. The TQM Coordinator is in many ways the voice of the employees to the staff officers as well as one with the goal of improved quality within the Division.

QCT MISSION: To Foster the Transition of Federal Lands Highway Into a World Class Quality engineering Organization.

The TQM coordinator is charged with carrying on the Quality Commitment that FLH had initiated more than three years earlier. It won't be easy following in the footsteps of the Eastern Division's *Ms. TQM*, Clara Conner, but it is a challenge and I seldom turn down a challenge.

After 16 years as a Geotechnical Engineer I felt that tunnel vision had set in and it was time for a career modification. I often force change in my life to keep from getting into a rut. Since I was ready for a change and the TQM Coordinator position became vacant, what a chance for me to make a drastic change.

A week after taking the position, a fellow employee gave me an article titled "What is a Quality Leader?" from the July 1992 issue of *Quality Progress*. Accompanying a copy of the article was a statement that it was amazing how well I fit the characteristics of a Total Quality Leader. Upon reading the article I was shocked to see how nearly all the characteristics listed modeled my career and personality. The following is a summary of the article.

While a total quality leader's attributes closely resemble those of a CEO, they are somewhat different. It is crucial that the CEO and the total quality leader be closely allied for success, according to Steve Coine, president of Stephen D. Coine & Associates, Inc., a management consulting firm in Boston, MA.

Coine Studied 14 quality leaders for 13 top U.S. companies to determine the specific charactaristics that make up a total quality leader.

According to the study, a total quality leader:

- **Exhibits perhaps the most polished use of power in corporate life, orchestrating situations to obtain desired results.**
- **Implements the CEO's vision.**
- **Exhibits a strong work ethic from an early age -- many have blue-collar backgrounds.**
- **Is rarely a late bloomer -- has clearly focused goals from an eariy age.**
- **Handles change and uncertainty well.**
- **Obtains success on the job without relation to level or quality of education, although nearly all have graduate degrees.**
- **Is strong-willed and knows how to get things done.**
- **Puts the good of the organization above personal gain,**
- **Empowers others to make change, unlike the CEO, who is empowered himself to make change.**
- **Can achieve success only if empowered by the CEO.**
- **Has a strong customer orientation and the ability to inspire the same attitude within the organizition.**
- **Is perhaps the only executive, except for the CEO, who requires such breadth and immense personal stability.**
- **Is a powerful networker.**
- **Can work with little real authority and a small staff, shunning bureaucracy and the anti-change attitude it generates.**
- **Operates through socialized power, inspiring change yet understanding that the CEO is the leader who will lead the charge.**

"The total quality leader is perhaps the only person within the organization who embodies consumer attitudes, and he is too often a voice crying in the wilderness," says Coine. "He must be a change agent, dealing effectively with People above and below on the corporate ladder, including those who say 'We can't do that, because we've never done it that way before,'"

Combining the FHWA and FLH Planning Strategies

by Charmaine Farrar, CFL

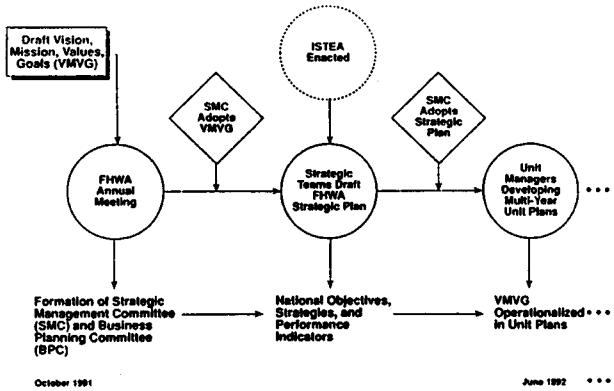
The FHWA Business Planning Process was initiated eighteen months ago to focus the direction of the Agency in alignment with a Vision for the twenty-first century. Initially, FHWA employees helped to develop and reach consensus on common Vision, Mission, and set of Values and Goals (VMVG) statements for the FHWA 2000 initiative. In May 1992, the FHWA Strategic Plan was published to translate the VMVG statements into actions. The Plan was developed to provide the overall objectives and strategies for the Agency. Unit Plans were then created beneath the umbrella of the Strategic Plan to identify the needs of the individual offices in the Agency.

Members of the Executive Quality Council (EQC) developed the Unit Plan for Federal Lands by consolidating several of our "on-going efforts." These included the FLH TQM Implementation Plan, Division Action Plans, and information gathered from the annual FLH Quality and Planning Workshop. After several meetings, the EQC prioritized the strategies and actions necessary to fulfill our mission and produced the FLH Unit Plan using the FHWA Strategic Plan format. The FLH Unit Plan was then reformatted into a Strategic Business Plan that categorizes the same strategies and actions into the areas of our mission.

After the EQC developed the FLH Unit Plan and Strategic Business Plan, each of the Divisions and the Headquarters Office went to work developing sub-unit Action Plans. The Plans address the current and planned work requirements within each office under the objectives listed in the FLH Unit Plan. Our three Division offices and Headquarters used somewhat different procedures to form their individual Action Plans.

Eastern

The Eastern Division Quality Council (EDQC) began its procedures by reviewing a copy of the FLH Strategic Business Plan and then sorting out the activities that would involve the Division. During several days of meetings held in their new "training facility", the EDQC members discussed what activities and how much effort would be needed to accomplish the FLH Strategic Business Plan action items. Each EDQC member then



developed action items and work efforts for their individual offices. These plans were then combined into the Eastern Division's Action Plan and delivered to the EQC for their review.

Western

To begin their process, the Western Division Quality Council (WDQC) members met offsite to discuss how they would approach the planning effort. They analyzed the FLH Strategic Plan and evaluated how the objectives and strategies applied to their own Division. Some of the objectives and strategies were reworded to better define their Division's goals. In addition, other activities were added to cover work effort not included in the Plan. After the meeting, the individual offices reviewed their initial plan and calculated the number of work weeks that they would need to complete the actions. These individual plans were then rolled back into the final draft Western Division Action Plan and sent to the EQC for discussion.

A Western employee who worked on the plan said the process enabled them to "focus on the whole picture rather than just the glitzy" or to show us "what happens to our work load when we are requested to participate in other functions such as Multi-Division Quality Action Teams". He said the strategic planning procedure helped the WDQC members and branch managers to "realize how big and how much work there really is."

Central

The Central Division began by analyzing how to combine the recent FLH planning efforts with the original objective established last November -- to advance the projects in the CFLHD program. Consideration was also given to the recommendations made by the Booz-Allen, Hamilton Management review team and to the areas of the FLH mission: program administration, highway and transportation engineering services, training and development of engineers, and development and dissemination of technology. They then diagrammed the relationships between their original objective, the Booz-Allen recommendations, and the recent planning initiatives.

After the Central Division established the relationships, they were able to identify the critical strategies and actions that were necessary to accomplish FLH Strategic Business Plan. These were then compiled into a document with a format that all employees could understand. The Strategic Business Plan was then reviewed by each of the Key Personnel (all members of our DQC) to calculate the actions and work effort that would be necessary to work on and complete the activities in the plan. Finally, the individual plans were combined into an overall Central Division Action Plan and sent to the EQC.

Headquarters Divisions

Al Burden and Larry Smith from the Headquarters Office took similar approaches in developing Action Plans for their offices. Both of the managers held initial meetings with their staff to discuss what would be needed to accomplish the FLH Strategic Business Plan. After the first meeting, Al developed a "straw" or draft Action Plan. He then met again with his staff to receive feedback and to help finalize the plan. Larry assigned action items to individual members of his staff and met with them to review the actions that would be necessary to fulfill the FLH Strategic Business Plan. Both offices added activities that were not covered in the original Business Plan. The other Division offices also found it necessary to add day-to-day work activities that were not included in the Strategic Plan.

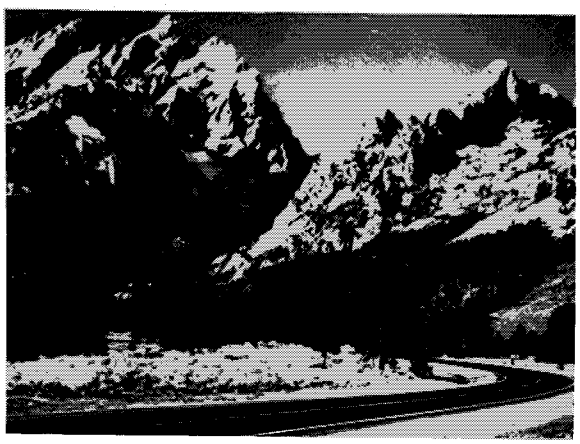
The EQC members reviewed the Divisions' Action Plans during their September 21st meeting, and again at their November meeting. Program Administrator, Tom Edick approved the plans in December. However, these plans are "living" documents and will be updated according to changes in our work priorities and availability of resources. In the near future, all employees will become more familiar with the current FLH planning strategies and will understand more clearly where they fit into the future of FHWA 2000 initiative.

Western Holds Facilitator Training Session

Vancouver, Washington was the site for the latest Facilitator Training in FLH. The demand for facilitators is driven by team activity as well as attrition. It's not that facilitation is that hard on people, but trained facilitators move and become burned-out if there are not enough available.

The solution to this is a process for continued facilitator training. This is done through annual training plans which reflect input from quality councils. The latest plan called for facilitator training in Western.

Lonnie Moss coordinated the training which involved about 25 participants. Students were mostly from the Western Division but there were people from all Divisions and Headquarters. Lois Hart of Leadership Dynamics presented the course in her usual kind and professional manner.



Excellence in Highway Design 1992 Awards

Thomas O. Edick, Federal Lands Highway Program Administrator, presented two Excellence in Highway Design awards to Western Federal Lands Highway Division and the National Park Service at an all employee meeting in Vancouver, Washington, on November 24, 1992.

The Federal highway Administration promotes excellence in the planning, design, and develpment of safe, functional, and environmentally sensitive highways. Every two years, FHWA conducts a contest to recognize those highway projects that represent this commitment to excellence. In 1992, there were over 200 entries.

The Federal Highway Administration's Western Federal Lands Highway Division and the National Park Service's Denver Service Center received the two Awards of Merit in the category, "Highway Improvements on Public Lands." The Teton Park Road in the Grand Teton National Park and the Soleduck Valley Road in the Olympic National Park were the two project winners.

Partnering Awards

Glen Bedell, Construction Engineer; Tom Hildreth, Construction Operations Engineer; and Jerry Bruyer, Project Engineer, from WFLHD along with Ken Raithel, Manager Central Team; and Jack Gordon, Field Liaison-Glacier, from the National Park Service received partnering awards. The awards recognize their efforts in establishing a "Partnering" program. The program involves WFLHD, the Central Team of the Denver Sercice Center, the NPS Rocky Mountain Region, and Yellowstone and Glacier National Parks.

James N. Hall and Homer Rouse presented the awards at the November 23-24, 1992 NPS/WFLHD Program Meeting.

FHWA Human Resources Task Force

The Federal Highway Administration last year formed a Human Resources Task Force. The group is addressing some of the objectives and strategies set out in the FHWA Strategic Plan. The Federal Lands Highway 1992 representative to the task force was Stewart L. Ozier, Senior Financial Specialist, EFL.

The Human Resources Task Force has rotating membership. The new FLH representative for 1993 is Darrell Jay Harding, Senior Material Engineering Technician, CFL. Darrell's responsibilities include communicating the task force's objectives and progress to FLH employees. He will also be providing the task force with FLH strategies and actions which relate to human resources.

Headquarters Quality Council

The Headquarters Quality Council (HQC) meets monthly to address quality initiatives in Headquarters. With only 16 people in Headquarters, everyone is involved in quality. Membership on the HQC changes periodically. As of December, the HQC was Al Burden, Mark Chatfield, Paul Los, Sharon Minnich, Pete Perros, Larry Smith, and Tony Welch. Two teams have completed improvement initiatives in the past year.

One team concentrated on correspondence. After studying, measuring, and meeting with customers, the Correspondence Quality Action Team (CorQAT) wrote an FLH Correspondence Manual. The team then sent the three Headquarters secretaries to each field office to share their work. Currently the team is preparing a chapter on metrication. Contact Sharon Minnich, FTS 366-9494 for more information.

The second Headquarters team addressed the problem of tracking action items. Headquarters managers traditionally tracked their own action items. The team looked into ways of tracking action items in a more consistent and comprehensive way. Their solution has been implemented as a computerized Action Log. The team is now looking into structuring the process to operate on the new Local Area Network.

The HQC uses the FLH Strategic Plan for guidance. We are now looking for a Headquarters centered process management initiative. The HQC intends to help managers gain experience in understanding and bettering our major operating processes.

Letter to the Editor

Editor, FLH Quality News

Dear Ed:

I read the article in the current issue about how 99.9% defect free isn't good enough and only zero defects should do. The article talked about dropped babies and lost mail and I had to agree with the writer.

But then I opened up an advance copy of Federal Land's new state-of-the-art FP-92 Standard Specifications and was appalled to see where, right there on page 30 it says that 8 percent defects is plenty good for Federal Lands and that we'll take up to 22 percent defects (at no reduction in payment) as long as it doesn't go on too long.

What gives!? Shouldn't the bozos who wrote the FP be made to turn in their "Commitment to Excellence" coffee mugs or attend a quality seminar or something? I don't see how we can talk about zero defects out of one side of our mouths, and the same old "close enough for highway work" out of the other.

Signed, Perplexed

Dear Perplexed:

You've stumbled onto a real quality dilemma. Actually the answer is that the zero defects argument doesn't exactly work in all situations. I know that this sounds like heresy, and I hope it doesn't get back to Jeff Dwar or Dewar, however he spells his name. The argument for zero defects only works when there is an identifiable cost associated

with the defect - like being sued by the mother of the dropped baby. If there is a cost associated with the defect, then there is also a savings associated with preventing it. It is also nice if the savings are greater than the cost of preventing the defect in the first place, but quality experts say that is always true - so who are we to question?

The FP-92 acceptance plan is written for stuff like aggregate and asphalt production. Try as we might, we've never been able to show convincingly that aggregates with zero percent defects last any longer or perform any better than aggregates with 5 percent defects, or even more in some cases. So we allow these "nominal" defects to maintain our consistency with the rest of the highway building industry, which in turn maintains our competitiveness in purchasing the materials we need for our projects, which from the taxpayers viewpoint is a very important quality parameter.

Editor

[NOTE: The writer was kind enough to include the response as well as the letter. He probably thought he was providing this incognito. However, a reliable source has identified the author as Bill Cross. As Bill more than adequately points out, quality is not fanciness or luxury or perfection - it is **knowing and meeting customer needs.** -ed.]

FLH Workshop to Focus on Strategic Planning

by Lonnie Moss, WFL

In each of the past two years, FLH has held an annual workshop designed to pull the elements of the organization together to explore better ways to incorporate quality into all of our work. The workshops have, for many attendees, been an excellent opportunity to meet and exchange ideas with people from the other FLH offices. The first of these workshops was held in San Antonio in the spring of 1991. The second was in Nashville in late February 1992. Attendance at these sessions included about 60 employees from all levels of FLH. Until schedules became too crowded, preliminary plans were to hold a third workshop in Seattle in early March 1993.

This year a single topic workshop will concentrate on the FLH Strategic Business Plan for FY 1994 and beyond. That meeting will be held in Lakewood, Colorado during the week of March 22, 1993. Attendees will include the Executive Quality Council members, their primary staff, and the Quality Coordination Team.

FLH Strategic Planning Workshop
Lakewood, Colorado

March 22 - 1p.m. to 4:30 p.m.

Review of 1993 action plans and presentation of EQC strategic business emphasis.

March 23 - 8 a.m. to 4:30 p.m.

Breakout teams to prioritize strategic emphasis and establish objectives and schedules.

March 24 - 8 a.m. to noon

Continue breakout teams and summarize.

FHWA Environmental Scanning

by Mark Chatfield

Fredericksburg, Virginia, December 17, 1992

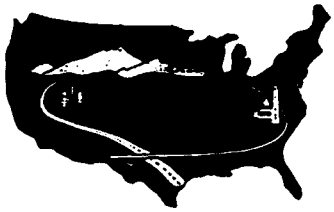
The Federal Highway Administration's unique "Environmental Scan" (E-Scan) was held over the past three days in Fredericksburg, Virginia. Over 50 top managers and other employees participated. Federal Lands was represented by Tom Edick, Program Administrator; Tom Hildreth, Construction Operations Engineer, WFL; and Shoukry Elnahal, Bridge Design Squad Leader, EFL. The purpose of the E-Scan for FHWA was to identify trends and issues most critical to FHWA mission delivery and to analyze how issues and trends may affect FHWA's strategic direction.

The session used "Cluster Groups" to mix participants in five subject areas to identify critical change factors. The cluster groups were reminiscent of high school. Each room kept the same subject, only the participants changed. Subsequent groups built upon the work of the previous ones. At the end, a team of representatives from the subject areas met to consolidate results. Then the results were brought forward to the entire group.

Critical change factors which topped the list related to ISTEA and legislation; Balancing mobility, economy,

Volume IV Issue 2 Federal Lands Highway Spring 1993

FLH QUALITY NEWS



U.S. Department of Transportation
Federal Highway Administration

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FLH Listens!

Federal Lands Highway Program Administrator, Thomas O. Edick, last November directed FLH-wide listening sessions as part of the Executive Quality Council's plan to implement Total Quality Management. Over 450 employees participated in one of eight 4-hour listening sessions in a 2-week period ending February 3, 1993. The sessions were held on-site and were organized completely in-house to minimize cost. The purpose of the sessions was for employees to listen to the FLH leadership and for the leaders to listen to employees.

The Division Engineers, Gary Klinedinst, Jerry Budwig, and Jim Hall; The Program Administrator, Tom Edick; Headquarters Division Chiefs, Al Burden and Larry Smith; and the Quality Coordinator, Mark Chatfield reported directly to employees on overall FLH programs and resources, of organization initiatives, the strategic business planning process, the Division's link to the FLH-wide plan, and areas of importance for the future. They listened and responded to employees in terms of what is working well and where there are opportunities for improvement.

One of the employees who came forward to report from a break-out group was surprised when she stepped up on the platform to speak. She had glanced to her right to acknowledge the entire power structure of FLH and she thought there was something wrong. Every one of the EQC members was head-down, busily preparing to take notes. They were definitely listening. Employee input from the listening sessions was summarized and quickly fed back to employees in the form of a flyer.

The most obvious and immediate result of the sessions was that employees mentioned Customers/clients, Training, and Employees as the top three areas in both the Best Practices list and the Change Opportunities list. The message at first seems conflicting. Employees are saying they recognize FLH has done an excellent job, but there is still room for improvement. The expectations of employees has no doubt increased along with the improvements which have been made.

In the Customers/clients area, people seem to acknowledge the orientation of FLH to its customers but also recognize there are key customers who are not yet

"We have developed a habit of top-down management. What we need to do is create a habit of teamwork."

-Rodney Slater, Federal Highway Administrator designate, discussing Total Quality Management with Federal Lands Highway officials on April 20, 1993.

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Publication No. FHWA-FLP 93-005

FLH QUALITY NEWS
Volume IV, Issue 2
Spring 1993
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The FLH QUALITY NEWS is an official publication of the Federal Lands Highway Office, Federal Highway Administration, U.S. Department of Transportation. It is published several times a year for educational purposes to promote quality principles among FLH's and other organization's employees, managers, and supervisors.

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adequately considered in our work. All FLH personnel responded strongly in this area.

For Training, employees understand the effort, funding, and time which FLH has dedicated to assuring people learn. However, the training is not always focused and is often too general. The FLH is not training people sufficiently for their day-to-day work in many cases. There also is a need to focus individual training plans on job skill requirements and career plans. There seemed to be a good system for scheduling people for training in "soft" areas like communications, time management, personnel issues, and quality theory. The organization needs to do more to make sure people understand how to do their job before they are asked to do it. The concept of cross-training and development assignments was favored. Training issues were pointed out by every field Division almost equally; it was not a major point at the Headquarters session.

The area of Employees received attention in all field Divisions. The substance of the comments was spread over many issues. Some of the more prevalent are outlined here. The FLH employees have high morale and believe the organization has top-notch people. They appreciate being asked about their perceptions in surveys and meetings. Empowerment was brought up in several sessions. Construction people believe their ability to meet customer requirements is hampered by the need for them to obtain higher level approval before responding to certain kinds of project changes. Project mobility requirements place hardships on many field employees. Whether it is work schedules, resources, or assigning people, employees asked for more operating decision authority. Employees expressed some frustration in having the desire to do quality work but not the time to do it. There was some indication that employees would like less project "micro-management" and more management concentration on providing resources.

The EQC met the day after the last listening session to consider what they had heard and how to incorporate it into the FLH Strategic Business Plan for 1994-96. The meeting was professionally facilitated by Ms. Rosemary Booth of the Volpe National Transportation Systems Center. The EQC considered the status of the 1993 FLH Strategic Business Plan, the Critical Change Factors from the FHWA's Environmental Scan, employees' input from the listening sessions, and their own priorities for the organization. Using the framework of the Total Quality Management Implementation Plan, the EQC developed seven "focus" areas for further consideration at the FLH Strategic Planning Workshop on March 22-24, 1993.

The workshop was a single issue planning meeting. It was not like the multi-faceted Quality and Planning sessions held the past two years in San Antonio and Nashville. It was a high-level strategy meeting which was part of the FLH's strategic planning process. As pointed out throughout the listening sessions and during our last few years involved with planning, we simply had to be more strategic in our thinking and focus on the critical few. Top leaders took all they have heard from employees, stakeholders, and customers and put it into a plan for FLH-wide continuous improvement.

Immediately after the workshop, the Executive Quality Council met to refine the strategies for 1994 - 96. Although further considerations are being given to assure certain parts of the Engineering Technicians Task Force recommendations are implemented, the draft strategic plan calls for nine focus areas. These are the top change areas or new directions the FLH leadership has identified for the future.

- Fourth quarter contract awards.
- Financial management.
- Standardization/Uniformity.
- Business processes.
- Training.
- Procurement.
- Technology development and transfer.
- Metric conversion.
- Total quality leadership/customer measurement.

These are the change initiatives. The everyday work of FLH is described in our four mission areas. In FY 1993, Divisions attempted to centrally report progress on about 100 separate work areas which were tied to the FY '93 FLH Strategic Business Plan. In an effort to simplify reporting, the EQC will track just the nine focus areas and related objectives plus the four mission areas and related objectives. Although not yet finalized, this is expected to include about 40 items. During the May - July period, each FLH Division will plan its entire workload to include new initiatives and priorities.

After the FLH's experience, E. Dean Carlson, Federal Highway Administration's Executive Director recently encouraged all Regional Administrators, Staff Office Directors to hold listening sessions. The purpose being to involve employees in the task of identifying the changes that should be made to the current National Strategic Plan. Specifically, FHWA is updating the objectives and strategies to strengthen focus and accountability. See the related article on page 4.

CARING
FOR THE LAND
AND SERVING
PEOPLE

Reinventing Government, USDA Forest Service Style

The work at the FLH Strategic Planning Workshop was supplemented by an evening training opportunity on Monday, March 22. The site was the 240 Union Restaurant just down the street from the Sheraton in Lakewood, Colorado.

The 43 workshop participants had the privilege to hear Mr. Karl H. Mettke speak. Karl is a Management Analyst and creativity consultant for the USDA Forest Service, Eastern Region in Milwaukee. FLH found out about Karl through his writings. He has authored several articles in various national management publications. His primary subject was organizational change in his region. By completely rethinking the ingrained systems which were in place in the mid-1980's, the Eastern Region has transformed into a highly productive, downsized regional office.

They have moved in 8 years from a hierarchical, functional, process-oriented organization to an empowered, integrated, results-oriented organization. They did not do this with studies of the existing staffing or organization. Parts of the region reorganized almost overnight from a functional staff structure to an in-

tegrated team concept. By 1995, the entire Region is to be organized into five teams formed around the goals of the Regional Strategic Plan. They will have institutionalized shared leadership, diffused the hierarchy, and spread authority among Regional Office people.

Only by knowing the boundaries, can FLH move confidently to organizational improvement. Karl showed FLH leaders the boundaries of organizational innovation in the public sector.

FHWA Develops Strategic Objectives

The Federal Highway Administration's unit managers met at the Headquarters office on April 7 and 8, 1993. The purpose of the meeting was to develop clearer objectives for the next FHWA Strategic Plan due out in May. The existing eleven National Goals were used as the base. National Objectives and National Strategies were on the table for development.

The meeting was structured and carried out in a manner consistent with the teamwork concepts unit managers are espousing. Three facilitated breakout groups made up of selected unit managers met to discuss and reach consensus on a set of objectives for goals assigned to them.

A unit manager was designated "goal owner" for each of the goals. The goal owner provided the breakout group with the background and a draft set of objectives and strategies which had been put together by the original authors. These authors were the available co-conveners from last year's planning process. The goal owners also summed up the work of the breakout session to the entire group.

The highlight of the meeting was the gracious visit by Federal Highway Administrator designate, Rodney Slater. Mr. Slater interrupted his schedule to attend much of the two-day meeting. He was particularly interested in the special effort FHWA has made to listen to employees before planning the agency's future.

One of the messages employees made clear was that the first strategic plan needed to be more meaningful to them. FHWA is listening and is on the road to a simpler strategic planning process and a plan which is understandable at all levels of the organization.

Rewarding Quality

Quality is becoming an overused word often used without an understanding of what it really means. As long as everyone understands quality means conformance to standards based on customer needs, and as long as people understand how to achieve it, it doesn't matter how often we use the word. The definition is simple enough. We have learned, however, that application and achievement are not so simple. We also have learned that one of the keys to continuous improvement is to reward quality when it happens. Lately in Federal Lands Highway quality has been happening regularly. Rewards related to quality have been numerous and meaningful. The article which follows describes FLH's recipients of the FHWA's "Strive for Excellence" awards. Not all of the rewards, however, have been through structured rewards and recognition programs.

For instance, Bill Parsons in the Western Division has been active in a local professional group. Last Fall he was on a panel representing FLH to a regional conference of the Society for Marketing Professional Services. Bill advanced the vision of Federal Lands Highway - "To be recognized as the best highway engineering organization through people dedicated to excellence." The letter from the Society to him said, "You did a wonderful job and were an excellent representative of the Federal Highway Administration."

Also in the Western Division, Gary Hunter's Teton Park Roads presentation continues to receive praise. Bob Deatrick, Kansas' Division Administrator, wrote Jim Hall, WFL's Division Engineer --

"Thank you very much for allowing Gary Hunter to make his Teton Park Roads presentation during the Kansas Transportation Engineering Conference on March 31. Gary did an exceptional job in representing FHWA, the work that you performed in the Park and the fact that engineers are sensitive to our environment.

We in the Division received numerous positive comments concerning his presentation. We need more public relation initiatives such as this from throughout FHWA. As an added plus for Kansas State University he got the K-State Union officials to wire the Forum auditorium for stereo."

The March 8, 1993 issue of *Engineering News Record* featured a full-page photo of Eastern Federal Lands' Natchez Trace Parkway segmental arch bridge near Franklin, Tennessee. The article recognizes several quality principles which have been purposely advanced in Federal Lands Highway's Total Quality Management initiative. Principles applied in the project included formal partnering, technical innovation, employee empowerment, customer satisfaction, and cost savings without sacrificing quality.

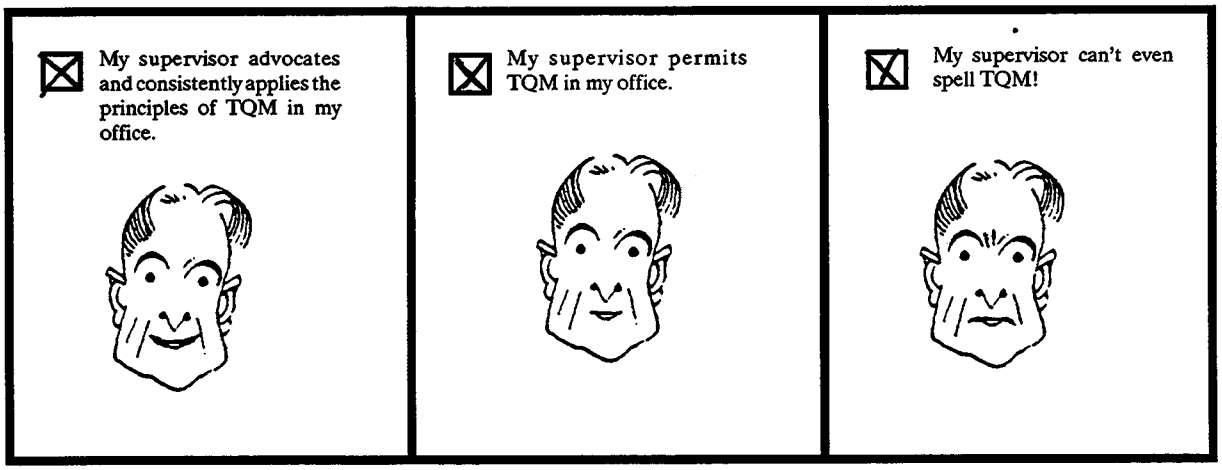
In the Eastern Division, Deborah Ranciato just turned over the editing responsibility of the Eastern Edition newsletter. Debbie recently received a personal note from Program Administrator, Tom Edick. It said, "You have left an excellent example and process in place for continued publication and improvement."

Speaking of the Eastern Division and Eastern Edition, the last issue had an editorial by Julia Perry titled, "Doorway to Dissension." The editorial dealt with her experiences as sponsor of the Quality of Life Quality Action Team and the controversy which developed over a door decorating contest. She found herself mediating issues, hurt feelings, harassment, and questions about operating policies. Julia handled this "hot potato" with the wisdom of Solomon. The result was a learning experience for the Division about representative government, freedom of speech, separation of church and state, diversity, and the need for procedures.

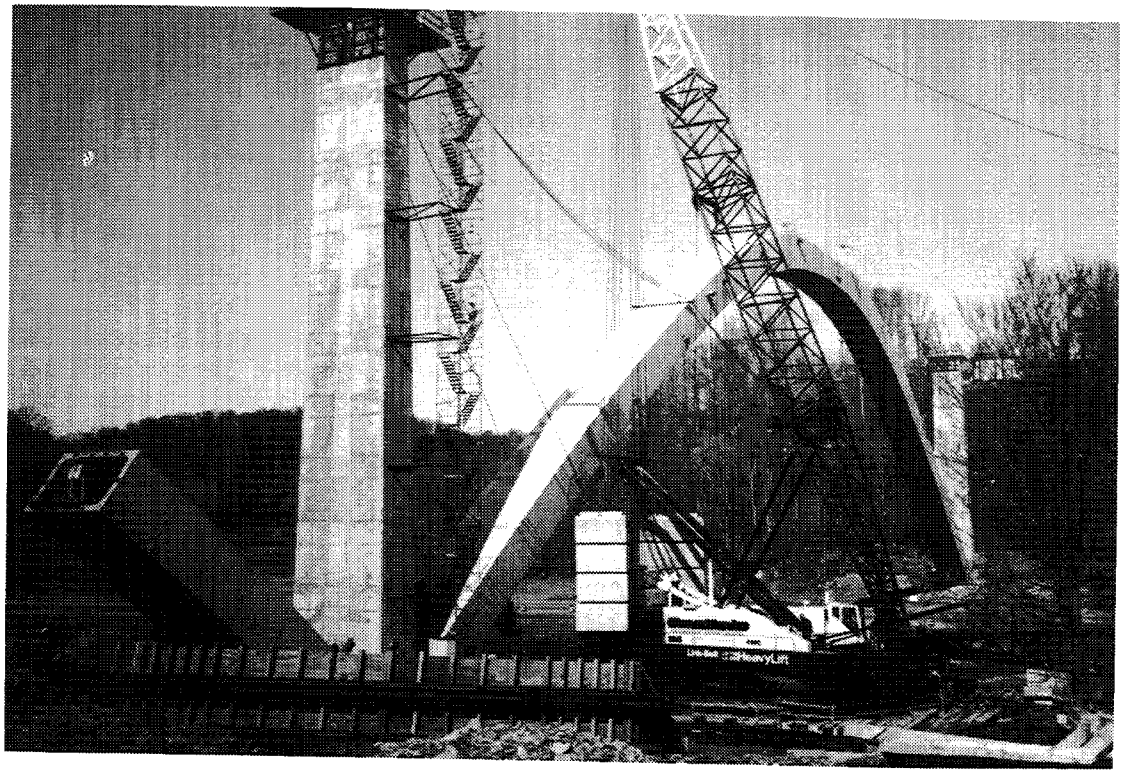
The Central Division for years has been recognized worldwide through a particular ambassador of quality. John Penzien is a low key, highly professional engineer who knows as much as anyone about computer aided design and drafting as it applies to achieving quality highway work. He travels worldwide representing FLH. Where ever he goes, he shows that Federal Lands Highway is a world-class highway engineering organization.

Another quality individual in the Central Division is Kay Hymas. With nearly half of the Federal lands within the Central Division, there is seldom a shortage work of Emergency Relief on Federally Owned (ERFO) roads. It seems as though half of California and Arizona have washed away in the past couple of months with record rainfall and flooding. Kay consistently manages the ERFO efforts in Central to assure vital surface transportation access to Federal lands throughout the Central Division. The result of this is that Federal agencies, our primary partners, see the example of the quality FLH fosters.

Al Burden, the Headquarters Program Planning, Development, and Administration Division Chief is known throughout the Federal Highway Administration, at the Department of Transportation, and among Congressional circles for his command and knowledge of FLH programs and funding. Budget and accounting officials as well as program engineers from many parts



"Many state highway agencies probably would hesitate to try such an innovative undertaking on a federal-aid project, fearing bureaucratic rejection. Perhaps this project flashes a green light for ingenuity." -- *Engineering News Record, March 8, 1993*



Eastern Federal Lands' Natchez Trace Parkway Segmental Arch Bridge - Franklin, Tennessee

of government rely on Al for his advice and perspective. His high level of dedication is matched by the high quality of work he does. As a "point of contact," Al exemplifies what Federal service is all about. As a top executive of Federal Lands Highway, he demonstrates the enthusiasm and dedication for which the organization is known.

Consider Cindy Cooksey of Headquarters and the job she did facilitating for the Office of Motor Carriers last fall. Then there was Greg Dewey of Western and Tom Fennessy of Eastern who gave up Thanksgiving holidays to travel to Mexico for presentations on geotechnical and low volume resurfacing. Foreign governments often seek our expertise, like the Saudi assistance coordinated by Larry Smith and Bill Cross. These are just examples. The Strive for Excellence Awards (next article) are more examples. The list could go on almost indefinitely. The point is, quality is what is important -- conformance to standards based on customer needs. It is not "TQM," or "QAT's" or "DQC's" in themselves, it is our people going beyond what is expected to assist those who look to FLH for help. There is no special program to reward this kind of quality, but it is the essence of the FLH organization.

Strive for Excellence Award Winners

by Pete Perros, Headquarters

It was Jerry Hawkins'(FHWA's Director, Office of Personnel and Training) July 28, 1992 memorandum which introduced the agency's "Strive for Excellence" awards program. The program is consistent with the FHWA's Strategic Plan and is designed to promote and recognize employee accomplishments in the areas of Teamwork, Customer Service, and Innovation. FLH's nominations were submitted in September. Awards were received and formally presented by Program Administrator, Tom Edick at the March 22-24 Planning Workshop in Lakewood, Colorado. The awards --

Team Player -- FP Working/Steering Group

David Green
Melvin Ackers
Alan Teikari
Ronald Davis
Shari Brandt

Innovation -- MDQAT on Suggestions/Awards/Recognition "Bridge to Improvement" Suggestion System

Peter Perros
LaVica Andre
John Arriaga
Terri Miller
Joseph Clem
Lonnie Moss
Ron Smith

Quality Service -- FLH Correspondence QAT

Sharon Minnich
Alfred Logie
Gloria McGraw
Curtis Page
Deena Purvis
Larry Smith

Eastern Federal Lands Highway Division

Team Player -- Promoting/Fostering Spirit of Teamwork (as TQM Coordinator)

Clara Conner

Innovation -- EDDIE Award

Eastern Federal Lands Division

Quality Service -- Partnering

Eastern Federal Lands Division

Central Federal Lands Highway Division

Team Player -- Project Development QAT

Anne Brunick
Richard Coco
Richard Cushing
Frank Grannis
Sebastian Guzman
John Huyer
Brenda Povsha
Joseph Trujillo

Innovation -- Admin. Branch QAT
(improved office supply ordering system)

Judy Trancreti
Brad Hammond
Anne Hinshaw
Fred Krok
Garry May
Phil Whitener
Carolyn Hutchinson

Quality Service -- 20+ years as dedicated, knowledgeable, and effective project staff technician on many significant and demanding construction projects

Samuel Montoya

Western Federal Lands Highway Division

Team Player -- Pioneering Application of Partnering Concept in Interagency Programs (NPS)

Glen Bedell
Dave Brown
Jerry Bruyer
Elaine Davis
Marty Flores
David Heckman
Tom Hildreth
George Humphreys
Gary Hunter
Wade Johnson
Harold Kelsh
Glenn Kutzera
Grant Linsey
Margaret Moen
Scott Rustay
Max Ulver

Innovation -- Developed and Implemented Innovative Program to Improve WFLHD Communications

Gina Sexton

Quality Service -- Work on and multimedia description of Teton Park Road project, showing how highway work can be done without harm to environment

Gary Hunter

Lab Automation Team Briefing

by Larry Smith

The Executive Quality Council on March 26th received an excellent briefing on the accomplishments and status of the Lab Automation Quality Action Team. Three Central Division representatives of the Multi-Division Quality Action Team Bob Welch, Pat Keenan, and John Penzien, covered the activities with a presentation and demonstration that brought the EQC up-to-date on its progress. It was reassuring to note that since the November meeting, considerable progress has been made; especially that documentation of the programming is being brought up with other work.

"A gram of application of TQM is worth a kilogram of philosophy of TQM."

The briefing was certainly appreciated. It helped to bring fuller understanding to the EQC of the benefits to be derived from this project. The continued team work should assure that progress remains positive and beneficial to Federal Lands Highway.

PRINCIPLE CENTERED LEADERSHIP

by Jim Schroeder, Purchasing Agent, CFLHD

On March 22, 1993, several employees from Central Federal Lands Highway Division and I attended an afternoon seminar on Principle Centered Leadership by Stephen Covey, author of "The 7 Habits of Highly Effective People." I think it is important to repeat the Covey Leadership Center's mission statement before getting into the details of the seminar so you will have a better understanding of what the Center teaches. "Our mission is to empower people and organizations to significantly increase their performance capability in order to achieve worthwhile purposes through understanding and living Principle-Centered Leadership." At this point I think it is also necessary to ask two questions. What is Principle-Centered Leadership and what are the characteristics of Principle-Centered Leaders? Here is what I learned at this seminar:

Stephen Covey said that ineffective people try to manage their time around priorities and that effective people lead their lives and manage their relationships according to principles, natural laws and governing values. He says that principle centered leadership is the ability to apply these principles to problems, resulting in win-win relationships.

Principal-centered leaders **CONSTANTLY EDUCATE THEMSELVES** through every day experiences. They read, seek training, take classes, listen to others, learn through their eyes and ears and are curious and always asking questions. They continually expand their competence and ability to do things and desire to learn new skills and attain new interests. Mr. Covey said that the more principle centered leaders know, the more they realize what they don't know. This continuing self education also helps leaders **LEAD BALANCED LIVES**, another characteristic of a principle centered leader. A leader with a balanced life reads the best literature and magazines and keeps up with current affairs. They watch, observe and learn.

Principle centered leaders see life as a mission, not as a career and are **SERVICE ORIENTED**. They are constantly thinking of others and how they can improve service to them. He says that each morning, whether at work or with your spouse, you should put on your service hat and get into being of service to others. This service oriented attitude reminds me of something I once heard a motivational speaker say. He said that if you help other people get what they want, you'll eventually get what you want. In other words, if you help others attain their goals, by thinking of them first, you will eventually attain yours. Mr. Covey says that we must have the principles of responsibility, service and of contribution, to become a principle centered leader.

Two more characteristics of principle centered leaders are that they **RADIATE POSITIVE ENERGY** and **BELIEVE IN PEOPLE**. The demeanor of these leaders is cheerfulness, pleasantness and happiness. Their attitude is optimistic, positive, upbeat and they have hope and are enthusiastic. I concur with this because, after all, enthusiasm and a positive attitude are contagious. These leaders don't overreact to negative behaviors or criticism. They believe in the unseen potential of all people rather than how one behaves and that this attitude creates a climate for growth and opportunity.

Finally, Mr. Covey says that principle centered leaders **SEE LIFE AS AN ADVENTURE**, who savor life and know their security comes from within and have no need to categorize and stereotype everything to give

themselves a sense of certainty. These leaders exercise their minds through reading, writing, and creative problem solving. In other words, they **EXERCISE FOR SELF RENEWAL.**

My feeling is that this type of thinking Mr. Covey and others are preaching, is exactly what the doctor ordered. If the we are going to compete and be successful in a world market, business as usually won't make it. Leaders must be willing to change the way they treat followers and must be able to understand that there might just be a better way of conducting business. I also feel that if the U.S. Government expects this country to be number one again, then it needs to set the example for American business and become even more involved in Total Quality Management and other such programs. After attending the Covey seminar and seeing how many people were there, I left feeling good because it appears that American business is rising to the occasion. It reminds me of something Jeff Bridges, playing the role of an alien in the movie "Starman", said to a government employee. He said that what he found interesting about us is that we are at our best when things are at their worst.

Process Management Teams Hold Check-in Meeting

Tony Welch, Program Development Engineer, Headquarters held a check-in meeting to communicate progress on the Process Management Teams (PMTs). The meeting was on March 24-25, 1993 immediately following the FLH Strategic Planning Workshop. Attendance included Process Managers, Process Owners, Facilitators, Quality Coordination Team members, and Executive Quality Council members.

The six PMTs were started in January under a CH2MHill contract using the Pacesetter Group's Process Map system. The PMTs began work in February 1993 on the Location and Design processes at the division level. There are 5 PMT Sessions for each of the six teams. Sessions 1 through 3 were completed by the end of March. All teams are expected to finish Session 5 by the end of May. Another coordination meeting is being planned shortly after that to discuss lessons learned and to help determine the next steps once processes are fully documented and "out of control" points are known more completely.

Highlights of the check-in from Tony's meeting notes include:

- **There was general consensus that the PMAP [Process Map] method was working.**
- **The effort is rushed and more time is needed for the sessions and for preparation between sessions.**
- **Teams displayed positive attitudes and the structured PMAP process helped keep the teams focused.**

Correspondence Quality Improving

In Federal Lands Highway, our primary product is a scenic, environment-enhancing road or bridge. Long before that product is delivered, however, dozens of related documents change hands among customers, clients, and FLH. Often the first and lasting impression a customer has of an organization is the correspondence they receive. The FLH Headquarters Quality Council recognized this and last year, through a team effort, saw the implementation of improvements to correspondence preparation and quality control.

In a typical month, FLH generates over 450 formal letters and memoranda. The quality of that correspondence has recently improved significantly in all three divisions according to Curt Page, Program Engineer (Forest Highways), Headquarters. Curt is a member of the Correspondence Quality Action Team (CORQAT) and he prepared a set of tracking tables for the team. The tables were sent by memorandum to FLH Divisions on April 1. The CORQAT is using statistical process control techniques to measure the impact of their recent changes to FLH's correspondence control. Random sample correspondence analysis is used on a 90-day frequency to determine the rate of improvement. One of the key measurements is the number of rewrites required for official correspondence. For the November - January period, the percentage of rewrites was reduced from 23 percent down to 14 percent. Larry Smith, the CORQAT sponsor, says, "We believe that continued adherence to the Correspondence Guidelines will result in our continuous improvement."

Change Meisters

by Pete Millard [Excerpted from an article by the same title in Corporate Report Wisconsin, October 1992]

The 2,800-member Eastern Region of the USDA's Forest Service is headquartered in Milwaukee. This government organization, which covers a 20-state area, is engaging change-management strategies with the panache that other government agencies can only dream about.

> **"What we are doing is harnessing the energy of every person in the Region."**

Roughly eight years ago, former Secretary of Agriculture, John Block, and Chief of the Forest Service, Max Peterson, decided to light an "improvement" fire under a few foresters. Members of the Forest Service's Eastern Region have demonstrated that foresters respond quickly to fires. The change-management blaze was fueled by top-level challenges to eliminate bureaucratic barriers inside the Forest Service.

"What we are doing is harnessing the energy of every person in the Region;' says Butch Marita, one of three regional foresters in the Milwaukee office who shares leadership responsibilities. "Every person has to contribute instead of waiting to be told what to do."

The experiment within the Forest Service ultimately took on the characteristics of a massive "cultural change." Some foresters say the Forest Service's pilot studies in 1985, testing "a looser management climate;" were integral to change. Some say the integrated-resource management program which was unveiled in 1986 was a seed that would yield future organizational change. Others say cross-functional teams and the Region's "Project Spirit" began to loosen up the traditional top-down management mindset in 1987.

This much is clear: By March 23, 1988, Marita, the Eastern Region's chief forester, was ready to set major changes in motion. He let his people know it was time to change when he addressed the annual all-staff conference in St. Louis. He discussed 14 key points that change-management academicians would be proud of. Several components of his plan included the following:

Management of the region will become a loose federation of teams headed by a leader who is able to influence the team by what that person says not by the position that person holds.

Future leaders of the Region will come from all disciplines. Few will be foresters or engineers, says Marita.

Management will focus on partnerships. Marita says, "partnerships will be the way we do business" within the Region.

Partnerships in the external environment will be vital. The Region will accomplish its work with the involvement, funding and volunteer efforts of individuals and organizations outside the Forest Service.

The selection of leaders will be by subordinates and peers, not by superiors, which was customary.

Meyer says his Regional headquarters has the lowest operating budget of any in the Forest Service - 7.7 percent of its total budget. Meyer says the average operating budget for a headquarters is 12.6 percent and ranges from 7.7 to 19. 9 percent.

Some people call it participatory management or employee empowerment. At the Forest Service, the new vision of leadership and change management helped create an enthused work force. "There was no silver bullet," says Marita. "There was an evolution of a welled up feeling on how to remove barriers. My job was to help lay out the vision. If there is one thing, in addition to vision, that has made this Region successful, it is our ability to critique ourselves."

Quality Coordination Team Activities

The Quality Coordination Team (see inset on page 2 for membership) has several initiatives underway.

The team is currently working on a simpler technique to continue the Quality Improvement Prototype (QIP) assessments. The QIP assessment is based on the Federal Quality Institutes, criteria for Federal Agen-

cies. In essence, it reflects the specifications for a quality Federal organization.

FLH for four years has used the QIP criteria to measure our long-term efforts to implement Total Quality Management. The process for completing the assessment has varied somewhat in the past and there is a need to involve more of the agency in the assessment.

Last year, the QIP assessment was administered to the Field Divisions and Headquarters through the respective Quality Councils. The criteria was taken directly from the Federal Quality Institute. Since the criteria was designed to be used by very experienced evaluators, it was difficult to use as presented to the Quality Councils. In short, we had higher standard deviations in the results and widespread confusion over how to complete the assessment.

This year, the QCT is making special efforts to administer the assessment in a way that will reduce confusion and time to the Division Councils.

Another area of special work by the QCT is that of encouraging top-notch teamwork. The FLH publication, "Guidelines for Establishing and Operating Quality Action Teams" is in the final stages of rewrite. The new issuance should be available this summer.

Soon you will be seeing activity in another QCT initiative: the annual FLH Climate Survey. Progress toward TQM over the past four years has resulted in scores on the Climate Survey which are high on the existing scale. A consultant has been retained to take a professional look at what we have done on our own in the way of surveying employees. The consultant, Futron Corporation, will be refining the survey and administering it during the year in order to provide an ongoing process, which will permit FLH to hone-in on areas which need work -- from the employees perspective.

Another survey project which Futron Corporation will be conducting on behalf of FLH is the Completed Construction Survey. This survey will not take the place of the existing FLH surveys of construction contractors. It will, however, be developed to obtain feedback from primary customers of our completed products. Client agencies and other direct recipients such as counties and State highway agencies will be included.

All this, plus Process Management Teams, Strategic Planning, and many other activities, keeps the QCT members very busy.

Recommended Reading

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Service America, "Doing Business in the New Economy," Karl Albrecht - Ron Zemke, Dow Jones - Irwin, 1985.

Toyota Management System, "Linking the Seven Key Functional Areas," Yasuhiro Monden, Productivity Press, 1993.

Reinventing Government, "How the Entrepreneurial Spirit is Transforming the Public Sector From Schoolhouse to Statehouse, City Hall to the Pentagon," David Osborne and Ted Gaebler, Addison-Wesley Publishing Company, Inc., 1992.

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Strategic Planning

Integrating quality and strategic planning is HARD work. Federal Lands Highway has direct experience to share. Contact Mark Chatfield, HFL-1, 202-366-9492.

environmental, and safety issues; Quality; the National Highway System; Information technology; Partnerships; and Systems (processes).

Federal Lands is following up with an internal environmental scan. The top executives of FLH plan to personally meet with employees in each of our major office locales. The purpose will be to obtain the FLH employees' perceptions and to share information about the direction of the organization. All this will be background for the ongoing strategic planning process in FLH.

FLH Quality News Meets Customer Needs

Responses from the second FLH Quality News survey show readers are satisfied with the newsletter. The average of responses were above the median for 14 of the 15 categories. The first survey indicated a need for a more compact newsletter. As a result, the length has been kept at 16 pages or less, down from the 20 or more pages in earlier editions. The second survey shows improvements in the organization, accuracy, and usefulness.

The highest ratings in both surveys were in neatness, attractiveness, and having articles which are well-written. Two areas for improvement indicated by the survey are "understandability" and providing a newsletter that is fun to read. Although, there were several narrative comments which took issue with the idea that one of the quality aspects should be "Fun to read."

TOM PETERS -- LIVE!!!

by Donna James, Management Analyst, CFLHD

Recently, several of our employees had the opportunity to attend a live, Tom Peters seminar in Boulder, Colorado. All of those who attended the seminar said he had some valuable comments. However, that many of the ideas would not be practical to implement in the Federal Lands Highway Office. I jotted down the following points made by Tom Peters that I thought other employees would find interesting to read.

Peters stated that his book, *In Search of Excellence*, is now outdated. "Customers are no longer first." Organizations should place the structure of the organization as a higher priority. What is more important now is to thin out the layers of management in the organization. "Middle management adds negative value to the product or service." It is Tom's belief that "size works against excellence."

Peters says that 97 percent of an organization's employees work on intangible items which include management decisions and that only 3% work on producing tangible items.

During a portion of his seminar, Peters emphasized that employees need to think "resumé" to be successful. Think of a project your recently completed. What were the benefits that were derived from it? What did you learn? How are you more valuable now after finishing the project than you were before? Continually seek to answer questions pertaining to your performance. What is it that I do? What have I actually done? How do I really know I've done something? Who can confirm what I've done? What's the evidence that my skills are state of the art?

Peters feels that the average worker is a "slot filler" not a business person. To turn people into business minded people, management needs to:

- **Cross train,**
- **Involve employees in the budget process,**
- **Give employees the power to decide,**
- **Grant employees the ability to decide who should be on their team which would include terminating and counseling employees when necessary, and**
- **Provide employees with their own travel budgets.**

Peters believes that organizations tend to hire too many dull people who provide dull performance. Management needs to create a work environment that is "fun and crazy" to parallel these "changing and crazy" times. He says if you want to make an organization "exciting," hire "exciting" people. Just because an individual does not have a consistent work history does not make him or her an unworthy candidate for a job.

He indicated that "organizations that have never failed will fail and organizations that have failed will succeed." In other words, you "don't learn from being successful."

Peter Drucker says that, "every organization has to prepare for the abandonment of everything it does." Peters says that, "instead of improving parts of a process, change the entire process."

Peters told the story of an organization that completely changed their structure. They reassigned employees and moved middle management back to the front line. One day when the head boss asked one of the affected employees how she liked the changes, she stated, "just fine." Then when he asked where she worked, she said on the 14th floor! The employee only noticed the change in her environment, not in her type of work. Employees who are not part of the decision making process lose the feeling of ownership. Have Federal Lands Highway employees noticed improvements in their organization? Have the improvements increased the quality and productivity of the organization, or have they hindered the processes of the organization?

"What's good for the nation and good for the organization is also good for the individual. In order to be good, the definition is narrowed: "to be good is to be consistent."

Transition Briefing Notes

The Headquarters office provided information to the new administration's transition team in January. The entire FLH program was covered. The following is the Summary and Total Qualiity Management portions of the briefing. It provides an overview of our entire quality initiative.

Summary

The mission of the Federal Lands Highway Office is to carry out the Federal Lands Highway Program through:

- Program administration,
- Highway and transportation engineering services,
- Training and development of engineers, and
- Development and dissemination of technology.

Nearly one-third of the land area of the United States is federally owned and administered. The Federal Government has a special interest in and responsibility for highways on or serving these Federal lands. The Congress has established a number of programs to fund the construction and improvement of highways on or serving Federal lands, and has authorized the Federal Highway Administration (FHWA) to perform engineering and related services in conjunction with their improvement. These programs, as administered by the FHWA, are collectively called the Federal Lands Highway Program. In addition, several Federal agencies depend upon FHWA expertise for a portion of their road building needs. In addition to administering funds, FLH plans, designs, and administers construction contracts. As one of the field divisions proudly asserts, "We build America's scenic highways."

The FHWA has established an organization with responsibility for the Federal Lands Highway Program. This organization, "Federal Lands Highway," (FLH), includes a headquarters office consisting of two divisions and three field offices (divisions). In addition, Federal Lands Highway Office personnel in the Washington, D.C. Headquarters provide legislative and budgetary support, coordinates among the several Federal agencies and provides program coordination, direction and policy guidance. The three field divisions are responsible for overall program implementation of the Federal Lands Highway Program.

The 625 employees of the Federal Lands Highway (FLH) Office are located in four offices nationwide. The Washington, D.C. Headquarters office has 20 employees. Three field Divisions have about 200 employees each. As part of its Total Quality Management (TQM) effort which began in 1988, FLH formally established a vision, mission, and guiding principles. Typically, the field divisions plan, locate, and design highway and bridge projects for client agencies, award contracts for construction, and administer the contracts through full time oversight provided by personnel at the construction sites. The people of FLH carry out this mission through a multitude of administrative and highway related responsibilities for over 20 external Federal, State, and local government agencies and groups.

The FLH has interagency partnering agreements with the several Federal land management agencies. Cooperative efforts involving a large number of technical activities are underway at all times. The FLH takes great pride in providing engineering technical services to a wide range of public agencies at their request. In the course of administering the FLH program and providing engineering and technical services, the FLH organization provides extensive training and development of the Federal Highway Administration's en-

gineering work force and assists the FHWA with carrying out its technology, research development, and transfer functions.

Total Quality Management

In 1980 the "Direct Federal Program," as we were then called, was reorganized into a single managed program with redefined and expanded responsibilities. However, as program requirements continued to expand and as delivery schedules became more difficult to meet, we found that traditional management styles and ways of doing business were not resulting in improved product and service quality on any permanent basis. At this time a new coordinated Federal Lands Highway program began in 1982. This new program authorized more than a 200 percent increase in our planning, design and construction responsibilities starting in 1983. Human resources decreased by 15 percent from 1982 to 1985. FLH undertook coordinated management plans, work method improvement programs, and other cost avoidance and program initiatives to better deliver the much increased program more efficiently and effectively.

The Federal Lands Highway managers were having to cope with the increasing program demands and at the same time trying to maintain certain output levels. Without a new focus on the quality of FLH services and products, and the real customers and resources, there was no foreseeable way that the situation would improve. The Government-wide productivity improvement program established by Executive Order in February 1986 offered a frame work on which FLH continued the quest for improvement, but it was not until the Office of Management and Budget issued Circular A-132 in April 1988 that the Federal Lands Highway program concentrated on a broader business strategy to empower employees, develop customer relationships, and work toward total program quality through continuous improvement.

Our Division Engineers and Division Chiefs, the FLH Program Administrator and other key staff members met in July and August 1988 to discuss management system needs and consider future actions. This followed several top level meetings with the Office of Management and Budget, Departmental officials and key agency managers. During the week of October 10, 1988, an interim coordination group recommended the FLH management system be directed toward Total Quality Management.

The journey began and along the way we have passed several milestones, some of which are highlighted below.

- All FLH personnel recieved training in quality. Targeted facilitator, team, and measurement training provided a core group of trained people.
- A quality organization was superimposed on the existing structure.
- A policy on quality was adopted and marketed.

Federal Lands Highway Policy Statement on Quality

The Federal Lands Highway organization is committed to excellence in everything we do through continuous improvement, employee involvement, and customer satisfaction.

Adopted September 11, 1991

Executive Quality Council

- Quality Action Teams were formed at the FLH organizational and unit levels to address specific improvement areas.
- Measurement of our organization culture was institutionalized through an internal employee survey based on 20 categories. The graphic below depicts the categories in which improvement was most dramatic.
- A process was set up to assess development of quality principles in concert with the eight Federal Quality Institute's Quality Improvement Prototype criteria. FLH's three most improved areas are: Results of Quality Improvement Efforts, Employee Involvement, and Employee Training.
- FLH won the first Secretary of Transportation's Award for Quality in 1991.
- A quarterly employee "FLH Quality News" was initiated and is now in its fourth year.

Your Article Here!

If you have a quality related achievement, why not share it with the 1,200 readers of FLH Quality News. Readers want to know how Employee Involvement, Customer Focus, and Continuous Improvement apply to everyday work. If you want less philosophy and more practical application, why not start with your own work-related example. Just write it down and FAX it to: FLH Quality News, 202-366-7495.

- A plan was developed to implement quality management and integrate it with the FLH strategic business plan.
- A formal partnering policy was issued for project development and construction.
- Peer reviews and management studies were used to target activities for continuous improvement.
- Process analysis was introduced as a top priority for 1993.

Federal Lands Highway's vision is to be recognized as the best engineering organization through people dedicated to excellence. The FLH has made substantial, and more importantly, continuous improvement toward that vision. Federal Lands Highway employees and managers make every effort to share with others information and lessons learned. Through the quarterly FLH Quality News, formal presentations, and participation in FHWA, DOT, and other management initiatives, FLH actively promotes improved management and employee involvement in its business.

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Volume IV Issue 3 Federal Lands Highway Summer 1993

FLH QUALITY NEWS

U.S. Department of Transportation
Federal Highway Administration

400 7th St., S.W. Washington, D.C. 20590 (202)-366-9492

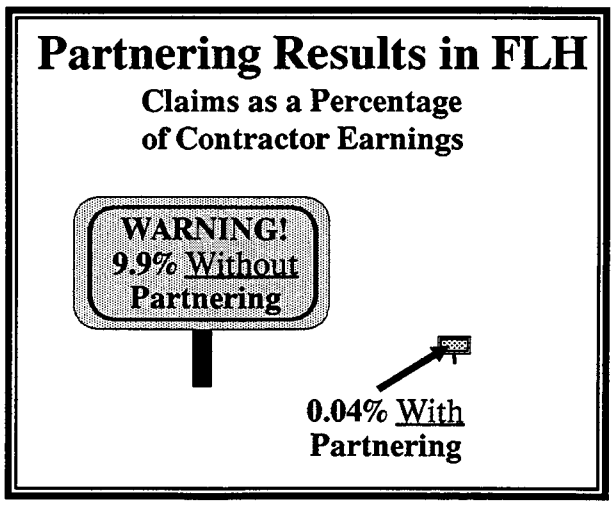
Partnering - Its Working!

In his new book, *Making Quality Happen*, George Labovitz spells out the essence of partnering. "Partnering customer and supplier organizations behave as if they were one company (at least in the areas in which they've agreed to partner), helping to improve each other's work processes and sharing each other's successes and failures. Underlying the partners' interactions is a belief quite contrary to caveat emptor: For me to succeed, you must succeed. Ironically, customer and supplier achieve this high level of trust, communication, and mutual understanding by shifting their focus *away* from each other to concentrate instead on a superordinate goal: Satisfy the ultimate customer."

The goal of partnering is to reduce the cost of quality. There are two parts to this cost. First, the cost to make products and services right the first time. This is the cost of producing high quality and is a necessary cost although it can be minimized. Second, the cost resulting from deficiencies. This is the cost related to poor quality and is a waste of time and money.

One of the most pervasive areas of waste in highway construction and contract administration is that of claims by contractors for unresolved disputes. Because resolution requires dramatically increased resources, claims represent a lose-lose situation for both the contractor and the contract administrators.

The reduction in waste that Federal Lands Highway is achieving with partnering is very encouraging. The results are now starting to become evident. In 1990, before partnering, there were 23 active claims on construction contracts totaling $12.4 million. In 1991, as a FLH initiated a few formal partnering projects, twelve claims were settled but ten more were added for a total



of $14.6 million. As of the end of FY 1992, when partnering was begun and continued on multiple projects, there were virtually zero (0.04 percent) claims on the $73 million of contractor earnings for the 13 partnered projects underway. Claims as a percent of the $143 million in contractor earnings for all 108 projects active during FY 1992 was 9.9 percent, or $14.1 million. Using the 9.9 percent rate, the claims on partnered projects could have been expected to be $7.2

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Publication No. FHWA-FLP 93-008

FLH QUALITY NEWS
Volume IV, Issue 3
Summer 1993
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The FLH QUALITY NEWS is an official publication of the Federal Lands Highway Office, Federal Highway Administration, U.S. Department of Transportation. It is published several times a year for educational purposes to promote quality principles among FLH's and other organization's employees, managers, and supervisors.

Other topics may include information about programs, policies, projects, and administration. Contents of this publication may be used without permission. However, courtesy credit is appreciated.

Mention of private firms in no way constitutes an endorsement or recommendation. Communications should be submitted to: Editor, FLH QUALITY NEWS, Federal Lands Highway Office (HFL-1), Federal Highway Administration, 400 7th Street, S.W., Washington, D.C. 20590.

million. Even assuming all of the additional 4.7 percent, $3.4 million, contract growth on partnered projects is attributable to partnering (an unreasonably conservative assumption), the reduction in waste would be $2.5 million.

Although early indications are very positive, other factors must be considered. For example, FLH has had only two year's experience in partnering; there is insufficient completed project data to reach statistically significant conclusions. Some of the projects were selected to solve difficult problems on expensive projects, some were selected for their potential for early success. Partnering in FLH has been encouraged, not mandated. In some cases contractors have turned down the opportunity to enter into partnering agreements. Some of this may be due to their being satisfied with existing relationships and some may be due to fear of additional management resource commitments vs. anticipated benefits. There has been no directive from management to eliminate claims on partnered projects. Indeed, as might be expected in any human endeavor, some partnering efforts have been very difficult and one or two have been considered by some to have failed. The real failure, however, would have been never to have tried.

The positive facts which cannot be avoided are:

- Nearly 50 percent of contractor earnings for the Fiscal Year 1992 were on projects which included formal partnering.
- Claims on partnered projects have been virtually nil.
- Engineers and contractors have good things to say about their experiences as exemplified in the following articles.

SUITLAND PARKWAY PROJECT RESCUED THROUGH PARTNERING

by Bill Whittenberger, EFL

The Suitland Parkway project, NPS SUIT 1BC13, started in November 1990. Completion was originally scheduled for December 1, 1993. The project is a major rehabilitation along with new construction of a primary transportation link between Washington, D.C. and Andrews Air Force Base in Maryland.

performance and they create new and improved processes.

On Cycle Time: Cycle time is the most important issue in our organization which we need to work on. We need to pay close attention to this if we want to improve quality. On Leadership: Leadership is articulating what needs to be done, organizing how to get it done, empowering/engaging others to make it happen, and monitor/measure accomplishments.

Question to Jerry Budwig - Based on your exeperience and your attendance at the conference, what is your perspective of the future of the FLH Quality Improvement initiatives?

Response - After attending the first two days of the conference, I am more convinced that FLH and the Central Division are on the right track. The sessions that have impressed me the most were, "Defining the Boundaries of Empowerment," and "Encouraging New Leadership Behaviors through Rewards and Recognition." These are both areas where the Federal Lands Highway TQM initiative will expand.

Another presentation which impressed me and which I enjoyed very much was on the development and communication of Electronic Data System's, "Strategic Plan '95." EDS is Ross Perot's company. The message, in part, from the EDS presentation was that there is no one correct approach to achieving quality and productivity improvements. What works is adopting an approach that suits the organization's needs and then sticking to it. TQM is a long journey. FLH and Central have made a good start. Regardless who is elected and who our leaders will be after November, our quality efforts will prevail in FLH.

Question to Al Burden - Would you please summarize the leadership factors which have important meaning and how you might use these skills in Federal Lands?

Response - The conference provided me with a better understanding of what processes to pursue to empower and engage our people. It is necessary to understand staff, and team strengths and weaknesses. Then through coaching and training, begin to build levels of competence and commitment. As staff members and teams develop their skills and competence, increase levels of empowerment with stretch goals, responsibilities, and the means for achievement.

I believe it is important to break away from the old management practices of delegated responsibility/authority with management controlling the staff and outcomes. The new philosophy suggests that staff and teams be empowered based on levels of competence within established guidelines. Allow staff and teams to stretch the envelope of responsibility, to assess risks, and operate with ever increasing quality. Allow them to define requirements based on customer needs and expectations. This will give ownership to that portion of their operations, processes and control systems, and allow continuous improvement with accountability.

Question to Larry Smith - Knowing some of the FLH quality improvement objectives planned for the next 2 years, would you describe some of the important lessons learned from the QPMA conference?

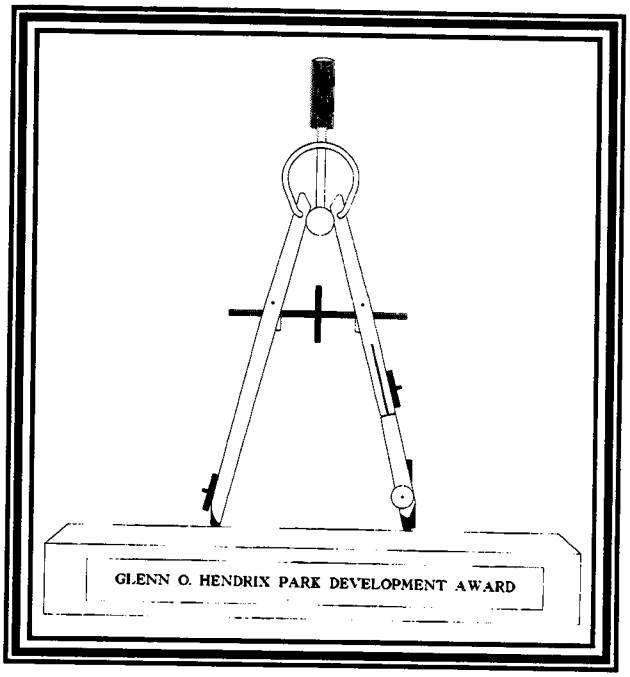
Response - The QPMA conference on Leadership, a theme that many of the CEOs and other panelists discussed, was the need to understand our work processes and systems. Even the IRS which has been recognized as a leader in Government quality improvement, refocused its TQM implementation efforts to process definition and understanding by all employees. An interesting definition of process management was given that further highlighted its importance. Process leadership for continuous improvement is to look at all activities in their sequence and relationship such that we do the right things right the first time. In Federal Lands, we have many systems and processes but don't always understand how all the pieces fit together, impact on others, or why many activities/processes are even performed and to what degree or standard. Without a basic understanding of our processes, it is difficult to identify the lower value added activities, eliminate wasted motion, and to know what causes redo/rework. This acts to hinder us in making continuous improvements.

We have recognized this as a critical issue in FLH and have made this a priority objective in our Strategic Business Plan. No doubt, it will take time, dedication and commitment, but the rewards should be significant. The process itself will improve communication of why and how things get done, both up and down the organization. It will help us better define our critical success factors, set baselines for improvement, and show us where to eliminate waste and other poor quality costs. That is how we will meet our customer requirements and increase customer satisfaction.

Question to Gary Klinedinst - How would you describe the primary reinforcements to FLH and Eastern's Total Quality Management implementation plan?

Response - The QPMA conference has served to reinforce several key items making up our total quality

improvement efforts. Those that come to mind are communication, leadership, and empowerment. Communication has to be from the top and must be both constant and consistent of what is to come, what is expected, and how the effort did in the past. Leadership has to be viewed by employees to have integrity and be trustworthy, that is be honest, consistent, and believable in return for employee support. The third important ingredient that reinforces our quality improvement efforts is Empowerment of FLH employees and teams. This is not just delegation, but much more. It means unleashing full potential of every employee to be their best, and gain fulfillment, ownership, and trust in their work. Without these three factors, research shows the American worker uses only 30 to 40 percent of their total potential. We cannot afford to waste the human potential of our most important resource.



Western Wins the Glenn O. Hendrix Park Development Award

There are many ways we can show results of Total Quality Management in Federal Lands Highway. None is better than the recognition by our customers for a job well done. Kenneth Raithel, Jr. is the manager of the Denver Service Center's Central Team for the National Park Service. His letter dated August 10, 1992 to our Western Federal Lands Highway Division Engineer said,

"The Glenn O. Hendrix Park Development Award has been instituted by the Denver Service Center, to recognize outstanding sustained performance in the implementation of a major planning and development program for a unit of the National Park System.

We on the Central Team are proud to present this award to you and the dedicated staff of Western Federal Lands Highways. You have been involved with the Denver Service Center for many years in the undertaking of a very ambitious and complex park road planning and construction program.

Your commitment and dedication to this program over the years have been exemplary in every way. Your patience and understanding when projects have been delayed or have changed in scope, and your willingness to stay involved in a positive and constructive manner have ensured the success of many projects. Your sustained contributions through participation in field trips, public meetings, and review of work accomplished have added significantly to the quality of the work.

In summary, you and your staff's continued professional/technical assistance to the National Park Service has been invaluable."

Some Points on Quality

by Charmaine Farrar

DENVER REGIONAL TOTAL QUALITY MANAGEMENT CONFERENCE

This year I had the opportunity to be on the program committee for the second Denver Regional Total Quality Management Conference held July 15-17, 1992 at the Sheraton Denver Tech Center. The committee began its planning in November of last year. It takes a long time to select, procure, and schedule presenters

for 48 workshops. However, our committee members became a real team. We had a goal and we achieved it. The conference was a huge success partially because of our team's efforts.

Approximately 500 people attended the conference. Lois Hart, Joe Tunner, J. Sullivan, and Rob Stone were some of the presenters with whom we are familiar. The workshop sessions were divided into seven program areas: Getting Started, Making It Happen, Keeping the Momentum, and Case Studies. In addition, a film festival ran throughout the conference showing films on a variety of quality-related subjects.

Murphy's Law of Thermodynamics - Things get worse under pressure.

I jotted down the following noteworthy quotations from the conference:

"Everyone in the organization is a director of quality" - Sign at the Saturn Plant.

"Management should not: ignore the ideas and concerns of employees, withhold information, play favoritism, and sacrifice progress toward long-term improvements in order to react to short-term needs."

Talk to your employees: "You know what needs to be done. How can I help you keep doing it and doing it better?"

Partnering is the balance between "the customer is always right" and "we know what is best for the customer."

Why empowerment does not always work - "many people like to be told what to do."

"A decision made is to not make a decision."

"'Best value' is represented by an item or process that consistently performs the required basic function at an appointed time and place and has the lowest total cost." - Draft OMB Circular A-13, March 12, 1992."

RESULTS!

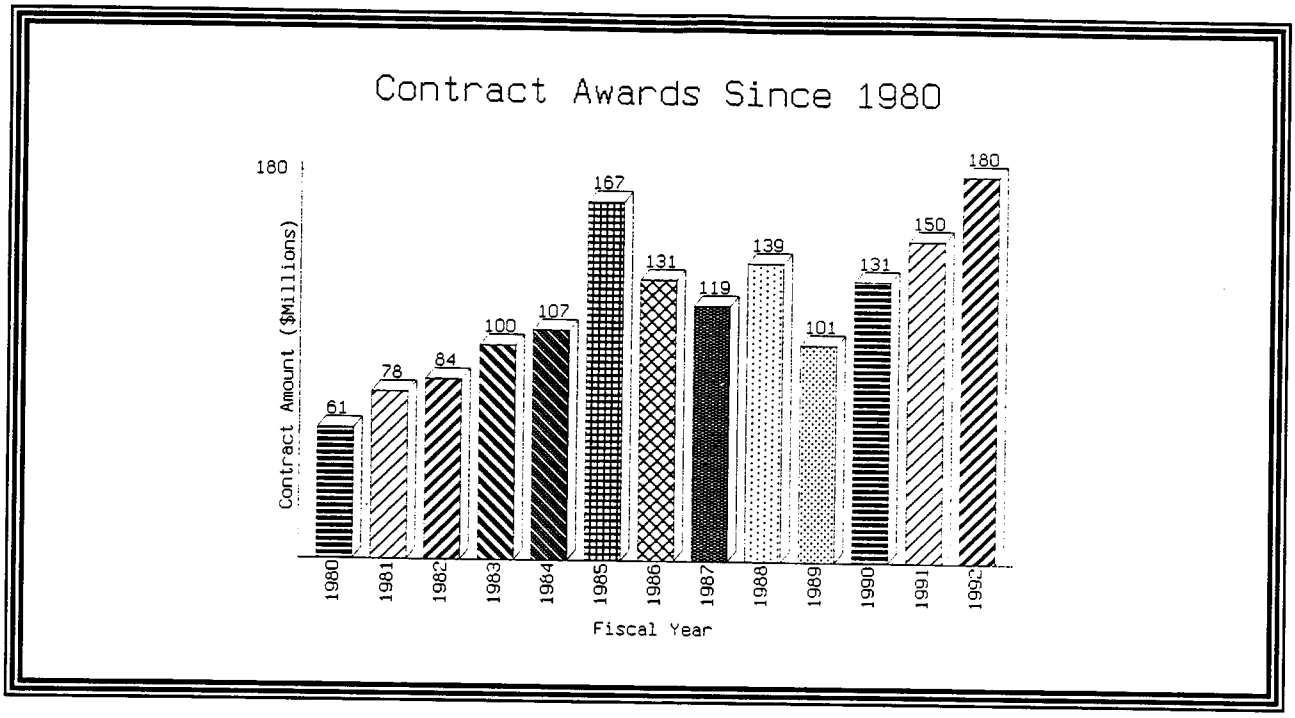
by Mark Chatfield

W. Edwards Deming says, "Reactive behavior, managing by results; sure you want results, but in managing by results your quality goes down, morale goes down."

Federal Lands Highways has many results to show for the work it does. For instance, in an October 1 "Weekly Report" to the Administrator, Federal Lands reported FY '92 Program Achievements - "At the conclusion of FY '92 this week, Federal Lands obligated a total of $376 million, and an additional $53 million allocation transfers from other Federal agencies for a total of approximately $430 million. Federal Lands direct procurement totaled nearly $185 million of which $170 million was for 63 construction contracts. This represents the most Federal Lands has ever accomplished in any single year." The figures are pertinent and interesting, even motivating, to most of the rest of us, but they don't really give us, individually or as operating teams, an incentive to do our job better.

"Managing by results is like driving by keeping your eye on the rearview mirror," Dr. Deming says. Telling workers to keep their eye on the bottom line is like telling the Denver Broncos that if they want to win, they should keep their eye on the scoreboard. Consequences of actions taken are shown in many ways. The number of projects we advance to construction in one year and the quantity of aggregate we sample in a month are, in a sense, results. It is not sufficient, to just count items produced and call them "results." Dr. Deming says what is needed is an understanding of the theory of variation and the system.

The key to understanding this is the side of our TQM "triangle" called "Continuous Improvement." The bot-



tom line is that there is no bottom line. Our goal is to keep moving the goal. We care about what was done in the past so we can improve in the future; but we keep our eyes on the tasks for which we are personally responsible. The Broncos' offensive line knows the opponent's defensive line like they know their own family - they learn about them. They know their moves and their traits. Knowing this, they are better at their work. As long as we are learning and improving, we will have results.

Federal Lands Highway uses the Federal Quality Institute's Quality Improvement Prototype (QIP) award criteria to assess TQM in our organization. The last, and most heavily weighted, category is titled, "Results." Let's see what they are looking for:

- **Significant measures of mission performance demonstrate exceptional results over past 3 years.**

In other words, they want to see progress charts over a three-year period showing we have gotten better in our key measures. We must focus our measurements on our key activities from the top down.

- **Customer satisfaction shows exceptional results over past 3 years.**

This means we should have numbers which show that our customers think we are doing things right and doing the right things. We have been doing this on a limited basis for construction contracts and are initiating a widespread effort to track project development and construction quality from the perspective of internal and external customer satisfaction.

- **Exceptional results achieved in organizational quality, timeliness, productivity over past 3 years; exceptional results in in-process, end-item measures across organization for past 3 years.**

They want to know that we got the work out, that it was good work, and that it was on time. They want to know that we track our processes as well as our end products. We have made progress in areas such as our organizational culture, project development scheduling, and other systems.

- **Quality performance of major suppliers improving over past 2 years.**

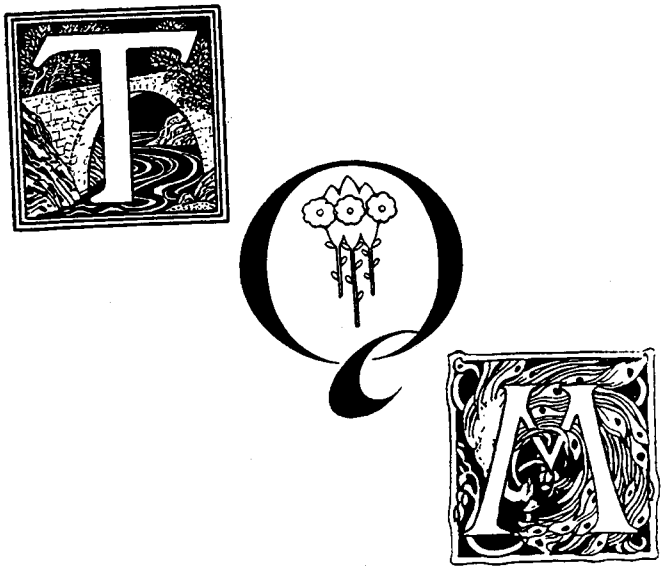
This says that we should also track and be able to show improvements in our architect/engineers (A/E's), materials suppliers, contractors, and others who bring products to us. We have a strong partnering effort with good results, but we also have far to go.

These QIP assessment statements confirm that "results" means getting better. It also means we must document what has been happening in order to know we are getting better. We have consciously advanced TQM in a way which minimizes paperwork and burdensome bookkeeping. However, responsible stewardship involves some records and documentation. If we continue to approach this carefully, there is no reason we can't have records which show improvement in our key areas without creating a paperwork nightmare.

Results -- they mean a lot to all of us. They give us a sense of accomplishment, improvement. It may seem to be a paradox, but having results doesn't just mean looking at the level of obligations or the number of kilometers built after we have spent all year construct-

ing them. Having results means looking at the kilometers of roads built and how they were built and knowing they are better than the those we built the year before. Even in their best light, however, looking at results means looking back at things we cannot redo. Fortunately, there are seven other QIP criteria which deal with looking forward.

> *"Not enjoyment, and not sorrow, is our destined end or way; but to act, that each tomorrow brings us farther than today."* - Longfellow



TQM - Current Trends

by Mark Chatfield

Gilbert Fuchsberg, staff reporter of the *Wall Street Journal*, calls the "total quality movement, one of the biggest fads in corporate management." He goes on -- it is "floundering, a broad study suggests." Other words in his May 14, 1992 *Wall Street Journal* article describe TQM as "plenty of talk and much action." James C. Shaffer, vice president and principal of consulting firm Towers Perrin, says, "There are tens of thousands of private and public-sector organizations with quality programs chugging away somewhere within their establishments, and almost every one of them is failing." Robert Schaffer, another consultant, says businesses "like lemmings marching to the sea ... are rushing headlong to a destination called *total quality*." Then Tom Peters himself vents his spleen [his words] by saying things like, "Hangnails? Apply TQM before bed. Lost market share? Two tablespoons of TQM will do the trick ... [the] infinitely flexible elixir called TQM is <u>not</u> the answer to all of America's vexing business problems."

On the other side of the debate are people like Harry V. Roberts, professor of statistics and quality management at the University of Chicago's graduate business school. He says that contrary to critics' beliefs, quality management is helping many companies survive and even prosper. He cites the 1991 GAO survey of 20 major U.S. companies showing that many posted "an overall average annual improvement" in corporate performance after employing quality management techniques. Roberts points out that companies like Xerox "wouldn't be here" without quality management. As to the idea of TQM being a "fad," William A.J. Golomski, senior lecturer at the University of Chicago and president of a consulting firm, says quality management has been successfully used in the U.S. since the 1950's, although that fact isn't well recognized.

When I was in Junior High School in Deming, New Mexico, in 1958, one of my spunkier teachers said, "I don't believe anything I hear, and only half that I see." Obviously she overstated the philosophy. Being a well-weathered bureaucrat, I have reworked the statement to say, "... and <u>up to</u> half of what I see or read." The point is, what are we to believe? Some experts say TQM is bad, some say TQM is good.

In this age of hypertension, hyperbola, and hypermedia almost everything we come across must be interpreted or filtered to find the facts. We are so bombarded with intensity, it is usually difficult to find value. When we find value, we are almost afraid to admit it lest some high-powered, well-placed individual issue a 10-second sound bite and turn what we thought was a good idea into yesterday's fad.

The debate must be settled in your mind. If you are disillusioned by the three-letter acronym (TLA) "TQM," join the crowd. However, rejecting concepts

which have been proven to work just because they come under the heading "TQM" is at best unwise. Consider what Mark Graham Brown, a Baldrige Award Examiner, says in the August/September 1992 issue of QPMA Council Connection:

"Both quality and the Baldrige criteria have become fads. I read the other day that ASQC has doubled its membership since 1987. Just about every company in America is embarking upon some sort of quality or Baldrige-related initiative. For many of these companies, this is a fad. Some are already bored with it and are looking for the next management fad. Others are forced to get involved because their major customers have told them they need to jump on the quality bandwagon. The vast majority of these companies will never really implement total quality, and will drop their quality or Baldrige initiatives within a few years. Interest in TQM, Baldrige, and quality improvement in general has peaked because it is a fad."

The fact that something is a fad does not make it worthless. Exercise is a fad in America right now also.

"... The fact that something is a fad does not make it worthless. Exercise is a fad in America right now also. Most Americans read about the benefits of exercising and join a health club, start jogging, walking, or buy some exercise equipment such as a stationary bicycle or a stair climber. Almost all of these people will not stick to it, however. Regular exercise is hard work, and requires tremendous dedication to keep at it 3-5 times a week for the rest of your life. The same thing can be said for total quality. It takes a long-term commitment, much effort, a great deal of time, and is something you have to work on forever. Consequently, most drop out. For those companies that have stuck with TQ, and for those individuals who have stuck with their exercise programs, amazing benefits have resulted. Both will live longer, be happier and healthier. The remaining 90% of the organizations and individuals will be looking for the newest management book or diet book that promises yet another quick fix to their problems. The individuals will go through yo-yo diet cycles and the organizations will reorganize, lay off employees, and engage in other short-term strategies. The bottom line is that both will remain unhealthy and fail to attain any of their long-term goals."

The Famous Tate Family

Old grandpa Tate had two sons. The families of the two boys are still working in FLH, but they are as opposite as day and night.

On the bad side of the Tate family is Dic Tate. He wants to run everything in the office and is miffed if things don't go his way. His younger brother, Ro Tate, isn't quite so bad; but he's always changing his mind.

On the other hand, whenever new projects are suggested, cousin Hesi Tate and her sister Vege Tate pour cold water on all the proposals. Then there is Miss Imi Tate. She wants the office to be just like her old office, whether it applies or not.

When the smartest of the family puts his nimble mind but acid tongue into a discussion, it causes anger and frustration. His name is Devas Tate. The pair on this side of the family that really does the damage, however, are the twins. Irri Tate needles everyone about everything, and no one appreciates his style of humor. His twin sister stirs up trouble constantly by gossiping and backbiting. She peddles false stories whose damage cannot be retracted, and true stories which are spiteful and disruptive. The old bag is aptly named Agi Tate.

Fortunately, there is a good side to the Tate family which is a wonderful influence at the office. Whenever anything needs doing, Facili Tate and his happy family will do anything and everything they can. When his unruly cousins are stirring up trouble, and when sharp, heated words are exchanged, uncle Cogni Tate pours oil on the troubled waters by his words of wisdom.

As you can see, this family is very widespread. It's likely you have some Tate family blood in you. On which side of the family are you?

(2) Typographical errors appear in inverse proportion to the number of syllables in the misspelled word.

(3) Engineers can catch misspellings only in words written by someone that's not an engineer.

(4) The incidence of missed typographical errors increases in direct proportion to the number of people who will see the copy.

(5) The incidence of missed typographical errors increases in direct proportion to the size of the letters in the copy (about 1.3 errors per point size, but that proportion isn't proven beyond doubt).

(6) Success in finding typographical errors is in inverse proportion to the finder's income and number of years of education. Ask the janitor.

Correspondence Guidelines Developed by Quality Action Team

The GREENEST book you ever will see is called the Federal Lands Highways Correspondence Guidelines. The book, developed by the Headquarters Correspondence Quality Action Team in September 1992, provides the standards and processes for improving correspondence quality. The team, sponsored by Larry Smith, produced guidelines that set the stage for measuring the quality of our correspondence.

Team members Sharon Minnich (team leader), Curtis Page, Alfred Logie, Deena Purvis, Gloria McGraw, and Jeffrey Rapol coordinated and received feedback from customers throughout FLH. The team worked together to provide a consistent, easy-to-read set of guidelines complete with sample documents, lists of acronyms, and other essential information. Now even an engineer can produce a QUALITY document (assuming they can use the word processing spell-checker)!

Bukota's Typographical Truths:

(1) Typographical errors will be found only after the final copy is bound and mailed.

QUALITY, A Priority in FHWA

Dr. Larson, Federal Highway Administrator, recently pointed out the five top priorities in FHWA to the National Motor Carrier Advisory Committee. One of the five was: "Improve quality of transportation systems. Vehicles have improved, but many believe roads have not. Road builders need to get improved products, bring on new technology faster, and get past what seems to some like the throwaway road era."

Becoming the Best Through Suggestions, Awards, and Recognition

by Pete Perros, HFL-12

This newsletter has chronicled steps in FLH's quality management journey, undertaken as a means for dedicated employees to make it the best highway engineering organization in the business. We identified the three key elements of quality management as customer satisfaction, employee involvement, and continuous improvement. Early on, the Executive Quality Council (EQC), our TQM "board of directors," recognized the positive relationship between the latter two elements

and an effective employee suggestion program. The agency suggestion program that existed at the time did not encourage large numbers of employees to become involved with the improvement of their organization. Consequently, the EQC commissioned FLH's first Multi-Division Quality Action Team (MDQAT) and charged it with developing a suggestion program that would meet the organization's unique needs. The team was comprised of representatives from the FLH Headquarters office, its three field divisions, and the FHWA Office of Personnel and Training.

The result of the team's efforts is the "Bridge to Improvement". It combines new and proven elements into a single, innovative system. The most unique feature of the Bridge to Improvement is that it goes after both large and small ideas by offering users a choice of two distinct suggestion-processing options. The "formal" option pays cash for ideas that result in monetary savings or significant intangible benefit to the organization. This option is modeled after the U.S. Coast Guard's suggestion program and is intended to capture the potentially "big" ideas. It recognizes a survey finding by the National Association of Suggestion Systems that cash is the biggest motivator for employee suggestions in the U.S. The less formal "Shortcut" option provides non-cash awards for smaller, everyday ideas. It makes using the system easy by minimizing eligibility, documentation, and processing requirements. The Shortcut option is based on the Japanese "kaizen" principle of significant organizational improvement through the continuous flow of small, incremental ideas.

Besides integrating both of these approaches within a single suggestion system, the Bridge to Improvement suggestion program offers other improvements:

- Short, defined response times for processing suggestions -- 10 days for the formal option, 3 days for the Short-Cut.
- Acknowledgment gifts for all valid suggestions submitted, and nominal cash evaluator awards (both for formal option only).
- In Headquarters and each division, a Suggestion Committee to manage the system and foster local ownership of it, and a dedicated Suggestion Program Coordinator to handle its day-to-day administration.
- An automated data base for tracking suggestions in process.
- Emphasis on (1) keeping suggestors informed throughout process, (2) publicizing suggestion awards, and (3) sharing successful ideas among all FLH locations.
- The FLH Quality Action Team process: Following the plan-do-check-act cycle, the team will monitor system performance and implement necessary improvements.

The Bridge to Improvement program was launched throughout FLH in June. During its initial 2-1/2 months of operation, it captured 31 formal and 11 Shortcut ideas from the 600-person FLH work force. All of these ideas, both large and small, are improving the organization's ability to fulfill its stewardship mandates and serve its customers.

The members of FLH's Multi-Division Quality Action Team for Suggestions, Awards, and Recognition are:

Sponsor - Allen Burden, Chief, Program Planning, Development, and Administration Division, FLH Headquarters

Chairman - Peter Perros, Executive Officer, FLH Headquarters

Members -

LaVice Andre, Secretary, Central Division

John Arriaga, Project Engineer, Western Division

Terri Miller, Personnel Officer, Eastern Division

Ruth Burley, Personnel Management Specialist, Office of Personnel and Training

Joseph Clem, Construction Operations Engineer, Central Division

Lonnie Moss, Division Quality Coordinator, Western Division

Vern Smith, Civil Engineering Technician, Eastern Division

Quality Coordination Team In Transition

Clara Conner, Eastern Federal Lands

The Eastern Federal Lands Highway Quality Coordinator, Clara Conner, was recently promoted to the Executive Officer position in Sterling, Virginia. Clara is well-known in FHWA for her facilitation, training, personal, and technical skills. She is a champion of quality because she understands quality. Congratulations, Clara!

Reprints from Quality Quest

The following items are reprinted from the Department of Interior's outstanding publication, Quality Quest, Summer 1992 issue. For a subscription, call Jerry Watkins, Editor, 202-208-5336.

Why 99.9% Just Won't Do

Is it truly necessary to go for "zero defects?" Why isn't 99.9% defect-free good enough? These and other questions are often posed to quality consultant Jeff Dwar of Red Bluff, California-based QCI International, when he argues for eliminating defects altogether. To make his point, Dewar has come up with some examples of what life would be like if things were done right 99.9% of the time.

At 99.9%, we'd have to accept:

- 1 hour of unsafe drinking water every month
- 2 unsafe plane landings at Chicago's O'Hare International Airport every day
- 16,000 pieces of mail lost by the U.S. Postal Service every hour
- 20,000 incorrect drug prescriptions every year
- 500 incorrect surgical operations every week
- 50 newborn babies dropped at birth by doctors every day

Cut along line

My office location: _____
Job title: _____
Date: _____

I receive my own copy of the newsletter. __ Yes __ No

On a scale of 1 to 6, with 1 representing the least and 6 representing the most:

The FLH Quality News is:

1. Useful. ____
2. Interesting. ____
3. Challenging. ____
4. Easy to understand. ____
5. Well written. ____
6. Well organized. ____
7. Illustrated properly. ____
8. Concise. ____
9. Imaginative. ____
10. Neat. ____
11. Attractive. ____
12. Accurate. ____
13. Timely. ____
14. Educational. ____
15. Fun to read. ____

The FLH Quality News could be improved by:

Cut along line

- 22,000 checks deducted from the wrong bank accounts every hour
- 32,000 missed heartbeats per person every year

Suddenly, the quest for zero defects makes a lot of sense.

"For every complicated problem, there is a solution that is short, simple, and wrong." H.L. Mencken

"Vision without action is merely a dream. Action without vision merely passes the time. Vision with action can change the world." Joel Barker

"Failure is the opportunity to begin again more intelligently." Author Unknown

"Customer satisfaction begins with employee satisfaction." "You can't recall bad service to fix it the way you can recall a bad product to repair it." Roger Podowsky, Vice President, Federal Express

The Quality Evolution

Where Have We Been ... Where Are We Going

1975	1980	1985	1990	1995
Productivity		Quality	Total Quality	
Quality of Work Life	**Quality Circles**	**Employee Involvement**	**Employee Empowerment**	**Self-Directed Teams**
Operations		**Customers**		**Innovation**

Contributed by Jim Hall. Source: QPMA 1990

Customer Survey

Cut it out. Fill it out. Send it in!

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Federal Highway Administration

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FLH Quality News

400 7th Street, S.W. HFL-1

Washington, D.C. 20590

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Volume III Issue 4 Federal Lands Highway Fall 1992

FLH QUALITY NEWS

U.S. Department of Transportation
Federal Highway Administration

400 7th St., S.W. *Washington, D.C. 20590* *(202)-366-9492*

FLH Unit Plan Approved With Accolades

Federal Highway Administrator, Tom Larson, lauded the efforts of Federal Lands Highway, in his approval of the Federal Lands Highway 1993 Unit Plan. He wrote in his September 17, 1992 memorandum to FLH Program Administrator, Tom Edick,

> **"The Unit Plan of the Federal Lands Highway Program is convincing evidence of an excellent controlled planning process. The years of investment in systems development have resulted in strong planning and reporting capabilities and an overall structure for business planning. It also has contributed to enhanced quality and teamwork orientations for FLHP staff. As we discussed, the payoff in terms of measurable quality improvement is what we all need and expect to see within the next couple of years."**

The Executive Quality Council expresses special appreciation to everyone who participated in the preparation of Unit Plans, Sub-unit Plans, and related documents which led to this strong endorsement of our quality and planning process.

As we plan our next Quality and Planning Workshop in Seattle next March, we will be keeping in mind the strong tie we have to FHWA 2000. At the same time we will keep in mind the reason for quality planning as expressed by Dr. J.M. Juran in his new book, *Juran on Quality by Design*, "Product features and failure rates are largely determined during planning for quality." The earlier in the process we can incorporate quality, the more we will learn and the better we will become.

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Publication No. FHWA-FLP 93-001

FLH QUALITY NEWS
Volume III, Issue 4
Fall 1992
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The FLH QUALITY NEWS is an official publication of the Federal Lands Highway Office, Federal Highway Administration, U.S. Department of Transportation. It is published several times a year for educational purposes to promote quality principles among FLH's and other organizations' employees, managers, and supervisors.

Other topics may include information about programs, policies, projects, and administration. Contents of this publication may be used without permission. However, courtesy credit is appreciated.

Mention of private firms in no way constitutes an endorsement or recommendation. Communications should be submitted to: Editor, FLH QUALITY NEWS, Federal Lands Highway Office (HFL-1), Federal Highway Administration, 400 7th Street, S.W., Washington, D.C. 20590.

Executives Attend QPMA Conference

The FLH Executive Quality Council (EQC) attended the October 6-9, 1992 Quality and Productivity Management Conference in New Orleans. The EQC, as a group, had not attended a conference like this for several years. Their willingness to spend this time learning about quality and leadership is a strong signal to the entire organization. The 4-day conference covered "The Leadership Factor: Transforming Your Organization for the Future." Session topics included benchmarking, empowerment, ISO 9000, TQM basics, coaching, internal assessment, leading through customer focused data, strategic measurement, applying quality concepts to building design and construction, goal setting, quality leadership and strategic alignment, and barriers to TQM.

According to Program Administrator, Tom Edick, the conference was excellent. Tom Asked Division Engineers and Division Chiefs some questions about the conference:

Question to Jim Hall - The QPMA Leadership Conference covered such topics as Organization Vision, Strategic Planning, Managing Change, and other important quality improvement attributes. Would you comment on some of those and give us your perspective on what you believe to be the important messages?

Response - First, on Vision: If we took the name out of our vision statement, could we tell it is our agency? That could help us understand and help us meet that vision sooner.

On Strategic Planning: I believe the annual planning process should contain both our business (what we do and plan to do) plus "breakthrough" objectives (things that will make a difference). Those normal business objectives would require little or no follow-up, but continuous quality improvement would be expected. Breakthrough objectives should be in the range of 4 or 5 per year and would be closely monitored and measured.

On Things That Drive Change: We should include middle management who need to be out there with their customers (internal and external) spending time, engaging them in what they need, and listening to them. Also, middle managers are the drivers of making teams work, They are the catalysts for cross-functional team

Unforeseen poor soil conditions, excessive ground water, and conflicts in the plans caused tempers to flair between contract administrators and the contractor. When the main method of pavement rehabilitation failed due to roadway pumping, the project came to a halt. With the new foundation conditions, the original design had to be completely abandoned. "Real-time" design was required as construction was underway and the potential for claims was enormous. It was the perfect time to try partnering.

The formal partnering effort began in February 1991 with mistrust in the air. The first partnering session started with a demand from the contractor for over $1 million due to delays, lost production, and increased costs for the project which was then a year behind schedule.

The facilitator was Dr. J.B. Sullivan, Executive Vice President, Performance Training Corporation. Gradually, with the help of the facilitator, the partnering group began to focus on the real issues and problems. These had to be resolved in order to complete the project in a reasonable time. As agreements were reached and follow-through actions were taken, the trust began to build. Bigger issues then were tackled and resolved. After about 18 months, the partnering was going so well that it became self-facilitating.

Now, in June 1993, all major issues have been resolved. The project is about 84 percent complete. The expected completion date is September 1, 1993 - three months ahead of the original schedule, even with complete redesign of the pavement. On top of that, there are no known claims to be filed by the contractor.

Partnering might not be the answer for all projects, but in this case it was the solution to a crisis situation which was headed for certain failure in the form of litigation and claims.

PARTNERING - DOES IT WORK?

by Pierre Henrichsen, WFLHD Contract Administration Engineer

We in Western Federal Lands certainly think partnering does work, as our experiences over the last two and a half years with the partnering concept have been largely positive ever since we signed the first agreement in early February, 1991. Since then, we have invited Contractors to partner on 10 of 16 projects. The

contractors declined the invitation on three of these. However, a couple of our project engineers were so convinced that partnering is "the only way to fly," that they took it upon themselves to get their contractors involved in the partnering process on two projects where the contract documents did not contain formal partnering invitations.

Contractors also appear to like the idea so far. The word is out that one contractor with whom relations have been less than ideal in the past, and on whose projects we have almost always had major claims, wants to partner on the next project that he may get with the Government.

What is there about partnering that makes it worth entering into? Let us look at our usual (previous) practice of contract administration at the beginning of a project:

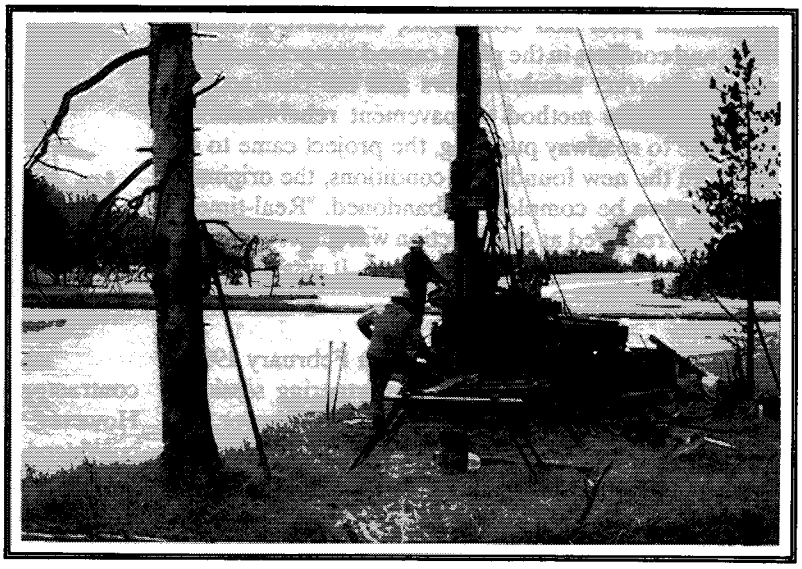
- **A preconstruction conference is held which may or may not be attended by the prime Contractor's principals, or by all of its sub-contractors; nor is the Government's Construction Engineer or any other Government principal above the Construction Operations Engineer present.**
- **Introductions are limited to name, agency/company, and position on the project, and the conference is totally project-oriented.**
- **The Government's representatives go over the main requirements of the job and point out to the Contractor what it is going to have to abide by, and the Contractor presents requests for adjustments in schedules, work items, and other issues.**

Although all those things are important, the pressure is already on both parties, and the "This is what you must comply with" tone tends to make owner and contractor choose sides right then and there.

On the other hand, by using partnering:

- **A partnering workshop is held away from the project site, and in a relaxed atmosphere.**

- **Principals from both owner and contractor/sub-contractors are strongly encouraged to attend and usually do. Attendance also means participation, as there are no "spectators" at a successful partnering workshop.**
- **Introductions are made on the basis of brief partnership interviews with the interviewer introducing the interviewee. The introductions include information on the person being introduced both regarding his/her relationship to the project as well as some personal background on education, hobbies, etc. Emphasis is placed on making both Government and contractor representatives become aware of and appreciate each others interests and goals.**
- **A facilitator usually takes the group through various exercises aimed at promoting the partnership spirit, and continuously draws the attenders into the discussions, all the time guiding the group towards the ultimate goal, the Partnering Agreement.**



Subsurface information is necessary for a quality design. One of Western's drill crews investigates a proposed bridge site on the Grand Loop in Yellowstone National Park.

The conferences I have participated in lasted about a day and a long half, and produced agreements that were signed and fully supported by all participants.

When the people leave the workshop, they know something about each other as persons rather than just: "He/she is so and so for the Contractor," or: "He/she is going to be the Project Engineer". As a result, the foundation for a cooperative and trusting relationship has hopefully been laid.

However, the workshop only gets everybody off to a good start. The partnering process cannot be successful unless the relationships and the spirit of trust and cooperation are carried right out on the project and implemented through a team approach to the management and performance of the contract.

One of the major perceived benefits of entering into a partnering agreement is the resolution of problems and disagreements on the project before they become disputes and/or claims. At the last partnering workshop I participated in, avoidance of claims was expressed in the terms of "lets retire Pierre!" Of course there was nothing personal in this and it was expressed only because one of my principal duties as Construction Administration Engineer is to review, evaluate, and negotiate claims. Obviously, reducing the number of claims, or ideally, eliminating them all together would be a major indication of the success of the partnering process.

Six of the total number of projects on which partnering was implemented have been completed. On five of these, the partnering effort was considered very successful by both the Government and the Contractors. The sixth was not successful, because, in the Project Engineer's judgement, the Contractor did not live up to his end of the bargain. Presently, Western has five projects underway on which partnering agreements have been signed. All of these projects are just getting under way, and it is too early to determine the extent of their success. Two of the projects will stretch over more than one construction season and will provide good tests for how well the partnering concept works on a long-term basis.

Partners for Quality Park Roads

By Cindy Story, WFL

We are building a partnership in a way that promotes clear communication, defines and unites goals, utilizes skills and knowledge of all members so that we have an effective, timely, decision-making process to produce quality products as measured by our pride and satisfaction with our decision-making process and the learning and information gathered in post-construction project evaluation.

Since the early 1920's, the Federal Highway Administration and the National Park Service have been working together to build high-quality park roadway systems within National Parks. Partners for Quality

Park Roads was born in an effort to work more effectively with the expanding construction program, heightened environmental sensitivities, and changing visitor demands within the parks. All this needed to be done while recognizing the diversity of individuals and agencies.

Since **Partners for Quality Park Roads** was set in motion in early 1992, three meetings have been held. These meetings were attended by members from the Western Federal Lands Highway Division (both field and office); the Denver Service Center; the Rocky Mountain Regional Office; and Grand Teton, Yellowstone, and Glacier National Parks. Saltwater Institute (a mutually-selected consultant) facilitated these meetings.

The first session was an interpersonal skills workshop. It was held in Jackson, Wyoming on April 22 through 25, 1992. Thirty-five FHWA and NPS participants attended this 4-day workshop. This workshop was to increase awareness and improve skills in communication, decision making, problem solving, and personal behavior.

The second meeting, held in Missoula, Montana, May 27 and 28, 1992, covered identification of barriers and problems, and action planning. Participants identified 24 problem areas and their impacts. Action groups were formed to work on the five areas ranked as being of highest priority: (1) scheduling/ task directives; (2) contractor and employee housing problems within individual parks; (3) writing project goals, standards, and values; (4) decision-makers' partnering participation; and (5) role clarity (FHWA, NPS, Parks, etc). Channels to follow for resolution were determined for these five areas.

The third Partners' meeting was held in Glenwood Springs, Colorado, December 8 - 11, 1992. At that meeting, Partners voted against the planned agenda and created their own:

Action teams were formed to address environmental, landscape, design, and construction issues within the individual parks (Glacier, Grand Teton, and Yellowstone).

Members analyzed the concurrent design process from the scoping stage through award. The forty-two participants separated into five smaller, maxi-mix groups (groups that included partners from each entity), and with the help of facilitators within each group, listed the problem areas of each step of the process, and brainstormed ideas for improvement and implementation.

The five action teams originally formed at the Missoula meeting, plus one formed at this meeting (park road teams for management buy-in), reported on their accomplishments. Each group discussed the barriers, costs, and plans of action for its task.

A Steering Committee representing each entity of the Partnership was formed. The committee's main functions are: setting agendas, providing guidance, reviewing data from facilitator and action teams, and orienting new partners.

The Partnership broke away from the single, large group and formed park-specific partnerships. Members working within each Park entity will hold biannual park partnering sessions, before and after construction season, to address park-related scoping, design, and construction issues.

All Partners attending this meeting toured the much acclaimed Glenwood Canyon project by bus, following a slide and video presentation which gave an overview of the construction process. John McCarty of the Colorado Department of Highways gave this presentation from a Landscape Architect's point of view. (There is much written on the Glenwood Canyon project in Dr. Larson's Administrator's Notes dated October 16, 1992, and the November issue of DOT Today.)

Since the Glenwood meeting and at the request of the Steering Committee, Jim Hall (WFLHD Division Engineer), Wade Johnson (WFLHD Designer and Steering Committee Chairperson), and Ken Raithel (Manager, Central Team, NPS) made presentations at the National Park Service's Park Superintendents' Meeting. This meeting was held in Rapid City, South Dakota, on May 6, 1993. The main topic presented was entitled, "Four Things Superintendents Can Do To Improve Productivity, Quality, and Efficiency in the Delivery of Park Road Improvements. With the increase of NPS/FHWA projects in the Western Region, suggestions have been made to expand the Partnership to include the Denver Service Center's Western Team and elements of the Pacific Northwest Region of the National Park Service.

Through **Partners for Quality Park Roads**, Partners are not only building quality park roads, they are building positive, working relationships.

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TQM at Federal Express

by Carl Triplett EFL

It was a clear and calm night at the Memphis International Airport. I looked at my watch which read 11:20 pm. According to our guide, we were about to see controlled chaos. Our guide was right. Nearly 5,000 employees were already arriving at the building entrance to begin their work which would last only about 4 hours. At around 11:40 pm, as far as the eye could see in the Memphis sky, Federal Express (FEDEX) aircraft were lining up to land at the Memphis Hub. One-by-one, 95 aircraft from all over the nation were landing to deliver letters and packages which would be sorted and then reloaded into the aircraft. The Memphis sky would again become littered with loaded FEDEX aircraft for one and a half hours--one plane leaving every minute--to speed the cargo to its destination. The Memphis Hub handles approximately 800,000 of FEDEX's 1.5 million items every night. The remaining 700,000 are process through one of 6 other regional facilities.

Mark Chatfield and I, with others from the Quality & Productivity Management Association (QPMA), were there that night to watch FEDEX's largest sorting facility in action and to learn more of their successes in TQM. FEDEX's successes are proven by their receipt of a Malcolm Baldrige National Quality Award in 1990.

FEDEX's management is based on the "People, Service, Profit" philosophy. As Fred Smith, CEO of FEDEX, puts it: "When people are placed first, they will provide the highest possible service, and profits will follow."

PEOPLE

The quality of people are measured by performance review scores (for non-managers) and a leadership index (for managers). Each employee is given a performance review every year, and Merit Pay Increases are granted based on the employee's performance review score. Managers are anonymously evaluated by their employees using a "Survey/Feedback/Action" (SFA) system. A manager's employees anonymously complete a Survey which is sent to the Personnel Department where the results are compiled for each work group. To protect an employee's anonymity, a manager of an office smaller than 3 people does not receive survey results directly. Their results go to the next level supervisor for his review and discussion with the manager. The manager then has a mandatory **Feedback** session with his employees to discuss the **Action** to correct any problems discovered by the survey.

Training of employees is very important to FEDEX to insure that each employee has a thorough understanding of what is expected of them in their job. Depending on their job, employees are given Skills Training which equips the employee to do his/her job. Recurrent training is also given to many employees. For example, Customer Service Representatives are given recurrent training each month to keep them abreast of the company's new or changing services. Management training is also given to employees before they become managers. The Leadership Evaluation and Assessment Process evaluates an employee's leadership potential and gives the employee an opportunity to become familiar with what is required of a manager. Completion of this process is required before one can apply for a managerial position.

Because FEDEX realizes that managers must buy into the concept of quality management, quality training for managers is provided every 6 months. Training is given regularly to convey the strong message that quality management is "here to stay." To do this, FEDEX organized two schools to augment the teaching of quality management. FEDEX's Leadership Institute provides training to management employees and the Quality Academy offers training to non-management employees.

Employees are insured fair treatment by FEDEX's Guaranteed Fair Treatment Policy (GFTP). An employee with a grievance, issues it in writing to his/her manager (Manager Review). The manager has seven days to act on the grievance. If the employee is not satisfied with the results, the grievance is filed with an Officer (Vice President or Senior Vice President) who has 10 days to act (Officer Review). If the employee is still not satisfied, the grievance is submitted to the Appeals Board on which the CEO is a member (Executive Review). This step is allowed a duration of 14 days and is the end of the GFTP.

Employees are empowered to take risks to insure customer satisfaction. FEDEX has a very flat corporate structure. There are only managers and senior managers between the front-line employees and executive management. Because of this corporate structure, employees must be empowered to do whatever necessary, within the company policies and without management approval, to satisfy a customer. In one instance, a courier misplaced the keys to a letter drop-box which was located far from the FEDEX office. The courier,

wanting to insure that the customer's packages would be delivered on time, picked up the entire drop box and loaded it into his van where the drop box was subsequently opened at the sorting facility. Another example of employee empowerment is seen in the customer service department where representatives can resolve customer billing problems without management approval for up to $2000.

Employee communications is also very important to FEDEX. It is so important that Fred Smith demanded that television monitors be placed throughout the company even though no one could justify the costs. At the Memphis hub, television monitors are mounted along a long hallway along which all employees walk on their way to their work areas. For the length of time that it takes the employee to walk this distance, an employee can watch an entire episode of FXTV (Federal Express Television) and be up to date on the latest news and happenings at FEDEX. There are also audience-targeted programs for certain employee groups (couriers, customer service representatives, etc.). A weekly newsletter is also published to inform the local employees of FEDEX's competition and happenings that will take place in the coming week. In addition, a monthly newspaper is distributed company-wide to inform employees about persons receiving awards, questions and answers from employees, and GFTP grievances with their resolutions (the employee's names are removed).

QUALITY

FEDEX's quality of service is measured by 12 Service Quality Indicators which include numeric responses such as the number of abandoned customer service calls, damaged packages, lost packages, late deliveries, etc. Each of the 12 SQI's are given a weight and then totalled each day. Each week the managers are given these totals so that they can numerically see the quality of their service over the past week. FEDEX also measures quality of service by several types of customer surveys. FEDEX is not exactly certain how the SQI number and the Customer Satisfaction Survey correlate, but as the SQI goes down, FEDEX has found that customer satisfaction goes up.

PROFIT

Profit is probably the easiest to measure and is defined as FEDEX's pre-tax profit. Each manager is only responsible for what he or she can control.

EFLHD's effort to continuously improve is very similar to FEDEX's. The company's Quality Improvement Process (QIP) is run by the vice president of internal audit and quality assurance (similar to our TQM coordinators), and reports directly to Fred Smith, CEO. In addition, the QIP organizational structure is very similar to FLH's Executive Quality Council and Division Quality Council. Quality Action Teams, similar to EFLHD's, are always ongoing. At any given time, 1,000 QATs are active in disclosing and solving problems. To make certain that each of FEDEX's 12 geographic divisions are striving towards improvement, each division must submit an annual Quality Improvement Plan to link it with the overall corporate goals.

More about FEDEX's TQM methods can be found in *Blueprints for Service Quality: The Federal Express Approach*, from the American Management Association at 518-891-5510.

[The Executive Quality Council has agreed to test the FedEx's Survey, Feedback, Action concept as part of our Cultural Survey. The pilot is planned for this summer. Ed.]

Empowerment

From Ken Somers, Principal, The Cumberland Group, "Defining the Boundaries of Empowerment" Spring 1993 Tapping the Network Journal --

What is empowerment? A simple straight-forward definition of empowerment is, "To provide with the means and opportunity to make decisions and take actions which directly affect the customer."

Empowerment is **NOT**:

- Indiscriminate assignment of work. That's dumping.
- Appointing someone as your representative. That's delegation.
- Allowing discretionary power without boundaries. That's anarchy.
- Employees replacing managers. Those are different roles and issues.
- Asking people to help and be involved in your decisions. That's participative management.

A Note to FLH

From: Ben Tang, Illinois Division, FHWA

To: Tom Edick, FLH Program Administrator

Date: Wednesday, April 21, 1993

Subject: FLH TQM

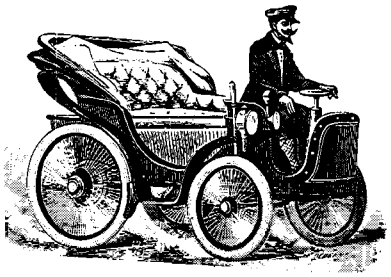
I have read through the package of journals and documents you sent me. It's awesome! I probably won't recognize the FLH organization culture that I once was a part of, but I envy the success and feel inspired. You are turning FLH into a world class engineering organization. Congratulations.

I found the "Guidelines for Establishing and Operating Quality Action Teams" to be very useful to me in getting started. After reading the document, I believe that people should feel they are empowered and are expected to be successful in carrying out their missions with total quality in their minds. You have provided them with resources to succeed.

The "Bridge to Improvement" employee suggestion program is excellent too. Its built-in measurement of success will bring out the best of your people.

I enjoy reading the articles in the *FLH Quality News*. They are well orchestrated and effective in moving the people within the organization towards TQM. It is an effective communication tool. I feel charged up just reading them. I would like to be placed on your mailing list for future issues of this newsletter.

Thank you for sharing your success.



Reinventing Government

by Tom Edick and Larry Smith, June 9, 1993

Deputy Secretary, Mort Downey, held a one hour listening session with the Department of Transportation executives. It was to obtain input to the DOT's Government Improvement Initiative under the Administration's Reinventing Government program. Most of the executives were from DOT headquarters. Some of the attendees were on the modal or Departmental cross-cutting teams established last month as part of the DOT's initiative.

The meeting was primarily an opportunity for the executives to express and convey to the Deputy Secretary what we could do better to serve our customers, things that we needed to do less or more of, areas needing improvement, obstacles and barriers impeding work, and recommendations on what might be done to fix some of the problems. Downey served as a host moderator and interacted with the audience in a non-threatening mode, solicited comments on certain areas, and occasionally asked for suggestions on what could be done about the issues. The session was video recorded. About 200 people attended.

The very first audience comment was on FTE resources or lack thereof. When asked what could be done, we offered a suggestion that managers be given flexibility in applying the onerous regulations; manage to budget, not FTE; measure accomplishment results against program objectives, not the number of employees; and hold managers accountable. The consensus of the group seemed to be that experimentation with various options would be a good way to go but that experiments never seem to be put into practice, e.g. China Lake.

Following that opening set of discussions, the interest shifted right to the procurement problems in the Department. A lot of excellent comments were made here, as might be expected with so much more major system/FIRMR acquisitions, service contracting, and R&D work going to contract. Problems seemed quite universal across the Department. Discussions got into the area of partnering up front as one means to avoiding some of the process and delay problems, particularly among the procurement office, program requirements office, and outside stakeholders.

Following the discussion about the procurement area, comments then moved to sharing information on processes and systems that seemed to be working in the research and development areas, and finally into supplier partnership arrangements. Parts of the FAA and the FRA organizations have done some innovative things through a public-private partnership to solve problems or assist with program delivery.

Downey solicited comments in the customer and measurement areas. The group seemed to be less able to articulate the customer issues and opportunities and kept slipping into discussions in other areas. One executive opened the employee issues as a customer issue

which then generated some spirited discussions in the whole area of personnel management issues such as the inflexible personnel regulations, the awards, recognition and rating systems, technical tracks vs. program management, etc. Poignant comments were made on the realities of the political interventions in DOT businesses and the regulation making processes. It was recognized that there is a wide and sometimes not easily defined DOT customers.

The audience comments, concerns and recommendations were well articulated, they were focused at an intellectual level, not so much complaints as they were instructive.

The Employee Focus discussion centered on the need to make employees happy for maximum efficiency and quality of product. The discussion had four focuses: 1) empowerment, which related back to the first 2 subjects and went further to discuss getting best input and productivity improvements from the lower levels if they are allowed to do their job. This lead to comments to lighten up on requirements, and particular to avoid making rules because one someone somewhere took advantage of the system. Deal with the problem and let others continue to do their job without restrictions. 2) the need to improve the reward system, 3) the need for managers to be more people oriented particularly in their understanding of diversity issues, and, 4) the need to have a better system of performance both in positive recognition and, probably the strongest point, in the ability to weed out poor performers.

Quality Management - Looking at the above issues, you can see the whole discussion wandered around quality management. The overall objective was improvement and the discussion was focused on employees and customers. The point was made that OST needs a policy on quality management that will encompass all the issues discussed.

It was emphazied several times that the Department's efforts for this next few months would not end, but would continue on well after this initial exercise. The meeting was allowed to extend an additional 15 minutes.

[Note: FLHO's Cindy Cooksey is detailed to one of the Department's cross-cutting teams, Administrative Improvement, until September. ed.]

Process Management Teams Interdivisional Check-in

Lakewood, Colorado, Tuesday, June 15, 1993

The second interdivisional check-in for the Process Management Teams (PMT) was held at the Lakewood Sheraton June 14 and 15, 1993. The Winter 1993 edition of FLH Quality News contains much of the detail about this key FLH initiative. The PMT's began work in January on three critical processes: Location, Design, and Survey/Mapping. Each of the three field divisions sponsored two teams. Work on the five PMT sessions per team was intense. The total work effort by team members amounted to about 6,800 work hours, or about 110 work hours (14 work days) per person for the 62 team members, process owners, and facilitators involved. Since the "day work" was ongoing, most team members worked extra hours to ensure success. Their exemplary work was acknowledged at the check-in meeting by the Process Manager Liaison, Tony Welch. The EQC attended the one-day session.

All six teams were facilitated by FLH and they were assisted by The Pacesetter Group, Inc., of Princeton, New Jersey. The teams each were very successful. Pacesetter's President, Mike Hierl, went so far as to say that the results exceeded those of other organizations. He praised the excellence of the facilitators and the high degree of support received from the process owners. Facilitators were Ed Hammontree and George Parson, WFL; Charmain Farrar and LaVica Andre, CFL; Vivian Hanna and Shoukry Elnahal, EFL. Process owners were Dave Weber - EFL Design, Paul Schneider - EFL Location; Eugene Samuelson - CFL Survey/Mapping, Larry Henry - CFL Design; George Parson - WFL Survey/Mapping, Dick Gatten - WFL Design.

Some have asked how the PMT's fit in the scheme of Total Quality Management. The FLH Mission describes <u>what</u> the organization does. TQM describes <u>how</u> FLH works. Strategic Business Planning directs the long-range course of FLH and links resources available to work needed to accomplish the goals. Process management is putting TQM into practice for continuous improvement.

Process management is a tool to permit employees to understand what they are doing within major FLH systems and operations, such as Location or Design and identify areas which need improvement. Quality Action Teams, Quality Improvement Teams, Process Improvement Teams, or special teams such as Value En-

gineering teams and Partnering teams take the more specific areas (processes and subsystems) which need to be enhanced, and go through a step-by-step problem solving arrangement to implement improvements. Other teams which might be committees, task forces, or natural work groups, take on assignments to improve or implement special initiatives identified by management or through one of several mechanisms for employees to suggest changes. All these fit together to work toward the overreaching goals of continuous improvement, employee involvement, and customer focus. If it is working (and it is) the annual agencywide measurements of the FLH organizational culture show improvements, employees' morale increases, and of course the customers are real winners.

Process management, then, is one of the key tools of Total Quality Management. It represents a structured, approach to understanding the job, finding bottlenecks, documenting the potential value of removing or alleviating the constriction, and taking action to make things work better. Although the training and guidelines for teams provided information on how to go about process analysis and improvement, the lack of a structured process has held people back. Process improvement, done correctly, is empowerment (See the article on empowerment on page 7.) We now have the process and people who have had direct experience in a fast-moving, results-oriented teams which can improve the work in a meaningful way.

In the next several months Division process changes will be made to carry out the improvements identified using the PMTs. As part of the FLH Strategic Business Plan and Division Action Plans, each Division will be encouraged to apply PMT techniques to another area of project development between now an May 1994. While this is happening, process improvement techniques will be customized for further, more routine, use in FLH by any individual or group wanting to thoroughly understand, document, and improve a process, large or small.

The six Process Management Teams can be proud of their pioneering work. FLH looks forward to the improvements which will be implemented over the next several months as a result of their efforts.

I like a look of agony,
Because I know it's true;
Men do not sham convulsion,
Nor simulate a throe.

Emily Dickinson, Poems, IV

The Pain of Strategic Planning

by Mark Chatfield

At the risk of sounding trite, the saying goes "No Pain, No Gain." The trouble is, that the converse is not necessarily true, "Pain Ensures Gain." When we naively set out three years ago to quickly identify key indicators for FLH, we did not realize where we were headed. We were in fog headed up a winding, steep, rock-strewn path of strategic planning.

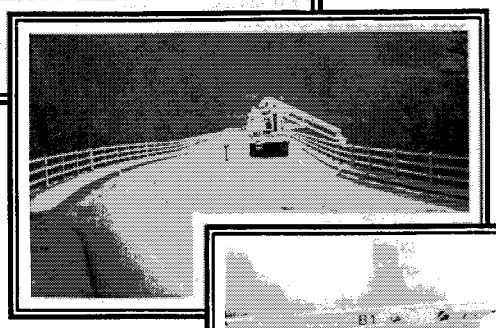
Last year our path merged with that of FHWA 2000 and became wider but not less difficult. Now the fog is lifting, some of the rocks are at least visible. We are beginning to see that turning back is impossible. No individual or agency can afford to blindly go forward without understanding its resources and attributing them in a manner that permits the work to be done with quality. If Federal Lands Highway over-commits its people, the work which is done will turn shoddy, customers will express dissatisfaction, and we will have lost the quality race.

Last year's plan called for over 900 work years of effort without contingencies. Needless to say, with only a few over 600 people, the 1993 plan will be hard to accomplish without considerable cotract services and/or deferred actions. Contingencies; in 1992 it was the Booz-Allen, Hamilton Management Review. In 1993 it was the Procurement Review. Who knows what it will be in 1994. There will be something major. When it happens, there are only three things that can accommodate it; they are all bad: 1) Other planned work does not get done, 2) The planned work is done in less time than it should take, resulting in lower quality, or 3) People put it extra hours, robbing their families and selves of happiness and ultimately lowering their quality and productivity in the work place. Anything we can do to avoid those consequences is worth the effort. Proper strategic planning is the only way to do it.

In June the EQC met to reach fundamental on the future of the organization by developing a final draft of the FY 1994-96 Strategic Business Plan. "Strategic" means long-range, change initiatives. "Business" means our everyday work. "Plan" means a system to reasonably accomplish future activities. A simplified tracking and reporting system was adopted based on exception reporting by Goal Managers of strategic elements of the plan. Although estimates were not complete, three of goals appear to be much more work intensive than the others: Process Management, Reducing Fourth Quarter Awards, and Metric Conversion.

National Quality Initiative - Western States Seminar

by Mark Chatfield

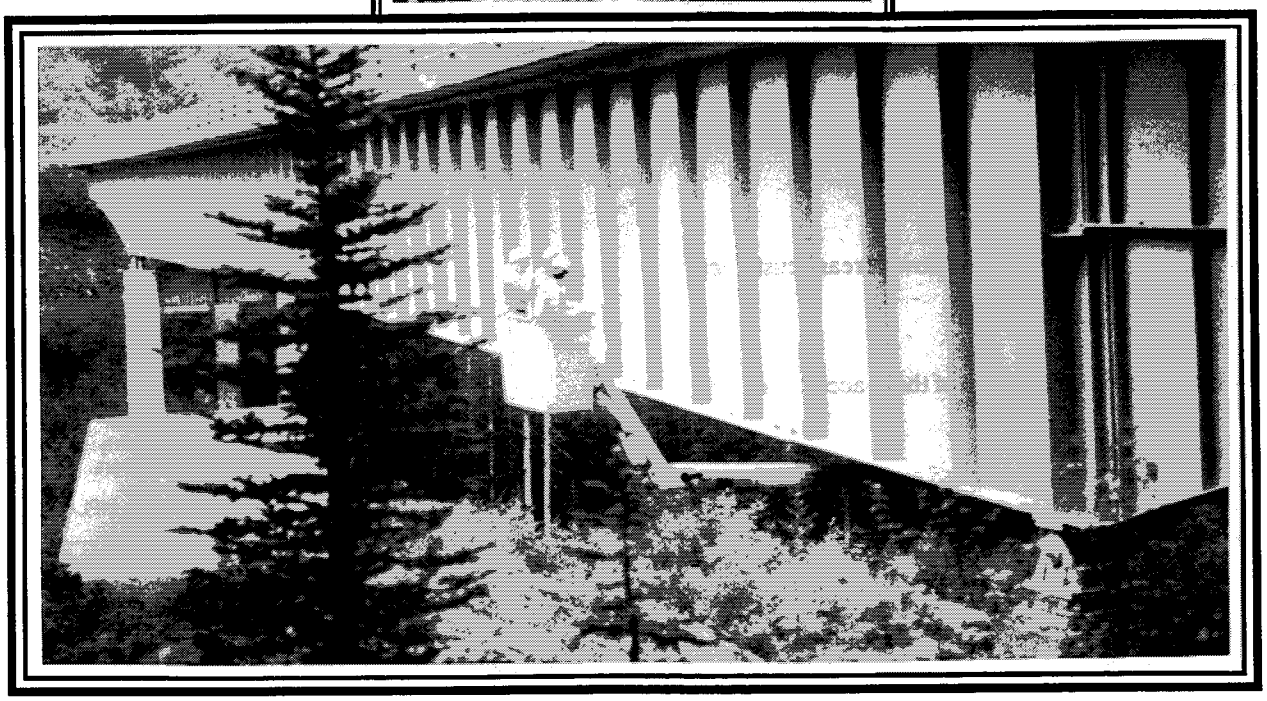


Charmaine Farrar, Lonnie Moss, and I represented the QCT at the May 27-28 Western States National Quality Initiative Seminar in Phoenix. Jim Amenta was still recuperating from his surgery. Other FLH representatives included Jerry Budwig, Shari Brandt, and Rick Suarez from Central and Ken Welborn from Western.

Tony Kane's talk was well done - his topic was customer focus in highways. His points were balanced and well-presented: "We've tended to think of ourselves as technical experts giving the people what we know they want ... what tends to be lost in this whirl of activity is what has become THE quality word: customer." "75 percent of the respondents to a 1990 TRIP survey said traffic congestion is a problem; 60 percent said pavement conditions."

Larry Bonine, the new ADOT Director, is clearly an unequivocating champion of quality. He announced that ADOT went through a Malcolm Baldrige assessment and scored a lowly 167 out of a possible 1,000. They have had tremendous success in partnering and have marketed their efforts strongly. Obviously, however, other quality initiatives have not been pursued with equal intensity.

There was a disparity between the general sessions and the breakouts which I attended. In the general sessions, quality was spoken of across the spectrum of high-



"Snooper" Inspection of the Nisqually Glacier Bridge, Mt. Rainier National Park, Washington

way activities -- from planning through operations, from technical activities to interpersonal relationships. However, in the breakout sessions, only technical issues seemed to be covered. My perception is that top highway industry leaders want quality in the generic sense and understand fully that the successes the highway industry has had in quality have been concentrated in technical areas. These technical, statistical quality improvements are often called the "hard" side of quality. The "soft" side involves employee empowerment, recognition, coaching, removing fear from the work place, etc. The trouble is, the "hard" side is easy; the "soft" side is hard. It is natural, albeit dangerous, to gravitate to past successes because they are comfortable and do not represent real change.

FHWA Division Offices are to take the lead in arranging for the 50 State workshops which are to take place between now and March 1994. The NQI Steering Committee is providing a tool kit for the workshops.

TQM Today

Exerpts from Constructor, May 1993

"TQM emphasizes improving processes. By improving processes a company can proceed in a deliberate manner toward meeting [its] goals.

Every job activity is a process that includes inputs and outputs, suppliers, and customers. [Process Management] breaks down all company functions into discreet processes which can then be systematically examined for improvement.

There are five basic ways to improve processes:

- Reduce required resources,
- Reduce errors,
- Meet expectations of the downstream customer,
- Increase safety, and
- Increase the satisfaction of those accomplishing it.

Training should not be regarded as an expense. Instead it must be thought of as an investment in the future of the employees of the company.

The cost of quality should be measured and made visible because it shows how much potential there is for improvement and progress."

Recommended Reading

Libraries

Each Federal Lands Highway Division and Headquarters maintains a library of books, pamphlets, conference proceedings, video tapes, audio tapes, and other materials related to quality. See your coordinator for information.

Books

Making Quality Work, A Leadership Guide for the Results-Driven Manager, Y.S. Chang, George Labovitz, Victor Rosansky, Harper Business, 1993.

Handbook for Productivity Measurement and Improvement, William F. Christopher, ed., Carl G. Thor, ed., Productivy Press, 1993

Reinventing Government, "How the Entrepreneurial Spirit is Transforming the Public Sector From Schoolhouse to Statehouse, City Hall to the Pentagon," David Osborne and Ted Gaebler, Addison-Wesley Publishing Company, Inc., 1992.

Information Sources

Federal Quality Institute

The Federal Quality Institute, P.O. Box 99, Washington, DC 20044-0099 provides quality management services to all Federal Agencies. Subscribe to the Federal Quality News by FAX 202-376-3765.

Conferences

The National Quality Initiative under FHWA's Demonstration Project No. 89, is presenting a series of State Seminars on Highway Quality. Schedules to be announced.

Miscellaneous

Brochure

TQM in FLH, an attractive brochure describes our Vision, Mission, Guiding Principles as well as our organization. Your FLH Division Office has copies.

Team Guidelines

The popular book, **Guidelines for Establishing and Operating Quality Action Teams** is available from the Division Quality Coordinator. Additional copies may be obtained by calling Headquarters, 366-9492.

Training Opportunities

Training in all aspects of TQM is available from many sources, internal and external. See your Quality Coordinator for ideas and to help you make arrangements.

Speech Material

Ever have the opportunity to speak on TQM? Your training and exposure in FLH to the most current and most job-satisfying ways to do your work, makes you a valuable resource to others. We can provide visual aids and written material to help in your preparation. Call 366-9492 or write: FLH Quality News, HFL-1, 400 7th St., S.W., Washington, D.C. 20590

Strategic Planning

Integrating quality and strategic planning is HARD work. Federal Lands Highway has direct experience to share. Contact Mark Chatfield, HFL-1, 202-366-9492.

Volume IV Issue 4 Federal Lands Highway Fall 1993

FLH QUALITY NEWS

U.S. Department of Transportation
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Empowerment–Quality or Anarchy?

By Mark Chatfield

You have heard about empowerment. You have heard that empowerment is good, it's FLH policy. Do you know what it really means? Does it mean the same thing to your supervisor as it does to you? Here are some quick ideas to help define empowerment and clarify the term. When reference is made to an employee, the same application may be made to a team.

In its simplest definition, empowerment is the means for sharing decisions and responsibilities. While there is no one definition accepted by everyone, Lorne Plunkett and Robert Fournier shed some light on the subject in their book *Participative Management*. They define empowerment as a philosophy and process that demands organizational decision making be made in such a way that inputs and responsibilities are extended to the lowest level appropriate, They go on to say that empowerment is the mechanism by which responsibility is vested in teams and individuals.

> **"Put simply, all federal agencies will delegate, decentralize and empower employees to make decisions. This will let front-line and front-office workers use their creative judgment." Federal Times, September 23, 1993**
>
> **"Sometimes it seems to me that the whole Federal government is organized in the vain pursuit of preventing anyone from making a mistake." Vice President Al Gore at a town hall meeting with GSA employees July 27, 1993**

It may help by understanding what lack of empowerment means. Some of the following is based on the book, *Zapp! The Lightning of Empowerment* by William C. Byham; and Commitment Plus, the QPMA Newsletter. Employees who are not empowered have these characteristics:

- They do only what they are told.
- Their job doesn't really matter.
- They don't know how well they are doing.
- They believe they have to keep their mouth shut.
- Their job is different from who they are.
- They have little or no control over their work.
- They are team members in name but not in fact.

As a result:

- Hardly anybody gets excited about anything that has to do with work.
- The things they do get excited about are outside of work.
- People care about their paychecks, their vacations, and their pensions. Beyond that, forget it.

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Publication No. FHWA-FLP 94-001

FLH QUALITY NEWS

Volume IV, Issue 4

Fall 1993

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The FLH QUALITY NEWS is an official publication of the Federal Lands Highway Office, Federal Highway Administration, U.S. Department of Transportation. It is published several times a year for educational purposes to promote quality principles among FLH's and other organization's employees, managers, and supervisors.

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- The general attitude is: Don't do anything you don't have to do. Then do as little as possible.
- All day, it's like everybody is in slow motion -- until it's time to go home. Then it's like watching a videotape in fast forward.
- If someone talks about doing a better job, there are a lot of blank looks.
- Nobody takes any more responsibility than they have to. If the jobs don't get done, it's the boss' problem, not theirs.
- People do just enough to get by so they won't get yelled at or get fired.
- Nobody cares about improvements; they're all afraid of change.

Employees who <u>are</u> empowered have these characteristics:

- They understand the organization's vision.
- They understand the organization's goals and priorities.
- They belong to a team.
- They plan their work.
- Their job belongs to them and is part of a team effort.
- They are responsible.
- Their job counts for something.
- They know where they stand.
- They measure their results.
- They have some say in how things are done.
- Their job is a part of who they are.
- They have control over their work.
- They can make improvements on how things get done.
- They do their job as a partnership with their suppliers and customers.

As a result:

- Performance is improving.
- Work is more fun.
- Communication, interaction, and trust levels are high.
- Responsibility is shared.
- Authority is shared.
- Identity is shared.
- Energy is shared.
- Power is shared.
- Customer needs are met or exceeded.
- Quality improves.

Empowerment does <u>not</u> mean doing whatever an employee pleases. Sometimes people seem to think

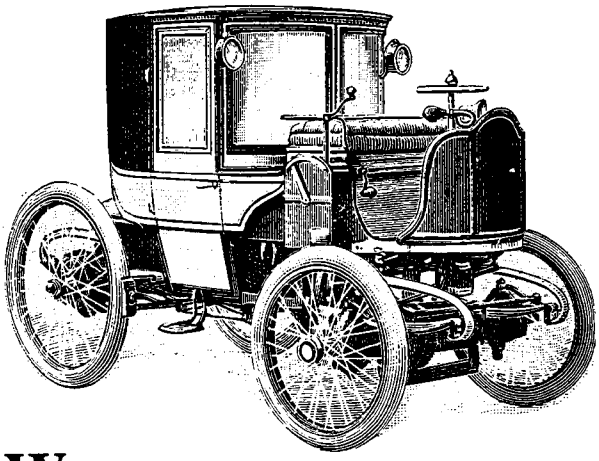
that since they are empowered, they don't need to listen to or respect their supervisors or coaches.

If such lack of discipline were permitted for a professional team like the Minnesota Vikings, the running backs might be having a casual conversation in the huddle and miss the next play. The left tackle might take a look at his 320-pound opponent and decide to switch over to the right guard position. Where it might be "fun" for the running backs and less stressful for the left tackle, it surely would not be a contributing factor to the team's next first down.

Unled and undisciplined people do not represent empowerment. They represent anarchy. An empowered employee is empowered to do what the organization needs done in a way that benefits the organization as well as the employee. Empowerment requires boundaries to be set and communicated. Thus, empowerment allows individuals to know where they stand and sets their authority to make decisions without repercussion. In doing so, the employee can focus on real accomplishment--a contribution to the work at hand.

Reinventing FLH?

by Mark Chatfield, HFL-1



With all the activity and interest in Vice President Gore's "Reinventing Government" initiative, every Federal agency is going through a self-examination. Some are having an identity crisis. Some are finding out that their services can be made more efficient and effective. Others are confronted with questions as to how and by whom the services should be performed. Federal Lands Highway was not an exception. Specifically, the FLH's mission to design and construct highways was questioned. A State transportation director wrote to Bob Stone, Project Director of the National Performance Review:

"Why not more Federal-State interagency support agreements? Why does the Federal government maintain staff to design, construct, and maintain Federal streets and roads when there is a State agency capable of doing the work?"

The answer involves legal sanctions, boundary issues, resources, National security, unique environments, sociology, jurisdiction, and past problems.

FLH's response to Bob Stone included the following:

- **Most States do not have statutory authority to act on behalf of the Federal Government on federally owned roads. States do not own or have primary jurisdiction for the management of Federal lands and support facilities, and therefore would not have unilateral authority to act on federally owned facilities. Federally owned highway facilities include those on military bases, other properties with National security characteristics, as well as National Parks, National Forests, Indian lands, and other Federal lands.**
- **State jurisdictions may not be coincident with Federal jurisdictions. The Yellowstone National Park is in three States.**
- **In some situations where a State could act on behalf of a Federal agency, they have been reluctant to undertake the work. Some of the reluctance was due to other priorities or insufficient State resources to accommodate their own program and undertake additional work. In others cases, the reluctance was due to complicated projects involving sensitive environmental or right-of-way concerns wherein the State did not want to get involved. Two examples are in California where the FHWA was requested by to undertake the defense access road projects at LaMesa and Joshua Tree.**
- **Funding of Federal projects is generally sporadic. To ensure timely completion of projects, it is therefore more advantageous to rely upon Federal agencies to undertake the project. They cannot wait to see if a State is willing or not willing to undertake a project.**
- **There are instances where public authorities (States, and counties) have petitioned the Federal Government to assume responsibility of certain transportation facilities which they cannot nor do not want, even to the extent that they obtain Federal legislation to transfer jurisdiction and responsibility.**
- **Previous initiatives were undertaken to transfer the Forest Highway program responsibilities to the states. In the 1970's, some States were allowed to undertake the Forest Highway program. The States began to place priorities on projects that served State's interests at the expense of projects serving National Forest needs. This resulted in a 1977 GAO study that instructed the FHWA and Forest Service to reassume its former Federal role and responsibility in setting priorities and refocus the program to those classes of roads which serve the National Forest System.**
- **Buy-Indian and Indian Self-Determination and Education Assistance Act provisions are legislatively required for the Indian reservation roads (IRR) program. The emphasis is to use the maximum amount of Indian-owned firms and Native Americans in the IRR program.**
- **The FHWA has provided engineering and technical services to the National Park Service (under agreement for the past 70 years) for the planning, design and con-**

struction of park roads and bridges. The National Park road and bridge planning and design standards, practices and processes vary considerably from those of the States. The FHWA and the NPS work as a team understanding each others role, responsibilities and requirements involving complicated road projects in environmentally sensitive National park lands.

- **Federal projects already are closely coordinated with States and local jurisdictions under interagency agreements which call for shared responsibilities where appropriate. Legal authority, efficiency and cost effectiveness are the governing criteria as to which party and what responsibilities each have in funding and completing work. The FHWA has authority to provide engineering and other assistance to Federal, states and state cooperating agencies, and foreign countries. This cooperation is performed by request and under provisions of a joint interagency agreement.**
- **Projects administered by FHWA provides an opportunity for development and dissemination of new technology. It also provides opportunities for training and development of FHWA engineers.**

If you ever have anyone ask why FLH exists, you might mention a few of these points.

TQM IN PROJECT ORIENTED ORGANIZATIONS

by Craig Larson, Project Status Engineer, CFLHD

This year's Welcom Software Technology User Conference presented numerous insights as to how "project oriented" organizations, such as ours, should be utilizing Total Quality Management. Welcom Software produces the Open Plan Software that we use as the base for our Program Resource Management System.

John Ames, one of the speakers, explained that in a "typical generic" implementation of TQM the "'quality' of the finished product is often not seen as directly related to the cost/schedule control." However, in a "project-oriented" TQM implementation the focus is on cost/schedule control and exception tracking. Exceptions include such issues as additions to the scope of work, engineering errors, rework, omissions from the plans, lost time, and fabrication errors. Schedule exceptions include delays in receiving approvals and/or supplying information, data, and/or designs to internal or external customers.

A "project oriented" organization utilizes a team made up of individuals from different disciplines to design a project. The initial job of the team is to establish a baseline for the project that includes:

- Defining the scope of work
- Scheduling the work
- Allocating a budget for the work (includes the resources and the responsibility for performing identified tasks)

After work has begun on the project, the status can be tracked using the "earned value." The earned value of work completed is the basis of tracking budget and schedule progress against the established baseline. In terms of project management, this is defined as a project performance measurement. Performance measurement is the "comparison of actual performance against a baseline plan." Bob Kemps, in his book *Fundamentals of Project Performance Measurement*, emphasizes that "without a stable baseline, meaningful performance measurement cannot take place and performance trends cannot be ascertained." In addition, he explains in his book that "work should not be turned on and off by informal direction and without accountability."

Using the Program Resource Management System (PRMS) is a motion toward the use of project performance measurement. However, here in the Central Division, we need to place more emphasis on establishing the baseline and then comparing it to the actual work performed. Our new scoping process will help us to better define the scope of work at the start of a project. Eventually, through the improved scoping process, we will be able to develop better baseline schedules for projects. In addition, we are working toward a goal of performance measurement by establishing a system through the Time and Attendance

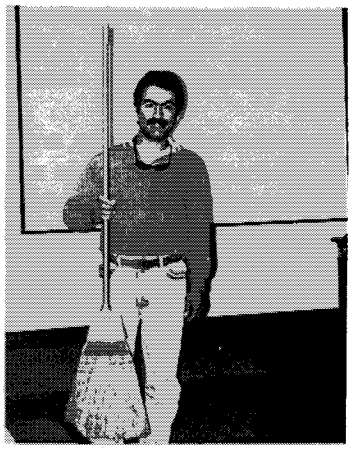
system that will track work spent on individual PRMS activities. Our goal in the Central Division is to develop a project scheduling system that everyone will "buy-into" and that will help us plan for both the short- and long-term future.

A Success Story in CFLHD

After a year of operation in the Central Division, the Bridge to Improvement Suggestion Program has proved to be one of the most successful programs initiated through Total Quality Management (TQM). In comparison to the one suggestion we received under the old Suggestion Program, that was not adopted, we have received 68 suggestions since the start of the new program. The table presents the statistical results of the program in the Central Division.

In addition to monetary and non-monetary awards, employees receive other benefits from the Suggestion Program. It has encouraged employees to look for improvements--a central principle of the TQM philosophy. It has also become a "tool of communication." Employees are introduced to new ideas and reminded of existing processes and procedures.

The program has also become a "vehicle" of creativity. Recently, the Suggestion Committee felt that one particular suggestion needed to be honored. They presented a "Golden Broom Award" to Charlie Martinez for his suggestion to start an Adopt-A-Street program through the City of Lakewood. The Central Division employees are now the proud "cleaners" of a section on Zang Street from the 6th Avenue Frontage Road to 2nd Avenue.



Charlie Martinez receives the "Golden Broom" award.

In addition to Charlie's suggestion we have received many other suggestions. Some of the other suggestions include: developing audio and visual presentations of our construction projects for training; creating a library of available "quad sheets"; setting up contingency funds for additional A&E work; producing a video on retaining wall types so that we can quickly respond to our customers questions; developing a guide for designing approach roads; constructing special procurement folders; creating a CO-OP recruitment folder; and the list continues. Contact your local Suggestion Program Coordinator for a copy of our latest Suggestion Program Summary Report.

Not all teamwork is through formal Quality Action Teams. In fact FLH people are often involved in teamwork with FHWA and other organizations. Here is the result of one such activity. It is the text of a letter from Ron Chassie of FHWA's Region 10 to Jerry Budwig, FLH Central Division Engineer.

"I would like to take this opportunity to express my sincere appreciation for the excellent help and technical assistance that your office is providing on development of the FHWA Soil Nail Wall Demonstration Project. In my capacity as Project Engineer for the Office of Technology Applications, my job is being made much easier as a result of this excellent help being provided, specifically, by Jim Keeley on the technical aspects of the work and by Kay Hymas and Candy Watson on the consultant procurement aspects.

I cannot say enough good things about the help your folks are providing. I am fully aware that the assistance that your office is providing to me and OTA is, in effect, extra work for these individuals. What is particularly impressive to me, is that in spite of the fact that your people are already overloaded with their regular production workload, they continue to provide me with help while at all times maintaining a friendly positive attitude. I believe that your office has already benefitted by some positive payback as a result of CFLHD's involvement with the Soil Nail Wall Demo. I trust that this will continue. I will do everything that I can to assure it does.

Again, my sincerest appreciation to you and your staff, particularly Jim, Kay, and Candy. These three people are a credit to your office and to FHWA.

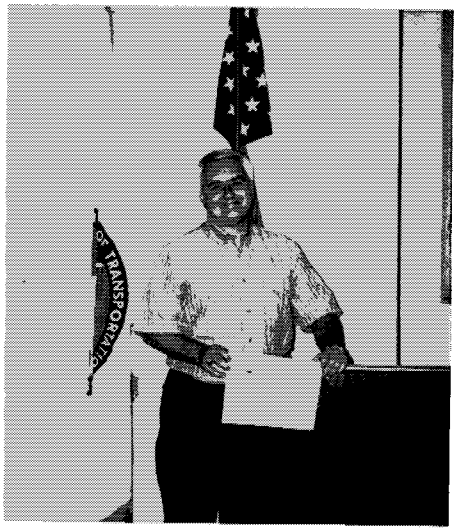
The Central Division's New "UXL" Peer Award Program

In June, the Central Division began a new award program - the "UXL" Peer Award Program. The first "open season" was from June 3rd to July 31st to coincide with the end of the fiscal year for distributing award money.

To involve everyone in the naming of the program, we held the "Name The New Central Peer Award Contest." Darrell Harding, our Materials Laboratory Supervisor, had his entry chosen out of a list of 26 names. He submitted the name "UXL" that translates to "You Excel." Darrell received $100 for winning the contest.

The "UXL" Peer Award Program process models the Eastern Division's Demonstration of Individual Excellence (EDDIE) Peer Award and the Western Division's Cheer-for Peers Award. During a fiscal year, each GS-12 or below graded Central employee can give one UXL award to any other employee except to those who supervise or are supervised by that employee. There are no restrictions as to the number of awards a Central employee can receive. Each recipient receives a certificate and $25 in a future paycheck.

The nomination form requests the nominator to provide the criteria for his or her selection. Examples that are given on the form include:



Darrell Harding is recognized for naming the "UXL" Peer Award.

- **Promoting teamwork**
- **Sharing knowledge, skills, and time with others**
- **Having a positive outlook and persistence in accomplishing their job**
- **Providing high quality service, service beyond the expected level, and/or exceptional courteous service**

In addition, employees are asked to describe the situation(s) in which their nominee demonstrated the above criteria. Also they are asked to write a citation that is printed on a certificate.

In August, a "cookies and punch" awards ceremony was held to honor those employees who received awards during the first open season. Of the 197 nomination forms distributed, 27 were returned for a 13.9% rate of return. One employee received three awards and five employees received two awards. The remaining nominees received one award each. Although the participation level was low, employees attending the ceremony agreed that this would be a beneficial program to continue.

During the ceremony, the citation on each award was read as the employee received a hand shake from Division Engineer Jerry Budwig. The citations included: Thanks for always being so helpful...For exceptional service above and beyond the call of duty...For willingness to share knowledge and expertise...Exceptional service in spite of DAFIS...For unselfishly sharing his expertise to help us do our job better...

Leading with a Passion

Waste means doing the same thing more than once before it is complete. Another word for that is redundancy. If we are redundant, we are unnecessarily repetitious. An example is the above title. It wastes words because a person cannot lead without a passion.

Leadership implies desire, ardor, and intensity directed toward a goal. A person in a leadership position who does not have a strong ambition or aspiration is just occupying a position. They are not actually leading.

Mahatma Gandhi in 1914 became a driving force in the Indian community's fight for civil rights in South Africa. His motivation was reasonable civil rights. He became a leader not just of that movement, but also of others which would follow. Using the nonviolent tactics of Gandhi, Martin Luther King, Jr. organized a 1955

boycott of the Montgomery, Alabama transit company to force desegregation of buses. He first had a passion, and he then became a leader.

Not all leaders become so in this way. Many aspire to leadership positions through their family or acquaintances. More rise to leadership through exemplary performance in non-leadership positions. The best leaders are those who may not even occupy officially recognized positions of leadership--they simply have a passion which will not be suppressed by the politics of the day.

"Improving the FLHO"--Headquarters Peer Awards

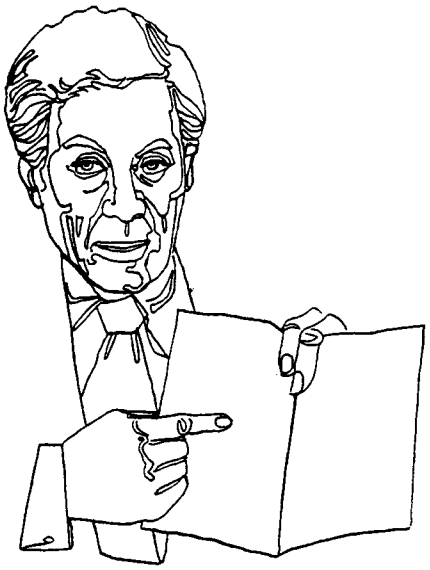
Upon seeing how the Ritz-Carlton Hotel employees' peer award system worked, Headquarters developed a very simple program. There are virtually no rules, and no "bureaucracy" is associated with the award. Here is how it works: Employees are provided several blank award forms and given instructions on how to obtain more if they run out. A memo from the Program Administrator initiated the effort with encouragement for employees to express their appreciation to others, not only through an award program.

The peer award is a personal "Thank-you" to be given only by a Headquarters' employee. The award may be given to *any person* who has contributed to the employee's work. The first and last name of the person receiving the award, the person's routing symbol, and the date are written in ink or typed. The space for a note is used to briefly say why the award is being given; for example, "Thanks for doing such a thorough job on the administration of the XYZ contract. Your timely work made it possible for us to get the project done on time and within budget." Employees are reminded to feel free to personalize the note, but be sure to let the person know the reason they think the awardee contributed to their work in Headquarters. The only tracking is a suggestion that each employee keep their own list of the people to whom they gave an award, the date, and the reason. At staff meetings from time to time we ask how it is going.

Strategic Planning Accomplishments

The EQC recently reviewed the accomplishments of FY 1993 resulting from last year's strategic planning. Strategic Planning initiatives include *change* or *improvement* actions. Several significant items appear on the list. Most are long-term activities and they are expected to continue for several years. The list does not contain all FLH initiatives, only those significant FLH-wide improvements on which special effort was made or initiated in FY 1993. By polling all five FLH Divisions and consolidating the responses, here is a list:

Accomplishment	% Complete
Procure new IHDS (CADD Software)	100
Implement employee peer awards	100
Document organizational culture improvement	100
Implement Project Manager concept in Project Development	95
Enhance/Implement PRMS	90
Improve project scoping	85
Construction/project development procedures	80
Improve interaction between management and employees	80
Define project development processes (PMTs)	80
Improve the budget process	80
Develop a firm 5-6 year program of projects	75
Encourage professional development	70
Career development plan for engineers and technicians	70
Implement Electronic Forms	70
Continue work on Lab Automation	70
Partnering procedures at COE level	70
Use partnering concepts with suppliers and Federal Agencies	60
Orienting new employees to TQM	60
Construction quality feedback	60
Improve cultural survey	60
Improve the annual report	60
Improve strategic business planning process	50
Improve FLH programming procedures	50
Guidelines on communication, E-mail	50
Develop procurement management capability	40
Improve 4th quarter award status	40
Hire procurement expertise	30
Increase professional participation	30
Develop key indicators and measurements	30
Metric implementation	20
Define project development quality standards through PMTs and performance standards in project development subsystems	20



Sometimes it is difficult to put our finger on specific accomplishments. If we don't have a few examples in mind, it is easy to think we are not seeing any results from all our change initiatives. This list should give you some ideas when you are confronted by someone saying, "I never see us doing anything with all this planning." We are doing a lot.

More on 1993 Accomplishments

by Allen Burden, HFL-10 and Larry Smith, HFL-20

Progress was made on several of the planned activities in last year's Strategic Plan.

IMPROVE BUDGET, TRAINING PLAN AND IRM PLAN PROCESS - The overall budget process includes the annual training plan, IRM plan as well as the 95X/General Operating Expense and 000/Project Budgets. In December 1993, the executive officers met to look at ways to improve the entire budget process. Budgets for funds, training and ADP are prepared in the spring each fiscal year. However, each year, FLH has been in a reactive mode requiring hastily prepared budgets. This generally ended up with incomplete budgets that were negligible real coordination between training, IRM and funding plans.

A schedule was developed and implemented for preparation of funding, training and IRM budgets. The plan provided for FLHO to be proactive and obtain latest information from various FHWA headquarters administrative offices and move out in preparation of the various plans. It allowed FLH to be prepared when the official calls for various plans/budgets were initiated. The FLH schedule also provide adequate time not only for coordination between plans/budgets but also adequate time to afford opportunity for the FLH division engineer and Federal Lands Highway Program Administrator to review and provide comment.

Each of the budgets or plans were submitted on time in FY 93. Although the process was improved, it still can be further improved in FY 94. Emphasis will be place on consistency between various FLH division submissions and an understanding for why there may a be differences.

ANNUAL REPORT - Each year, the FLH prepares a annual report documenting its program accomplishments. The data in previous reports had instances of being incomplete or inaccurate. Also, the report did not document resources used to procure and monitor engineering and support services. In September 1993, FLHO and FLH division staff involve with the submission of annual report data met in Denver to discuss each section of the annual report and decide on bets approach to have accurate and complete data. The FLH manual Chapter was subsequently updated. The quality of the data submitted in FY 93 was an improvement over previous years. However, FLH still has further improvements to make. In FY 94 efforts will be place on having the annual report ready for printing by February along with some guidance to FLH divisions on further improvements in data submissions.

IMPLEMENT A PUBLIC AWARENESS PLAN - In FY 93, FLHO in cooperation with the Bureau of Indian Affairs (BIA), sponsored 6 tribal leaders conferences and participated in a Transportation Research Board tribal leader conference. The purpose of these conferences was to provide information to tribal leaders on the Indian reservation roads (IRR) program and various other Federal-aid programs in the Intermodal Surface Transportation Efficiency Act. Special briefing books were developed and handed out at each meeting. FHWA and BIA participated in various presentations. One of the key portions of each conference was an opportunity for tribal leaders to ask questions, provide comments and express concerns on how the IRR and related programs were being administered.

INTERAGENCY COORDINATION - In January 1993, FLHO initiated a quarterly Federal Agency

Coordination Meeting to improve communications with our Federal agency partners on the operation of the Federal lands Highway Program and ISTEA. The first meeting was such a success that quarterly Federal agency meetings have been adopted. This included inviting guest speakers from other FHWA headquarters offices to present status of implementing various ISTEA programs which were of interest to Federal agencies. This has helped FHWA to carry out its ombudsman responsibilities.

Total Quality Management is like changing the soil in the forest.

Joel Barker - at QPMA's Fall 1993 Conference

Parallel to this effort, the FLHO and Federal land management agencies had an opportunity to testify at the Subcommittee on Transportation, House Public Work and Transportation hearings held on April 28. This was the first time that FLHO and Federal land management agencies had an opportunity to present a coordinated testimony on transportation accomplishments and issues serving Federal lands.

PROVIDE PROJECT COST INFORMATION - On October 1, FLH along with FHWA transitioned (converted) from the old accounting system into Department Accounting Financial Information System (DAFIS). This transition occupied most of the FLH management staff in FY 93 in trying to make the system work. Basic accounting report information began to become available during the fourth quarter. Priority was place on being able to close FY 93 account data for FLH projects. In FY 94, FLH efforts will be directed to developing and implementing financial information for FLH managers and begin developing budget preparation and management within FLH.

IMPROVE FLH PROGRAM PROCEDURES - In February 1993, the FLH Planning and Coordination (P&C) staff met with HFL-10 staff to discuss program FLHP program items and procedures. The meeting provided the FLH division staff to discuss HFL-10 procedures to understand procedures, the rational behind the procedures and identify areas for improvements. One improvement was the development and submission of transportation improvement program (TIP). The FLH divisions will be preparing, submitting and coordinating forest highway and park roads TIPs directly with State highway agencies (SHA) and metropolitan planning organizations (MPO) with copies being given to FLHO. This eliminated submission of TIPs to FLHO and subsequently having to provide additional data to SHAs and MPOs. The FLHO still coordinated Indian reservation roads TIPs.

Another improvement was initiating a procedure to reserve some park road funds to cover minor overruns in project quantities. This provided for FLH divisions to be able to have funds made available for this situation, without waiting for a formal park road allocation. Efforts will be made in FY 94 to further improve the process.

The P&C meeting also provided the FLH division staff to meet with other FHWA headquarters staff to discuss hold harmless, obligation limitation , transportation planning items with other headquarters staff to give them a better understanding requirements and the rational behind the requirements.

The HFL-10 was reorganized into two teams to minimize duplication and provide better service to FLH divisions and Federal agencies. This also provided a better chance for more than one person being informed on a particular FLHP program area.

IMPROVE/IMPLEMENT EMPLOYEE AWARD - The MD-QAT met and developed a semi-final FLH Awards and Recognition Brochure and Special FLH Award Plaque. These will be finalized at the October 1993 EQC meeting. The brochure should assist in communicating to FLH managers and supervisors various opportunities in FLH to take the opportunity to recognize FLH employees. It quickly summarizes

the various awards available that are available to be given to FLH employees and teams as appropriate.

IMPROVE INTERACTION BETWEEN MANAGEMENT AND EMPLOYEES - In late January and early February, the EQC held listening sessions at FLH headquarters and FLH divisions. These sessions provided two opportunities. It allowed the EQC to communicate the strategic plan process and how it relates to each employee. Also, it allowed for feedback from the FLH employees, both during the listening sessions and in writing subsequent to the session. The results of the sessions provided information on FLH employee concerns that could be addressee in the FY and subsequent strategic business plans. The input was prioritized and 6 areas were included in the FY 94 FLH strategic business plan.

In addition, the FLH continued the FLH Quality News with special articles on initiatives (ie. partnering) being undertaken in FLHO and FLH divisions. The FY 94 Strategic Business Plan was formatted to addressed FY 93 accomplishments and explain FLH planned activities in easier to understand terms for FY 94.

Emphasis continued on sharing information including EQC minutes, various FLH accomplishments and special quality training and conferences attended by or participated in FLH staff.

HFL-20 made progress on several of the 1993 Strategic Plan initiatives as well. **COMPLETED PROJECT SURVEY** - Our completed construction survey was revised to focus the questions on the Contractor as a customer. The Partner Agency part of the Survey is being developed by contract to focus on the entire project delivery program.

MONITORING CONTRACT GROWTH - The monitoring program for FLH contract growth was refined to better define overall growth. Clarification of pay items for incentives for material and DBE contracting and discontinuation of contingent sum use will improve consistency of future data. This is part of the effort to develop key indicators and a related measurement system.

MULTI-DIVISION QUALITY ACTION TEAMS (MDQATS) -

The Lab Automation MDQAT continued to focus its efforts on a single FLH system and have completed approximately 60% of the work included in their 5 year development and implementation plan. Data for some tests is being input in the system and standard output forms are being developed.

The Materials Specification and Acceptance (MSA QAT) is a continuing team that focused most of its 93 effort on pavement smoothness and updating the Materials Manual. The update is approximately 50% complete and is scheduled for publication in March 1994. Revised smoothness criteria and profilograph use recommendations have been prepared for final evaluation and issuance.

Electronic Forms - Secretarial Staff is now using Perform/Perfill for numerous administrative forms and standard forms formats for automation are being developed by the Lab Automation and MSA QATs for operational use.

PROJECT MANAGERS - Using the results of some formal benchmarking in Western, actual experience in Eastern and an internal evaluation in Central, FLH developed a proposal and received management approval to implement a Project Manager organization for Project Development. As a result, the Project Development Office in Eastern was expanded by one Project Manager and the Offices in Central And Western were reorganized to add 3 project managers as well as a technical support group. This reorganization will provide better customer interface by providing a single point contact for both internal and external customers.

INTERACTIVE HIGHWAY DESIGN SYSTEM - Federal Lands is modernizing its computer design tools by implementing a new interactive highway design system that offers superior interactive capabilities to the existing Road Design System. The new system, GEOPAC, is a commercial system that is currently being installed and implemented by a self directed team that includes the CADD Coordinators and other key users. Total rotation from RDS to GEOPAC will take several years.

PROCUREMENT MANAGEMENT - As the Federal Lands Highway program has grown so has our need for outside support services. This not only includes more construction contractors but also more A&E and other support contracting. A reorganization of our procurement functions was proposed to top management and procurement specialist has been added to headquarters staff and will be added to the Division staff to assure quality in our procurement program.

FLH Strategic Planning responds to President Clinton's challenge to help rebuild America through Secretary Peña's and Administrator Slater's primary goals:

- Strengthen transportation's role in supporting the economy.
- Promote safety.
- Strengthen the links between transportation and environmental policy.
- Advance U.S. transportation technology and expertise.
- Foster intermodalism.

Strategic Planning in "Down-to-earth" terms

by Jim Amenta

The FHWA developed a National Strategic Plan in 1992, with the help of the employees, to set forth the vision of what we want our agency to be, the mission we want to deliver, and the values we will abide by in doing our work. The National Strategic Plan covers all of the FHWA. The vision of FHWA is to "meet the Nation's need for the safe, efficient and environmentally sound movement of people and goods, and be world renowned in surface transportation expertise and innovation". The mission of the FHWA is "to ensure the highest quality surface transportation system which promotes the Nation's economic vitality and quality of life of its people."

The National Strategic Plan was developed to be dynamic and model the activities to be carried out over the next several years. Knowing that conditions change the National Plan will be updated annually to reflect the most current conditions. The updates are to be carried out through listening sessions with the employees providing input as to what is working well and what is not working well. A major goal of the planning process is to enable each employee to see the big picture, where FHWA as well as FLH offices are going and what they are trying to achieve. While at the same time, letting the employees see where they fit in and how they help make things happen at the working level.

FLH UNIT BUSINESS PLAN

As part of the National Strategic Plan, the Federal Lands Highway (FLH) developed a comprehensive Unit Strategic Business Plan in 1993. This comprehensive Unit Plan incorporates all FLH mission responsibilities, including business functions, strategic functions, and activities or actions relating to our mission. These functions endeavor to create change and implement system improvements. The Unit Plan contributed to and followed the planning initiatives set forth in FHWA 2000.

Each division was required to prepare an Action Plan that integrated quality initiatives as well as defining roles, responsibilities and staffing allocations to achieve the mission of the Federal Lands Highway. The FLH mission requirements include business functions, strategic functions and division action items that were to be performed by the five FLH divisions (HFL-10, Burden; HFL-20, Smith; HFL-15, Klinedinst; HFL-16, Budwig; HFL-17, Hall).

The Federal Lands Highway has four basic mission requirements. The FLH missions are: program administration (FLHP), providing transportation and highway engineering services, training and development of engineers, and the development and dissemination of technology.

In order to accomplish our missions, FLH has adopted a Total Quality Management (TQM) philosophy. The effort to make continuous, quality improvements through the use of TQM techniques is included in the strategic items described later in this paper.

BUSINESS PLANNING PROCESS OVERVIEW

The business planning process in FLH is an annual process aimed at improving the quality, increasing the efficiency of, and continually improving the work effort with the limited resources available through a uniform organized planning procedure. The process begins with Listening Sessions, where the employees provide input as to what is working well and what improvements are needed within the divisions. The next step is the Executive Quality Council (EQC) reviews the

employees input and the overall FLH program and updates the objectives of the FLH Strategic Business Unit Plan. The FLH Unit Plan is then approved after reviewing the revised objectives and the divisions are directed to develop a Division Action Plan. The Division staff officers then convene to review the FLH Unit Plan initiatives and prepare Division Action Plans. The Division Action Plan is then reviewed and approved. Once the Program Administrator approves the action plan, it is implemented during the next three years.

The FY 93-95 plan was complicated and confusing. A change was necessary to make it simpler and more focused. The FY 94-96 Division Action Plan is simpler and defines the business functions, the strategic functions, and the division action items and the resources required to complete the FLH mission.

"If we don't change our direction, we are likely to end up where we are headed."
- Chinese Proverb

EFLHD FY 93 ACCOMPLISHMENTS

Eastern Federal Lands has awarded 25 projects at a cost of approximately $63.9 million dollars thus far this fiscal year. This figure includes 3 Forest Highway, 1 Public Lands, 9 Park Roads, 8 NPS and 4 miscellaneous projects. The total number of active construction projects ongoing during FY 93 is 44 accounting for $195.2 million in awarded contracts.

EASTERN'S BUSINESS ITEMS

The primary business function of FLH is to design and construct scenic highways. Eastern's everyday business is everything we do to accomplish our mission. The resources required to accomplish our business for FY 94 is 94.5% of the resources available to us at EFLHD.

The majority of the resources is consumed by mission area 4, Plan, Design, Construct, and Technical Assistance. This represents the bulk of our everyday design and construction of highways. The Administration, mission area 1, of the program utilizes 7.0% of the resources at EFLHD. Training and development of engineers, mission area 3, takes 1.8% of the resources and Technology Development, mission area 2, is a mere 0.1% of the resource allocations.

STRATEGIC ITEMS

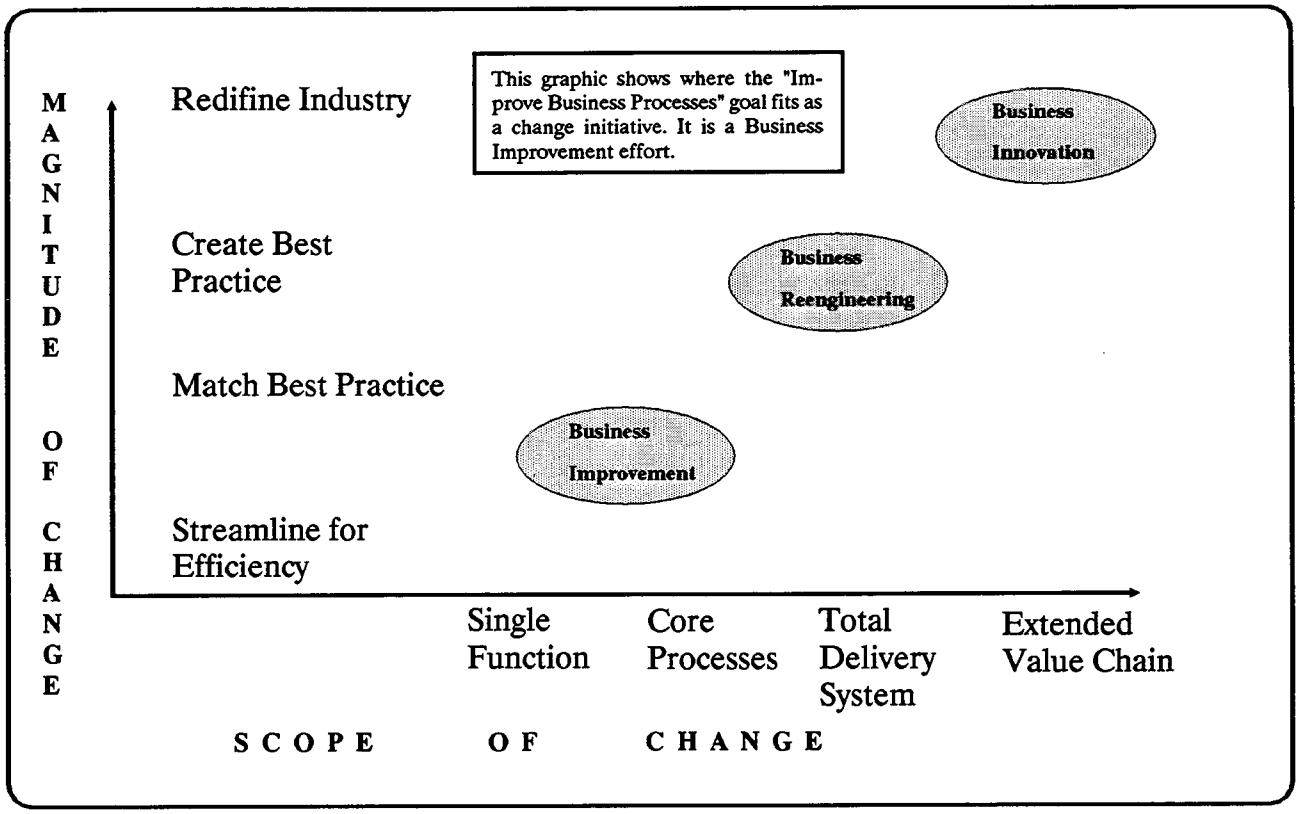
The strategic element of the strategic business plan is that portion which is proactive and seeks to achieve continuous quality improvements. The strategic items are not everyday business items but are what we do to improve our processes and are incorporated into EFLHD's action plan. The strategic items at EFLHD for 1994 are proposed to take up 5.5% of our resources. The strategic items are divided into two groups, FHWA and FLH.

FHWA ITEMS

The FHWA strategic items were developed as part of FHWA 2000 Mission, Vision, and Values. The majority of the goals are directed toward the Federal-Aid portion of the FHWA. FLH also supports FHWA 2000, but most of the goals are contained in our everyday business. Only a small portion, 0.3%, of EFLHD's resources are devoted to the FHWA strategic items.

FLH ITEMS

The strategic planning process incorporated feedback from the employees. This was accomplished through the E-Scan or Listening sessions held throughout the divisions. The employee comments and concerns were heard and noted, during February of this year, by the Executive Quality Council (EQC). A two-day strategic planning meeting was held in Denver of the FLH top managers in March. The agenda was to develop focus areas for strategic planning for FY 94 and beyond. The information gathered from the listening sessions was the basis of the focus areas. The EQC then held three two-day planning sessions to develop the strategic goals and objectives that were to be incorporated into the Strategic Business Plan. The EQC developed a list of ten strategic items that provided the core of the FLH strategic plan. The status of the strategic items is assigned to a "goal manager" whose responsibilities include keeping the strategy on track and reporting the progress to the EQC. The strategic items are listed below with an explanation of the main objective:



REDUCE FOURTH QUARTER AWARDS

Objective - To advance FLHP programmed projects on a continuing basis such that quality PS&E packages for 75% of FY 97 construction projects are at 95% completion by June 1, 1996.

ENHANCE ENGINEERING TECHNICIAN OPPORTUNITIES

Objective - Define career development program for Civil Engineering Technicians by December 1994.

IMPROVE FINANCIAL MANAGEMENT ACCOUNTABILITY

Objective - Management and staff are financially accountable using financial information that is useable, timely and accurate by September 30, 1995.

TRAINING PROGRAM ACTION PLAN

Objective - FLH uses a structured approach to training that assures employees receive the training needed to do their job by October 1994.

IMPROVE UNDERSTANDING OF STANDARDIZATION/UNIFORMITY

Objective - FLH has implemented a standardization/uniformity policy by April 1995.

IMPROVE BUSINESS PROCESSES

Objective - Quality Control/Quality Assurance (QA/QC) systems have been defined and improvements have been initiated in planning, project development, construction, procurement, and administrative key processes by October 1995.

IMPROVE PROCUREMENT PROCESSES

Objective - Determine and implement procurement organizational changes and implement procurement review recommendations to assure compliance with procurement policies and regulations by October 1994.

IMPLEMENT METRIC CONVERSION

Objective - FLH has advertised all projects in metric units after September 1996.

EXPAND TECHNOLOGY TRANSFER

Objective - The FLH technology development and transfer roles and responsibilities are defined and implemented by December 1994.

IMPROVE INFORMATION MANAGEMENT EFFICIENCY

Objective - FLH has an efficient management information system in place by December 1995.

Some of the strategic initiatives set forth have already been implemented and have produced some promising initial results. One excellent example of Improving Business Processes was the assessing and improving of the effectiveness of PS&E and Location, two key Project Development processes. This was achieved through the Process Management Team (PMT) initiative. A considerable amount of time and effort was put into the PMT process. The PMT's identified the process in each group and then dissected it to see where they were working well and where there were problem areas. Based on the teams discussions and interviewing customers and clients of the process, both internal and external, short term and long term process improvements were identified and prioritized. These improvements were incorporated into an implementation plan that was approved by the Division Quality Council (DQC) at EFLHD. This process improvement will show immediate results and increase the efficiency and quality of the work done in Project Development.

DIVISION ACTION ITEMS

Eastern, as well as, Central and Western Divisions have issues that are specific to the needs of their Division which complement the business and strategic functions. These issues are identified by the individual Divisions to address areas of improvement that the DQC feels will improve the quality of our products. Often, the action items are derived from the results of the cultural survey, comments from employees at meetings, and any comments generated by the employees about the work place.

The action items are basically activities to accomplish a particular item within EFLHD. Quality Action Teams (QAT's) are set up to investigate the action item with employees being actively involved. QAT's seek to improve the processes and solve problems requiring a long lasting solution.

So, there it is--a "down-to-earth" explanation of Strategic Planning.

[What better source than a former Geotech Engineer? -ed.]

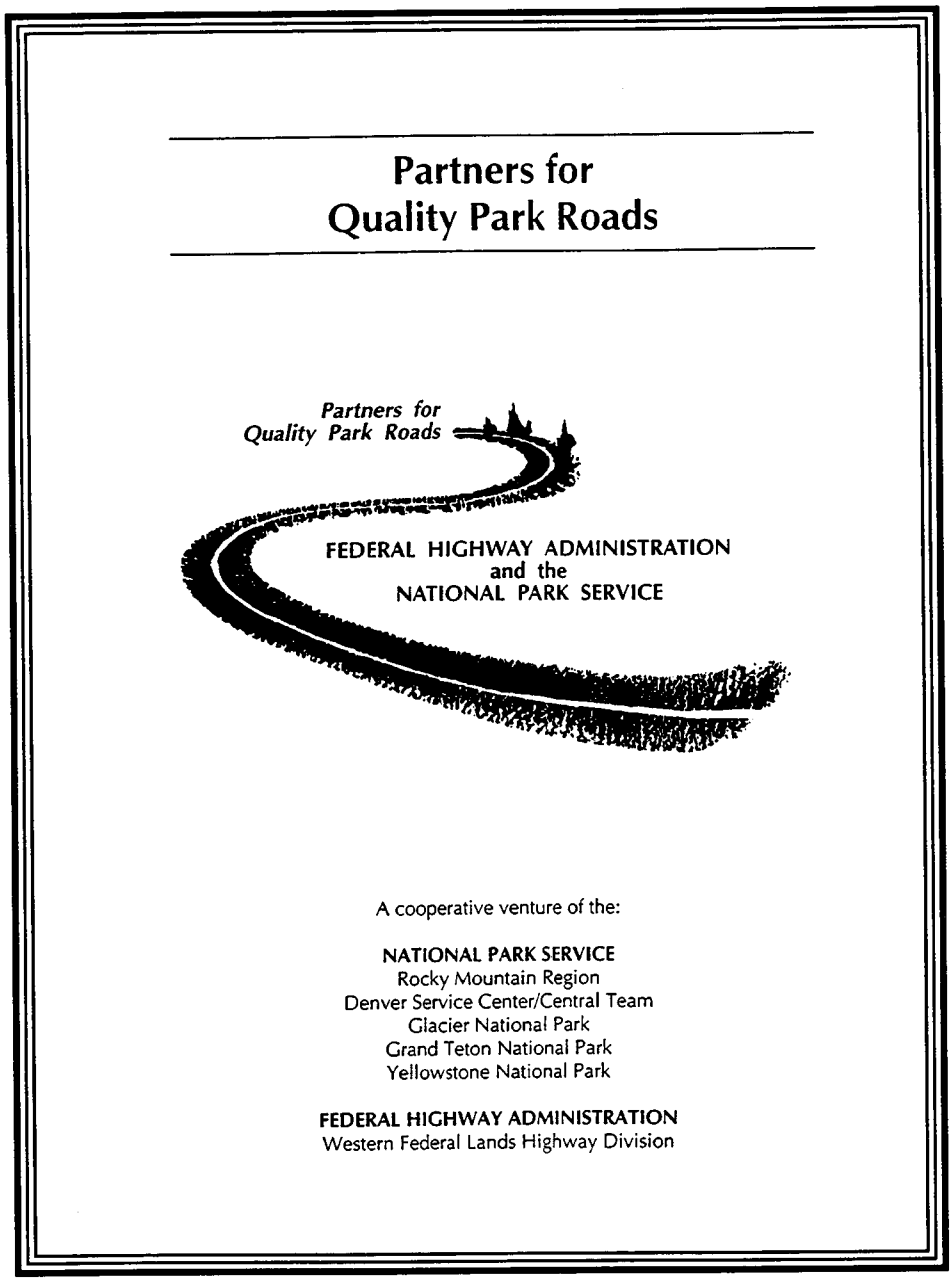
Eastern Hosts Facilitator Training

Looking for a newly trained team player? The Eastern Division sponsored a 3-day Facilitator Training session at their new Davis Drive Training Facility. This course was held October 4-6, 1993.

Lois Hart of Leadership Dynamics was the instructor. Last December, the Western Division held this class in Vancouver. In the near future Lois will also be presenting her course through FHWA's Office of Personnel and Training. So if you missed this one, sign up through Central Training.

Many FLH employees have learned how to be better team members through training like this. Although the central theme is to learn how to "facilitate" by helping the team work better together on the problem, everyone who attends learns also how to be an effective team member. Here's a list of the most recent graduates: FLHO - Paul Los; CFLHD - Rick West, Kate Cornwell, Linda Sullivan, Mark Taylor; Region 5, Illinois Division - Ryan Rizzo; EFLHD - Barbara Kissel, Steve Ernst, Abe Walton, Michelle Nickens, Pat Marks, Perry VanDerHurst,

Joe Conway, Larry Wiser, Mary Beth Barbagallo, Brian Roberts, Byron Betts, Barbara Raymond, Steve Hinz, Dave Weber, Harold Rohde, Rich McDaniel, Joe Hennessey, Jim Sinnette.



By Lonnie Moss

A unique partnering initiative in the Western Division has taken another significant step toward its goal of assuring quality Park Roads. The Steering Committee, chaired by Wade Johnson from Western, recently distributed copies of its new descriptive brochure. The brochure was developed by Rande Simon and Ken Raithel, National Park Service. The partnership includes Federal Highway Administration's Western Federal Lands Highway Division as well as five entities of the National Park Service: Rocky Mountain Region, Denver Service Center/Central Team, Glacier National Park, Grand Teton National Park, and Yellowstone National Park. The text of the brochure follows:

BACKGROUND

Since the 1920s the National Park Service and the Federal Highway Administration have been involved in constructing park roads nationwide. As we progressed in this relationship, the rapid changes in environmental laws, preservation, and construction technology affected the relationship. It was recognized by both agencies that a new common understanding of these changes could be achieved through improved communications.

In April 1992 a group of multidisciplined individuals from the Park Service and Federal Highway Administration met in Jackson, Wyoming, to begin formulating a concept that would improve the quality of roadways within the parks.

THE CONCEPT WAS PARTNERING

During the second meeting of the membership in Missoula, Montana, the group became more cohesive. Identification of issues and resolution of problems began in earnest. Multiagency teams were established to address issues during the summer. The purpose of the partnership was formally defined:

We are building a partnership in a way that promotes clear communication, defines and unites goals, uses skills and knowledge of all members so that we have an effective, timely, decision-making process to produce quality products as measured by our pride and satisfaction with our decision-making process and the learning and information gathered in post-construction project evaluation.

In December 1992 the group met in Glenwood Springs, Colorado, to readdress issues, report successes, and examine failures of the previous construction season. As issues were addressed, agency affiliations blurred.

THE PRESENT

The "Partners for Quality Park Roads" concept is continuing with annual meetings. Park-specific meetings will be employed to minimize cost and time allotments. At the last meeting of the full membership, a steering committee was formed to govern and promote the concept and goals of the partnership, plan annual meetings, and guide the partnership between meetings. Committee members also serve to update management on the partnering process, encourage participation, facilitate park-specific meetings, and monitor issue resolution.

To date the partnership has established:

- an understanding of different disciplines and the basis for appreciating diverse viewpoints,
- open communications between the National Park Service and Federal Highway Administration,
- and a process for resolving controversy and a network of interagency personnel to contact for assistance in issue resolution.

THE FUTURE

The partnering successes to date will serve as a strong foundation to be built on, both at the park level through active local partnerships, and through the annual membership meetings. The park-specific meetings will be held in conjunction with project reviews to ensure meaningful, participative opportunities for all park disciplines, including top management, in the decision-making processes that lead to timely construction of quality park roadways.

In order to prosper, and continue this growth of communication and understanding among the entities, the partnership needs:

ACKNOWLEDGMENT

SUPPORT

INVOLVEMENT

Recommended Reading

Libraries

Each Federal Lands Highway Division and Headquarters maintains a library of books, pamphlets, conference proceedings, video tapes, audio tapes, and other materials related to quality. See your coordinator for information.

Books

A New American TQM, Siba, Graham, and Walden, Productivity Press, 1993.

Handbook for Productivity Measurement and Improvement, William F. Christopher, ed., Carl G. Thor, ed., Productivy Press, 1993

Reinventing Government, "How the Entrepreneurial Spirit is Transforming the Public Sector From Schoolhouse to Statehouse, City Hall to the Pentagon," David Osborne and Ted Gaebler, Addison-Wesley Publishing Company, Inc., 1992.

Information Sources

Federal Quality Institute

The Federal Quality Institute, P.O. Box 99, Washington, DC 20044-0099 provides quality management services to all Federal Agencies. Subscribe to the Federal Quality News by FAX 202-376-3765.

Conferences

The Quality and Productivity Management Association, QPMA, hosts two major quality conferences each year. Contact your Quality Coordinator for dates and registration information. FLH is a Sponsor of QPMA. If you'r not in FLH, call QPMA at (708)619-2909.

Miscellaneous

Brochure

TQM in FLH, an attractive NEW brochure describes our Vision, Mission, Guiding Principles as well as our organization. Your FLH Division Office has copies.

Team Guidelines

The popular book, **Guidelines for Establishing and Operating Quality Action Teams** is available from the Division Quality Coordinator. Additional copies may be obtained by calling Headquarters, 366-9492.

Training Opportunities

Training in all aspects of TQM is available from many sources, internal and external. See your Quality Coordinator for ideas and to help you make arrangements.

Speech Material

Ever have the opportunity to speak on TQM? Your training and exposure in FLH to the most current and most job-satisfying ways to do your work, makes you a valuable resource to others. We can provide visual aids and written material to help in your preparation. Call 366-9492 or write: FLH Quality News, HFL-1, 400 7th St., S.W., Washington, D.C. 20590

Strategic Planning

Integrating quality and strategic planning is HARD work. Federal Lands Highway has direct experience to share. Contact Mark Chatfield, HFL-1, 202-366-9492.

Volume V Issue 1 Federal Lands Highway Winter 1994

FLH QUALITY NEWS

U.S. Department of Transportation
Federal Highway Administration

400 7th St., SW Washington, DC 20590 (202)366-9492

FHWA 100th Anniversary Celebration

Joint Federal Agency Coordination Meeting - October 14, 1993

On October 14, Federal Lands Headquarters was the host for the quarterly Federal agency coordination meeting. Headquarters leaders seized the opportunity for a special FHWA 100th Anniversary celebration.

Each of FLH's five partner Federal land management agencies received a commemorative plaque signed by Administrator Rodney Slater. Deputy Administrator Jane F. Garvey presented the plaques to agency representatives. In presenting the plaques, Ms. Garvey gave a brief description of how and when the partnership began.

Federal land management agency meetings were initiated in January 1993. The purpose of the quarterly joint sessions is to provide information on the status of the Federal Lands Highway Program (FLHP). Agendas also include other Federal-aid programs, technical information, and strategic goals. The meetings are an opportunity for Federal land management agencies to present updates on the status of their programs. The National Park Service, Bureau of Indian Affairs, Forest Service, Bureau of Land Management, Military Traffic Management Command, and Federal Lands Highway Office participate in these meetings.

HISTORY AND PURPOSE OF THE PROGRAMS

There were multiple Federal road and trail programs dating back to the 1916 Federal-Aid Road Act. The

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Publication No. FHWA-FLP 94-002

FLH QUALITY NEWS
Volume V, Issue 1
Winter 1994
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The FLH QUALITY NEWS is an official publication of the Federal Lands Highway Office, Federal Highway Administration, U.S. Department of Transportation. It is published several times a year for educational purposes to promote quality principles among FLH's and other organizations' employees, managers, and supervisors.

Other topics may include information about programs, policies, projects, and administration. Contents of this publication may be used without permission. However, courtesy credit is appreciated.

Mention of private firms in no way constitutes an endorsement or recommendation. Comments are encouraged. Communications should be sent by FHWA E-Mail (MCHATFIELD) or forwarded to: Editor, FLH QUALITY NEWS, Federal Lands Highway Office (HFL-1), Federal Highway Administration, 400 7th Street, SW, Washington, DC. 20590.

Surface Transportation Assistance Act of 1982 created the FLHP. It brought together for the first time a consolidated and coordinated long-range funded FLHP. The program includes four categories:

- Park Roads and Parkways,
- Indian Reservation Roads,
- Forest Highways,
- Public Lands Highways Discretionary

The primary purpose of the FLHP is to provide public road funding to serve the Federal lands outside State or local government responsibility. Typically, the facilities serve recreational travel and tourism, protect and enhance natural resources, provide sustained economic development in rural areas, and provide needed transportation for Native Americans.

PARTNERSHIPS

Forest Service:

As early as 1905, the Office of Public Roads furnished advice on forest trails to the Forest Service. In 1913, a formal arrangement was made to manage road work in national forests. Our partnership with the Forest Service began in 1916 when the Federal-Aid Road Act appropriated funds for the construction and maintenance of roads and trails serving the national forests. There are currently over 25,000 miles of Forest Highway on State and local systems. They serve the 191 million acres of national forest lands in 40 States plus Puerto Rico. These roads connect to the 344,000 miles of forest development roads owned by the Forest Service. The FY 94 authorization for the Forest Highway Program was $113 million.

National Park Service:

This partnership began well before 1924 when the first appropriation for roads, trails, and bridges in the national parks was made available. Technical assistance and cooperation were evident from the very beginning of the National Park Service. There are currently 8,000 miles of park roads and parkways serving 80 million acres of national park lands in 42 States plus the District of Columbia and the Virgin Islands. The FY 94 authorization for Park Roads and Parkways was $83 million.

BIA
MTMC
FEDERAL HIGHWAY
1893 - 1993
ADMINISTRATION
WITH FEDERAL PARTNERS
NPS
FS
BLM

Bureau of Indian Affairs:

In 1930 Congress authorized a cooperative relationship among the Bureau of Public Roads under the Secretary of Agriculture, State highway departments, and the Department of the Interior. They worked to survey, construct, reconstruct, and maintain roads serving Indian lands. The Indian Reservation Roads system consists of 52,000 miles, of which 25,000 miles are owned by the Bureau of Indian Affairs. The remaining 27,000 miles are under State and local government jurisdiction. These Indian Reservation Roads serve approximately 515 Federally recognized Native American tribes and Alaskan villages in 28 States. Congress authorized $191 million for the Indian Reservation Roads Program in FY 1994.

Bureau of Land Management:

In 1950 the Department of the Interior Appropriations Act provided funds to the Bureau of Public Roads for construction of certain roads. These roads provided access on the revested Oregon and California Railroad and reconveyed Coos Bay Wagon Road grant lands. Now there are 66,000 miles of these roads on State and local systems. There are also 9,000 miles of trails serving the 272 million acres of Bureau of Land Management (BLM) lands. Most of them are in 11 western States and Alaska. Under the provisions of ISTEA, BLM participates in transportation planning activities on Federally-designated roads serving public lands. The BLM and FHWA signed a Memorandum of Understanding in October 1993.

Military Traffic Management Command:

General Roy Stone himself founded a partnership with the U.S. military. General Stone, a West Point graduate, became the Special Agent and Engineer for the Office of Road Inquiry. A hundred years ago he understood the importance of good roads and the need for demonstrating technological advancements. Our present working relationship came from the long history of technical cooperation. It was aided by personal exchange with the military services and the Army Corps of Engineers. The first supplement to the National Defense Appropriations Act in 1941 set up a formal partnership. It transferred Department of Defense appropriations to the FHWA. The purpose was to construct or improve Defense Access Roads to meet military related traffic needs. The Military Traffic Management Command coordinates these transactions with the FHWA. FLH, States, or local governments may administer such projects through the Federal-aid process.

Central Federal Lands' Centenial celebration included Quality Action Team and project displays.

Bridge Span Missing

The table below is the missing "span." It should have been included in the Fall 1993 *FLH Quality News* as part of an article on the Central Division's experience with the FLH Bridge to Improvement Suggestion Program. The key to a suggestion program is to quickly let people know the disposition of their suggestions and adopt as many as possible.

The success of Central's program is due to prompt and fair action on submitted suggestions.

	Time Period	
Measurement:	3 mos. ending 9/92	11 mos. ending 9/93
# Formal Suggestions	36	8
percent adopted	58%	63%
percent implemented	71%	0%
# Short-cut Suggestions	5	19
percent adopted	80%	74%
percent implemented	100%	80%
Money Awarded	$2,894	$1,350

The "Business" of FLH

by Dan Alexander, FLH Headquarters Procurement Advisor

Small Business Enterprises, minority businesses, women-owned businesses -- Why do we spend our time participating in all these socio-economic preference programs? I thought we were supposed to build roads.

There is a simple answer. Assuring success of these enterprises makes good business sense for our country. More specifically, it is part of the quality associated with the Federal Lands Highway Program. It is also one of the reasons we refer to our long-range planning as Strategic Business Planning.

FLH Preference Program
(Percent of Contract Value)

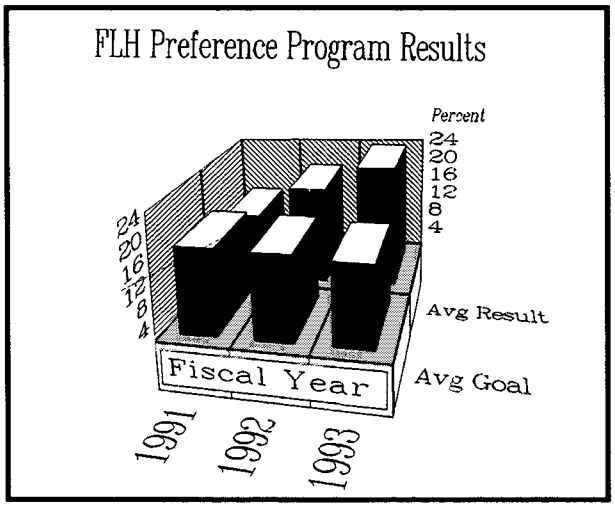
	1991	1992	1993
GOALS			
8(a)	6.3	6.1	5.2
DBE + WBE	3.9	3.8	3.7
SB	39.7	38.7	37.2
Average	**16.6**	**16.2**	**15.4**
RESULTS			
8(a)	3.7	5.4	11.6
DBE + WBE	3.1	9.8	8.0
SB	32.8	42.2	51.4
Average	**13.2**	**19.1**	**23.7**

The U.S. Government is the world's largest buyer of goods and services. Purchases by military and civilian installations amount to about $180 billion a year, ranging from complex space vehicles to paper clips, janitorial services to cancer research. In short, the government buys just about every available category of commodity and service.

Small businesses have traditionally generated much of the economic growth and new jobs in the nation. From 1988 to 1990, the most current year for which nationwide figures are available, virtually all of the new jobs in the nation were created by small businesses. The statistics are astounding.

- As of December 1991, there were 9.1 million self-employed workers nationwide.
- In 1989, 92.8 percent of all business establishments were owned by small businesses.
- Small firms employed 57.3 percent of all private nonfarm workers in 1990.
- Nationally, small businesses created all of the new jobs in the wholesale trade industry, all of the new jobs in the construction industry, and 83.1 percent of the net new jobs in the service industry, respectively.

As the economy continues to prosper, the rising efficiency in small firms is most evidenced by strong income gains, particularly the above average gains in the Northeast. As the momentum of the recovery continues, economists expect small firms will continue to lead the nation. Momentum will increase as larger firms begin to follow the lead of their smaller counterparts.



A small-business dominated industry is one in which at least 60 percent of employment is in firms with fewer than 500 employees. The three major small-business-dominated industrial sectors are construction, wholesale trade, and services.

Women-owned businesses

Nationally there were 4.1 million women-owned businesses in 1987 with receipts of $278.1 billion dollars. This is up by 57.5 percent and 183 percent, respectively, from 2.6 million businesses and $98.3 billion in receipts in 1982.

Black-owned businesses

The number of black-owned businesses rose from 308,260 in 1982 to 424,165 in 1987. That was an increase

of 37.6 percent; the receipts of these businesses rose from $9.6 billion in 1982 to $19.8 billion in 1987, an increase of 105.5 percent.

Hispanic-owned businesses

Nationally, the number of Hispanic-owned businesses rose from 233,975 in 1982 to 422,373 in 1987, an increase of 80.5 percent. Receipts of these businesses rose from $11.8 billion in 1982 to $24.7 billion in 1987, an increase of 110.3 percent.

Businesses owned by other minorities

Nationally, the number of businesses owned by Asian Americans, Alaska Natives, American Indians, and Pacific Islanders rose from 201,264 in 1982 to 376,711 in 1987, an increase of 87.2 percent. The receipts of these businesses rose by 158.9 percent over this same time period, from $13.1 billion to $34.0 billion.

Relationship to Quality

Quality means meeting requirements based on customer needs. FLH has many customers. Some may seem remote from our daily work. Often, what customers lack in proximity, they make up for in terms of power. The law defines customer requirements in no uncertain terms. Quality can be directly measured by how well we meet those requirements.

The U.S. Small Business Administration (SBA) has the responsibility of making certain that small business obtains a fair share of government contracts and subcontracts. This mission is spelled out in the Small Business Act of 1953, which established SBA: "The policy of Congress is that ... the government should aid, counsel, assist and protect, insofar as is possible, the interests of small business in order to ... insure that a fair proportion of the total purchases and contracts or subcontracts for property and services for the government ... be placed with small business." Amendments to this act and other legislation in the intervening years have reinforced and expanded this vital mission. SBA, working closely with federal agencies and the nation's leading contractors, carries out its procurement assistance responsibilities through a number of programs including:

--**Prime Contracting** - SBA works closely with federal agencies to increase the dollars and percentage of total federal procurement awards to small business firms by identifying items, which small firms could supply.

--**Subcontracting** - SBA monitors prime contractors to ensure that small businesses receive a fair share of subcontracting opportunities.

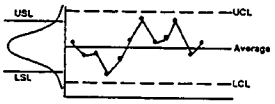
FLH Performance

Federal Lands Highway has an excellent record in preference program areas. From fiscal year 1991 through 1993, FLH has increased its primary preference program effort from an average of 13.2 percent to 23.7 percent of annual contract value.

A word of caution -- the resultant numbers show an increase, however, let's not be lulled into a false sense of security. The quality of the goal setting process is also improving. As a result, the expectations to provide the type of support for continued economic growth of these small firms offers a tremendous opportunity for us all. For instance, the 8(a) goal for FY 1994 will more than double from 5.2 to 12.0 percent. Meeting these goals will require some new approaches including competitive 8(a) for some larger projects. Another source of opportunity is in the A&E services arena.. Administrator Slater says, "To achieve these goals, we intend to explore new and innovative techniques for enlarging the cadre of firms available to FHWA and seek out those firms that traditionally have not done business with us."

Headquarters Holds Measurement Training Class

"Measuring Quality in Daily Work"



When the fifth annual installment of Quality Improvement Prototype scores showed another year of marginal progress in the "Measurement" category, Headquarters decided to do something about it. Patrick Wlaschin, Manager for the Indian Reservation Roads Program and former Western Federal Lands Quality Coordinator, and Mark Chatfield, the Quality Coordination Team Leader, developed a training course to help.

Objective

The objective of the course was not to teach measurement, per se. It was to cause people to see the value of measuring what they do for their personal, organizational, and customers' benefit. In other words, the in-

structors assumed that most of the students knew or could readily learn how to measure. The problem seemed to be that people did not have the internal motivation to begin and to continue measuring. Here is how the course worked:

Introduction

An introduction showed examples of how we measure all the time. It doesn't have to be a complicated or involved thing. In fact, the more "natural" we can make it, the more meaningful it will be. For instance: the CFC campaign goal, the schedule for class, the end of FY close-out. They are all measures.

The instructors explained that the class was to give employees the ability to apply what they already know about quality to their everyday work. Before the class ended, everyone was to have identified at least one thing to measure.

> *"If you are not measuring the whole process, you really don't have a complete idea of what is going on."*

Then students were told, "All the education you get is of little use to you until you see how it can help you personally. You can learn arithmetic from a book, but you won't really be good at it or appreciate it until you see how it can help you with your personal finances or your job satisfaction. By the same token, we can give you all the "book" learning on the subject of measurement, but until you see how it will help you personally do your job and be more satisfied with your work and how it will lead you to higher ground, you probably won't really appreciate it."

"Good measurement is good quality. Check the bread in the oven by sticking a knife in the center. If it comes out sticky with uncooked dough, there's no doubt it is not completely done. You might assume it just needs more cooking time. However, the oven temperature may be the problem. If it was set at 450 degrees, the bread would burn on the edges and be undone in the center. If you are not measuring the whole process, you really don't have a complete idea of what is going on."

"No matter what you might describe in casual conversation as "good" or "the best" or "just right" is only really as good as its measurement. What is the most expensive watch you can think of? You can buy a 'Rolex.' It looks just like a $4,000 wristwatch, but you can get it for $35. By all appearances it is a very high quality watch. The only trouble is, if you let it get wet, the metal turns green and starts to deteriorate. In order to really know you have a Rolex, you must buy it from a reputable dealer, get a certificate, and have an authentication from the manufacturer. You must know that it is what you want it to be. That is what measurement is all about. Without measurement there is no real quality."

Selecting What to Measure

After a brief review of TQM basics, Patrick reviewed the subjects of measurement tools and analysis techniques. Public domain software programs "SPC" and "CASPR" were demonstrated.

Students had been instructed to bring their Critical Job Elements or Position Descriptions with them. The purpose was for each employee to use these documents as references and identify one thing that is an important part of their job that they wanted to measure. They did this by considering all their responsibilities from three perspectives: personal, organizational, and "customer."

Each student was encouraged to check with the boss and other customers to be sure this is a good area to measure. Once the subject was selected, students considered the characteristics of what they chose to measure. Characteristics include: specific tasks involved, who performs the tasks, where information and materials come from, and how work is handed-off from one person to the next and then finally delivered.

Setting Up a Measurement System

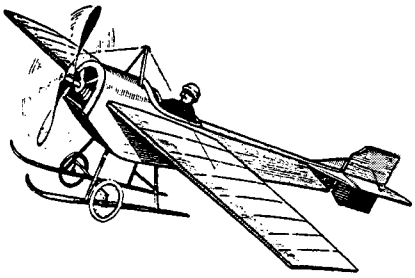
Instruction then centered on developing a quality performance data system. This is just a way to make sure you regularly and accurately measure. Some people like tables of numbers. Some like graphs. Some are computer nuts. Some don't like any method of measurement. Well, sometimes we may need to do things we don't really like to do so we can become better. Diet and exercise come to mind.

The key here is to set up a measurement system that people will actually use. Don't make it so complicated it will take an hour every day to keep up with it. Maybe all you need is a special notebook, a file in WordPerfect or Lotus, or a note in the lower left corner of the calendar. Set up a system that will continue. Start as simply as possible. Then, if there is a need to add more, adjust it after a while.

Followup

The training session enabled Headquarters employees to begin measuring. About six weeks after the initial training, a check-in meeting was held. In March everyone will report what they are measuring, what the results are, and what they might improve.

FLH Pilot Project



The FLH is participating in a Pilot Project for Performance Plans and Program Performance Reports under P.L. 103-62; the Government Performance and Results Act (GPRA) of 1993. FLH is the only approved Pilot for FHWA and is one of four approved in the Department of Transportation. The incentive is the potential for early waiver of certain non-regulatory requirements such as employment ceilings. Part of the Pilot Project relates to partner involvement in strategic plan development.

The real purpose of the GPRA is to make sure agencies can show meaningful performance through strategic planning and measurement of program outcomes rather than just productivity or expenditure. The outcomes show how a program is benefitting the public. In order to show this, agencies are to measure key program elements. The outcomes and measures are to be developed in conjunction with partner organizations.

On November 16, 1993, FLH initiated direct partner agency involvement activities under ongoing strategic planning. A one-hour session as part of a previously arranged meeting with Forest Service directors was held to develop draft outcomes for the Forest Highway Program. FLH presentations by Al Burden and Mark Chatfield asked for input from key Forest Service leaders. Although we used minimal time, participants provided valuable information on outcomes. A follow-up memo to the Forest Service is planned to have them supplement the list of outcomes and provide suggestions on output measures before any attempt is made to finalize a list. The Forest Service's entire program will also be a GPRA pilot project.

The Bureau of Indian Affairs (BIA) is implementing recommendations of the National Performance Review and is beginning to implement Total Quality Management. At a meeting of BIA Area Road Engineers on November 29, 1993, the BIA reviewed their work relating to the National Performance Review. This led to FLH's presentation on the GPRA. Al Burden provided 15 minutes of background on FLH's strategic plan to the 60 attendees. Mark Chatfield presented a 10-minute overview of GPRA and then facilitated a work session during which the Area Road Engineers individually wrote down their ideas for one key outcome and from two to four related output measures. Groups of six to ten then discussed their individual items and a representative of each group presented one outcome with its related measures. All the information was collected and compiled with excellent results. A follow-up memo to the BIA is planned to provide an opportunity to adjust the list of outcomes and measures as the next step in reaching agreement.

FLH is scheduling one- to two-hour meetings with additional partner Federal Agency leaders: the National Park Service, the Bureau of Land Management, and the Military Traffic Management Command. The reason for this "outreach partnering" effort is to complement our measurements and to get partner buy-in to our strategic planning process. This was needed without regard to the Pilot Project. However, the Pilot effort caused us to do it sooner that we probably would have otherwise. Our intent is to complete these meetings by the end of January 1994.

Under the Pilot Project, the FLH will track performance by rating progress in three areas:

- Internal customer and employee involvement,
- External customer focus, and
- Continuous improvement and productivity.

The performance goals that would be the essence of this pilot would be made up of multiple measures indexed under the three primary categories.

The FLH is currently measuring most of the proposed elements. Managers document performance measurements in various annual stewardship, budget, and system-condition reports. In order to carry out the pilot project, FLH will initiate the remaining measurement processes. As soon as all measurement processes are on-line, an indexing technique will be agreed upon and used for the duration of the project. Reporting is cur-

rently done on key finance-related elements and summarized as part of FHWA's annual report under the Chief Financial Officers Act of 1990. The reporting will be expanded in the future to explain program outcomes in addition to providing financial information.

The FLH/FHWA would pursue designation for follow-on pilot initiatives relating to Managerial Flexibility. A Managerial Flexibility Pilot would permit FLH to further its current quality management initiatives in concert with the recommendations arising out of the President's National Performance Review initiatives.

So far, program outcomes and associated measures which partner agencies are identifying are very close to the goals of Secretary Peña and Administrator Slater:

- Support the economy,
- Promote safety,
- Link transportation and environmental policy,
- Advance technology, and
- Foster intermodalism.

QPMA Sponsors Forum at IBM Austin

Topic of Discussion: RE-ENGINEERING

by Charmaine Farrar, CFLHD

The Quality and Productivity Management Association (QPMA) Sponsors Forum involves only a small group of individuals (usually eight to nine people) whose companies are sponsors of the QPMA. This allows participants to become better acquainted with each other and to feel more at ease when asking questions.

The meeting began with a round-table discussion about, "What's Hot in Your Organization Right Now?" Bob Rousch said the Chrysler Corporation, is "trying to change the way people think." Chrysler began an intense effort of reengineering its processes in 1990. Currently, Chrysler is guiding its reengineering efforts through benchmarking with IBM Austin, 3M, Texas Instruments, and Lockheed.

Apple, unlike Chrysler, has shown a downtrend in its quality efforts. Six months ago the quality staff in California was terminated. Becky Howard, the Programs TQ Planning Manager for Apple said this happened because of a change in management.

The next item on the agenda was a presentation from Bill Amelio, the Plant Manager at IBM Austin and our host for the next day's tour. Bill talked about "What It Takes To Lead a Business Reengineering Effort." He indicated that in the 1985, the Japanese showed us that quality and low cost could be provided together in a product. In the 1990s, market competition will be based on speed or how fast a company can make a product. Re-engineering a process can cut the time it takes to produce a product by redesigning the process, performing some tasks in parallel that would have normally been done in succession, and removing repetitive loops in the process. Bill's presentation was a great introduction to what we would hear during our tour of the IBM Austin's Electronic Card Assembly and Test (ECAT) facility, a plant once considered for closure.

> **"It is better to make a manager responsible for the quality in his or her own area rather than to staff a quality office."**

We began our tour of the IBM facility by listening to a series of lectures presented by management. The managers of the facility created their own Total Quality Management (TQM) initiative based on the best practices from other companies. Instead of naming it TQM they call it Market-Driven Quality (MDQ). The principles of MDQ are customer satisfaction, supplier partnerships, people empowerment, benchmarking, cycle-time reduction, and process improvement. Each of the IBM managers had several MDQ examples of success to share with us. One of their greatest success stories, was their remodeling of the facilities's floor plan. The plan went from a single product production layout to one that produces many products. In addition, workers who in the past were specialized on one process became cross-trained so that they were familiar with many processes. An article in *Commitment Plus* (a QPMA publication) about the IBM facility says that the "new system occupies half the floor space of the old system and produces about three times the output with about the same number of workers."

The leaders of the facility believe that it is better to make a manager responsible for the quality in his or her own area rather than to staff a quality office. Annually, the managers of the facility assess their quality efforts.

Although the managers know they are making many improvements, they feel that applying for an award would consume too much resource time. Therefore, they use the information to make improvements.

Quality improvements at the IBM facility have also brought about major changes in management and leadership styles. "Swapping managers" horizontally is important. The managers also said they learned that it is not only important to review the way work is performed but also the communication that is used to perform the work. This keeps them "fresh" and prevents empire building.

Training is a very important topic at the facility. A Technical Associate Program in their College of-Manufacturing offers employees a chance to further their education and receive a degree. The employees' biggest complaint is that there are not enough classes offered. In addition, the IBM facility offers an annual schedule of quality related courses.

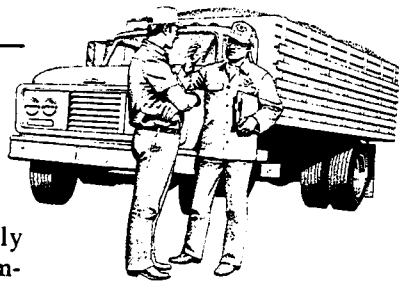
On the last day of the forum, two of the fourteen participants gave presentations. Bob Rousch from Chrysler and Jerry Gass from United Services Automobile Association (USAA) discussed their companies' methods of making reengineering work. Although the businesses of manufacturing cars and insurance are different, the procedures used by Chrysler and USAA to reengineer their processes were similar.

The procedures involved in reengineering a process are comparable to those we in FLH use to assess a process through Process Management Teams. Bob Rousch said that the steps in their reengineering process include identifying responsibilities, actual and elapsed process time, costs, and customer complaints and associated root causes. One of the major steps in reengineering that is not present in FLH's current process management procedure is "benchmarking." Bob said the some of the problems associated with reeingineering are: picking a process that has too broad in scope, lack of team commitment, and selecting benchmarking partners only from similar industries.

Jerry Gass, our second speaker, works for USAA. The company was formed in 1922 to support military employees. Although the company produces a wide variety of insurance coverage, it tries to maintain a one-company image by marketing all of its products in one catalog. Through their reengineering efforts it has become a company dedicated to customer convenience and operator efficiency. One of their senior management's sayings is, "We can't mandate what we don't model."

The QPMA Sponsors Forum was a unique learning experience. In only two days, I learned the equivalent of what I learn in a week at a conference. Because we concentrated on one subject, we were able to obtain a more in-depth understanding of that subject. At a conference, participants attend lectures on many subjects and therefore are unable to gain a full understanding of one subject. The QPMA Sponsors Forum provided me with a thorough knowledge of reengineering.

Office of Motor Carrier on the Road to Quality



The OMC formally began its "Quality Improvement Initiative" by memorandum dated December 13, 1993. Several months ago, OMC identified potential sources for contract assistance. Federal Lands Highway helped in the selection process.

The OMC's senior management will be the driving force of the Motor Carrier quality improvement effort. The new Associate Administrator, George L. Reagle, will chair the Quality Steering Team with the OMC Office Directors, some Regional Directors, and others participating as members. To provide the necessary degree of focus, James R. Keenan has been named OMC's Quality Officer. His overall responsibility will be to plan and coordinate the OMC quality improvement process.

OMC has engaged 3M Quality Management Services to assist in the implementation process. Senior management and facilitator training will begin in January. Within the next 9 months, all employees will receive quality awareness training which specifically addresses OMC implementation of quality management.

This begins an exciting new chapter in the life of the OMC. It is a chapter of which all OMC employees will be part and will be responsible for its success.

Initial steps in this process have included identifying the structure of the Quality Steering Team (QST) and the Quality Officer, and the development of implementation plans. The QST will be chaired by the Associate Administrator for Motor Carriers and will consist of

theOMC Office Directors, a few Regional Directors, a State Official, and the Quality Officer. Implementation Plans included the following:

Announcing OMC's TQM Initiative

A memorandum announcing the TQM effort was prepared for the Associate Administrator for Motor Carriers' signature and distributed to all OMC employees. The memo described the reason for the initiative and detailed plans for implementation. Among other things it identified the structure of OMC's Quality Steering Team, the Quality Officer, and the general announcement for Facilitator applicants.

Posting Facilitator Vacancies

An announcement solicited interest for serving as one of eleven OMC "TQM facilitators" for the next 18 months. The announcement was open to all OMC employees and was similar to those for any other position (SF-171). The applications were mailed directly to the Quality Officer. The responsibilities require approximately 25% of a facilitator's time and are a Critical Job Element for purposes of an employee's Performance Appraisal.

Selecting Facilitators

All facilitator applications were evaluated by a review board and selections made for interviews. Once interviews were conducted and the facilitators selected, letters of appointment were mailed to those selected. The facilitator selections were widely announced via a memorandum and the *Motor Carrier Update*.

While geographic consideration was given to filling the facilitator positions, it was not the prime determinant. Much depended on the qualifications of the individual applicants. The selections were made by the Associate Administrator for Motor Carriers, with the advice of the Quality Steering Team (QST).

Naming The TQM Implementation Effort

3M has recommended naming OMC's quality improvement effort something other than "TQM." Titles other organizations have used include: "Managing Total Quality," "Beyond Excellence," "Census Quality Management," etc. While the method of selecting a name for OMC's initiative had not been determined at the time of this writing, the facilitators wre to be requested to provide the Quality Steering Team with recommendations.

Training

A Facilitator Workshop is scheduled for the week of January 10, 1994 at 3M's headquarters facility in St. Paul, Minnesota. This will involve 5 days of training for the Quality Officer and each of the facilitators.

During January, 1994, "Road Map to Problem Solving" train-the-trainer instruction will be provided to two experienced OMC instructors. Following this training, each of the 40 - 50 OMC TAG, work group, team, etc. leaders will receive 2 days of "Road Map to Problem Solving Instruction" in Washington, D.C.

In February 1994, a Senior Management Workshop will be held for two and one-half days in the Washington area. Attending will be the QST and each facilitator. The workshop participants will prioritize quality improvement initiatives, develop an Annual Quality Plan, and finalize implementation procedures.

During March and April 1994, additional Management Workshops (two and one-half days) will be held throughout the country for each non-clerical employee. These workshops will be delivered by teams of facilitators at central locations. A separate training session "Your Role in Quality" (one day) will be provided to each of the clerical staff to familiarize them with the quality improvement effort, and to explain the critical involvement of each employee. This phase may extend into FY95.

FLH Helps Russia Toward Quality Roads

Federal Lands Highway Program Administrator Tom Edick recently led an engineering team on a mission to Russia. Team members included Greg Dolson, Walter Juris, Thomas Shifflett, Emory Richardson, and Tom Hildreth.

The FLH team returned in December from a one month trip to Moscow in support of the International Highway Program Office and World Bank agreement with the Russian Federal Highway Department. The FLH group teamed with their counterparts in Russia to design and prepare bid documents for several pilot rehabilitation and maintenance projects. The projects cover about 120 km on four of nine primary roads leading out of Moscow to St. Petersburg, Minsk, Sepastopol, and Gorky (Nizni Novogorod). The team col-

lected detailed design, construction materials, cost data, and construction information which will be used to prepare final designs, specifications, and bidding documents. The Russian counterpart group will join with the FLH group in the Eastern Federal Lands Highway Division in January. During a two-month period, they will conduct joint project development and design work.

FLH is transferring technology, including quality principles, while advancing the initial projects. The initial projects are part of an eventual $340 million World Bank loan. The effort is pushing the envelope of total quality, technology, fast-track delivery schedules, and competitive business development initiatives.

FLH Participates in the Kentucky Quality Initiative

Deputy Administrator Jane Garvey provided the keynote address for the December 16, 1993 Kentucky Quality Initiative (KQI) in Lexington. She set the tone and framework by discussing the Nation's transition to a global economy. Transportation is tied to life itself -- and the quality of life. America's highways are the backbone of our transportation network. She then focused on the six themes of the National Quality Initiative: Program Development, Technology, Flexibility, Responsibility, Incentives, and Partnerships.

Kentucky Division Administrator, Paul Toussaint, co-hosted the KQI with State Highway Engineer, J.M. "Mac" Yowell. FLH Quality Coordinator, Mark Chatfield, was one of four presenters at the 's Pre-construction Panel Discussion.

In addition to providing an overview of the FLH's quality efforts over the past five years, Chatfield provided some "lessons learned," and an overview of several of FLH's preconstruction quality improvements. Project scoping, Program Resource and Management System (PRMS), Computer Aided Design and Drafting (CADD), and Process Management Teams were mentioned.

Recommended Reading

Libraries

Each Federal Lands Highway Division and Headquarters maintains a library of books, pamphlets, conference proceedings, video tapes, audio tapes, and other materials related to quality. See your coordinator for information.

Books

A New American TQM, Siba, Graham, and Walden, Productivity Press, 1993.

Handbook for Productivity Measurement and Improvement, William F. Christopher, ed., Carl G. Thor, ed., Productivy Press, 1993

Reinventing Government, "How the Entrepreneurial Spirit is Transforming the Public Sector From Schoolhouse to Statehouse, City Hall to the Pentagon," David Osborne and Ted Gaebler, Addison-Wesley Publishing Company, Inc., 1992.

Information Sources

Federal Quality Institute

The Federal Quality Institute, P.O. Box 99, Washington, DC 20044-0099 provides quality management services to all Federal Agencies. Subscribe to the Federal Quality News by FAX 202-376-3765.

Conferences

The Quality and Productivity Management Association, QPMA, hosts two major quality conferences each year. Contact your Quality Coordinator for dates and registration information. FLH is a Sponsor of QPMA. If you'r not in FLH, call QPMA at (708)619-2909.

Miscellaneous

Brochure

TQM in FLH, an attractive NEW brochure describes our Vision, Mission, Guiding Principles as well as our organization. Your FLH Division Office has copies.

Team Guidelines

The popular book, **Guidelines for Establishing and Operating Quality Action Teams** is available from the Division Quality Coordinator. Additional copies may be obtained by calling Headquarters, 366-9492.

Training Opportunities

Training in all aspects of TQM is available from many sources, internal and external. See your Quality Coordinator for ideas and to help you make arrangements.

Listening Sessions

This year's FLH Employee Listening Sessions will be sponsored by each field Division and Headquarters during January and February. Employees will again have an opportunity to be heard by top FLH leaders. Employees will also help direct future years' strategic business planning.

Strategic Business Planning

Integrating quality and strategic business planning is HARD work. Federal Lands Highway has direct experience to share. Contact Mark Chatfield, HFL-1, 202-366-9492.

Volume V Issue 2 | Federal Lands Highway | Spring 1994

FLH QUALITY NEWS

U.S. Department of Transportation
Federal Highway Administration

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The New Leader

A Concept for Training and Development

by Ken Gould

So, you want to be a leader?

Some people think that leaders are born, not made; that there is some innate talent that will cause these people to come to the fore in every case. Wrong! The new leader is made, not born. It takes a combination of situations and experiences for a person to become a leader in today's context.

In brief, the new leader is a person who first finds and picks the best possible people for the job at hand, then develops a shared vision and shared goals that can inspire and excite everyone to want to be the very best they can be, because it's something they believe in and want to pursue. The new leader provides the training, resources, and tools to enable them to do the job properly, and then gets out of the way, turns them loose, and unleashes the power of the human mind and spirit to do what needs to be done, with as little interference as possible. It becomes a matter of trust and confidence

As we enter the start of the baseball season for 1994, I'd like to propose something to you that could have a major positive impact on your career as a supervisor or manager.

Over the many years that I have been coaching (youth soccer, baseball, basketball) it has become obvious to me that there is a direct correlation between coaching youth sports teams and the development of many of the necessary traits in being a "leader for the nineties." As I have stated in my career development briefings: If I had my way, I'd like to have all of our supervisors and managers (and those who are about to step into this type of position) be involved in at least one season of a youth sport to develop their skills, or at least learn what it is all about to be a leader in today's work and social environment.

To that end I offer this article to show you the potential benefits of a program of this nature, not to mention the good you can do for your community by volunteering. The need for youth sports coaches is always there, it seems. Also, the need is definitely there to develop these skills for FHWA and for you.

Ken

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Publication No. FHWA-FLP 94-003

FLH QUALITY NEWS
Volume V, Issue 2
Spring 1994
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The FLH QUALITY NEWS is an official publication of the Federal Lands Highway Office, Federal Highway Administration, U.S. Department of Transportation. It is published several times a year for educational purposes to promote quality principles among FLH's and other organizations' employees, managers, and supervisors.

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that the job will be done right. It becomes a matter of compassion, and an understanding of backgrounds, where people are coming from. The new leader uses positive reinforcement, motivation, instant rewards only; not coercion, and never uses cutting remarks, put downs, or snide remarks. This is about caring and protecting, to smooth out any wrinkles that occur. And it is about planning, negotiating, coordinating at higher levels so that problems and potential stumbling blocks never reach the team of people who are helping the new leader reach their shared goals. It is also about communicating, keeping the team constantly informed about anything that will affect their work.

All of the above can be attained or learned given the right amount of time, energy, desire to learn, and practice in situations that will promote the learning. Courses can do only so much. It's experiences that can create the new leader in you.

Find out what it's like before you get there for real; or, to become a better leader, try this:

Volunteer for at least one season to coach a local youth ball team. You pick the sport, so long as it is a team sport. Or, become a Scout leader. Personally, my thing is basketball, but I've coached little league baseball, and soccer as well, and the following applies:

The best age group is probably beginners: ages 8-12. Older than that works, but you don't learn the teaching skills as much as you do with the younger kids.

The biggest benefit (besides feeling good about yourself for volunteering and helping) is that you will learn to LEAD instead of just "manage" for, with youth sports, if the team does not perform, you cannot run out onto the field (court) and do it yourself.

You must be able to get the best out of each player (no matter what their skill level) and mold the players into a TEAM in order to have them be competitive. Even if you have one superstar, this works because the other kids learn what support roles are all about.

You will learn:

- **To teach a skill (doesn't matter if you are not personally proficient in the skill).**
- **To learn how people learn in various ways that you must accommodate.**
- **To discover what your mission, values, and goals are, and to communicate that to the team.**
- **To mold a group of individuals into a team with a common purpose, no matter who they are, what background they come from, main language they speak, playing abilities they have. You may even have to deal with potential disabilities (e.g., severe diabetes, Touret-**

tes syndrome, and others I've encountered over the years).

- To teach your team the rules, both written and unwritten, that they must play within, who the significant external agents are (referees, managers, and recreation department personnel); and to work the rules to your team's best advantage.
- To negotiate to try to come to a win-win position (especially during the draft).
- To learn when to develop temporary alliances with the competition and when to break those alliances.
- To strategize, to plan, in order to try to win. To be able to communicate these strategies to your team, and to teach them to do the same and to take advantage of their input.
- To manage your time better. For practice schedules, game schedules, and extracurricular activities related to the team will compete mightily with work, home, and social time.
- To discover hidden agendas, and to work with them to the advantage of the team.
- To deal with problems that arise and with problem people.
- To deal with outside influences (especially parents and siblings).
- To define and then deal with victory and defeat.
- To develop motivation skills to get the kids up for a game, to keep them motivated during the game, to win graciously, and to lose graciously, and then get up for the next game.
- To deal with schedules that are generally beyond your control (both official practice and game schedules and those of the kids, their parents, and siblings) that impact on the team.
- To deal with unexpected emergencies like injuries, and to adjust to the loss of a valued team member. To care about your team and team members.
- To learn compassion in difficulties that you can't control (e.g., what can you do, what can you say, when an 11 year old kid loses his young mother to cancer?)
- To evaluate each member's performance in a positive way, to encourage the best from each player. This will be verbally during a game or practice and in writing afterward.
- To evaluate the team's performance both orally and in writing with a view toward "what did we do right, what did we do wrong, and what do we need to do to succeed the next time?"
- To reward, reward, reward immediately for a job well done during the game, plus right after the game, and right after the season.
- To find and use resources, both official and unofficial (e.g., assistant coaches, team mom or dad, telephone network, money to buy supplements to the official uniform, parents to help during the games for keeping stats, siblings to help keep score, funds for pizza or ice cream parties, tickets to professional games, etc.)
- To provide extra opportunities to learn or to have fun in a structured environment during the season with a view toward increased awareness, knowledge, skills building (e.g., playing at half-times of high school or college games; or just attending high school, college, or professional games; or possibly using instructional audio and videotapes with discussion afterwards).
- To discover what mentoring is all about, and to watch kids progress through high school and college. Let me tell you it's a great feeling when some 6'4" tall kid that you don't recognize comes up to you and tells you he/she's playing varsity ball for his or her high school, and he/she just wants to say "Thanks."

To discuss this concept of leadership development further; and get some lesson plans (for basketball at least), plays, evaluation and statistics sheets, or ideas for extracurricular activities for you and the kids on your team, please call me at (202) 366-1163.

FLH Strategic Business Planning Breakthrough

Federal Lands Highway recently reached a significant milepost. Strategic business planning has been a priority since 1991. Recognizing the value of formal long-range planning, FLH tried and struggled and learned that a strategic plan is not just a document, but an agency's life-sustaining process. Now, three years later, FLH has issued and is operating under an official ongoing strategic business planning process. The Program Administrator signed the new FLH Program Manual Chapter January 31, 1994.

A significant element of our Strategic Business Planning Process is an annual meeting. This year's meeting was held near the Central Federal Lands office in Lakewood, Colorado. Leaders from across FLH met for three days beginning March 7 to review what employees, customers, and our parent organization are indicating for the long-term future of FLH. Although the Tuesday session ran behind schedule, the work on Wednesday and Thursday resulted in a significant breakthrough.

In response to concerns by employees at all levels, the FLH Strategic Business Plan is now much more focused. The plan will contain only four goals which encompass all our work. Moreover, the goals are familiar to everyone in the organization. They are things we can all relate to.

For the FY 1995-97 period, FLH's goals will be (some wording changes may be made as the plan further develops):

- Improve project development, construction, and technical assistance operations.
- Administer an accountable Federal Lands Highway Program that is on time, within budget, consistent with Federal, State, and local agencies' needs and requirements, and improves transportation access to and within Federal Lands.

- Increase employee enthusiasm and ownership of FLH's vision and goals.
- Assure FLH is a center for technical expertise and a showplace for refining and implementing technology.

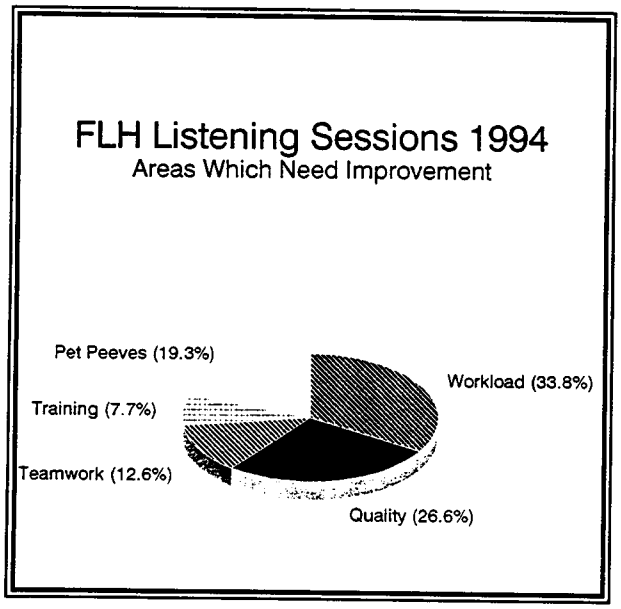
The FLH Strategic Business Plan will be built around these four goals which tie to FHWA's and DOT's long term planning. The FLH budget and resources are allocated according to the goals and objectives of the plan. Ultimately, of course, every employee should be able to see how their work relates to the agency-wide plan. The overall thrust is for everyone in FLH to be aligned in our activities, minimizing misdirection and friction.

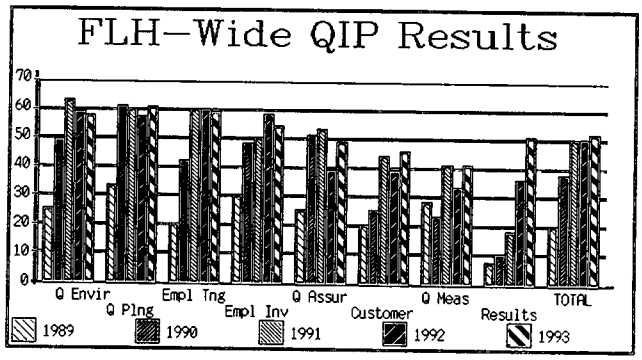
FLH Turned Upside Down!

Results of Internal FLH Surveys and Assessments

by Mark Chatfield

FLH uses three special techniques to give employees the opportunity to direct the future of the organization. In the past, only top executives had this privilege. In a way, FLH's decision-making structure has been turned upside down. For five years in a row, FLH has conducted a Cultural Survey which goes to all employees asking about their perceptions of 20 categories of the FLH work environment. Another assessment which has been ongoing for 5 years is the Quality Improvement Prototype assessment. This rather painful evaluation is completed annually by Division Quality Council members. It provides specific information to managers and supervisors on 8 criteria which show how well FLH is implementing quality initiatives. Finally, for the past 2 years, top FLH leaders have conducted listening sessions to provide face-to-face communications with employees. The listening sessions and all survey data are timed to be available before the Spring Strategic Business Planning meeting.





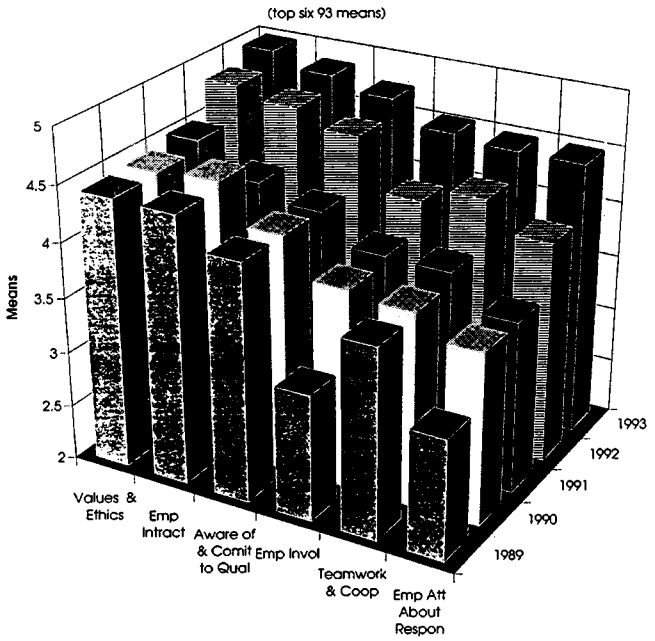
What does all the information tell us? What do you get when you combine the results of the FLH Cultural Survey, the FLH Listening sessions, the QIP assessment?

First, you get a pretty good idea of what is on the minds of FLH employees these days. The surveys may have missed a few FLH employees, but only if they wanted to be missed.

- The Cultural Survey received responses from 390 (63%) employees on a voluntary basis. Less than one percent of all the possible responses resulted in no answer. Fewer than 5% used the "Don't Know" response.
- Listening session involved about 400 employees.
- The QIP assessment included all DQC members.

FLH Cultural Survey Yearly Means per Category, 1989-1993

(top six 93 means)



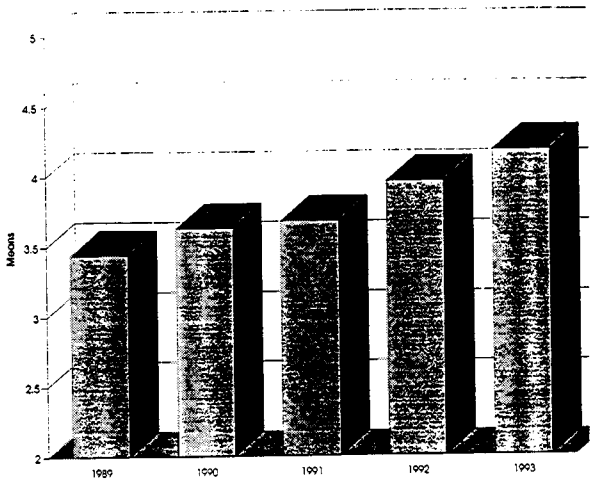
let me at it." Items that suggest we know what the job is and want to do it well:

- The three highest scoring questions on the Cultural Survey were:
  - Every employee needs to contribute to quality improvement (5.29)
  - Employees try to do a good job (5.22)
  - Employees in my workgroup cooperate with each other to get the job done (5.10)
- Employees aware of and committed to quality (4.6)
- Improve plans and specifications (Listening)
- 4th Quarter Awards/Scheduling projects (Listening)
- Need more time to do good work (Listening)
- Concern about quality measurement and quality assurance (QIP)

Second, you see that people are quite pleased with the social environment in FLH. We get along pretty well with one another.

- The second highest category on the cultural survey was, "Employee Interactions."
- One of the top QIP assessment items was, "Quality environment."
- Listening sessions reported that we are doing a good job with interoffice communications, and wellness.

FLH Cultral Survey Yearly Means for All Questions, 1989-1993



Fifth, you see what we predicted in last year's resource analysis -- if we keep piling on the work without providing more people in FLH or substantial organizational changes, quality is going to suffer.

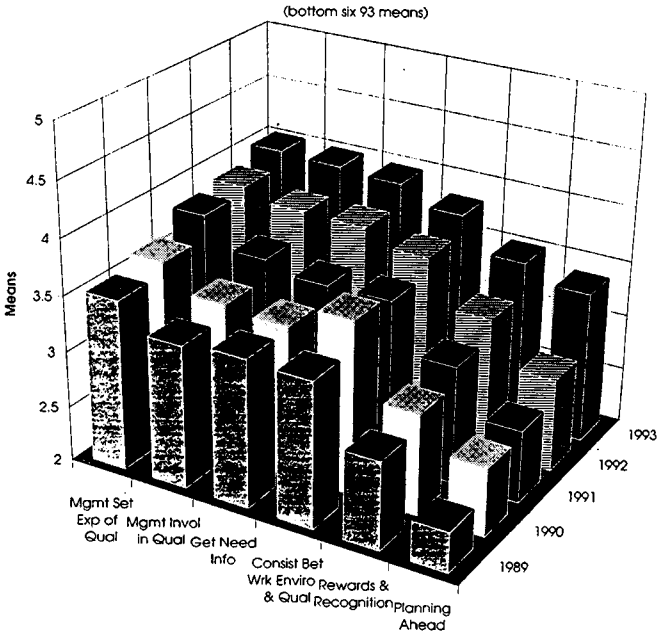
Third, you see that FLH people believe they and their coworkers have very high ethics.

- The highest of the 20 cultural survey categories related to employees appreciation for values and ethics (4.97 out of 6.0).

Fourth, you see that people are very concerned about their ability to do a good job. We are task-oriented, project oriented -- our people say, "Give me the assignment, give me an idea of what success looks like, then

FLH Cultral Survey Yearly Mean per Category, 1989-1993

(bottom six 93 means)



- The QIP and cultural assessment both indicate problems in the "Work Environment."
- People sense that sometimes there are no penalties for poor performance and that some people are overlooked for promotion even though they are deserving.
- Employees have problems being able to plan ahead for policy changes that impact the work.
- The listening session and the cultural survey both show that employees see an imbalance between the number and skill level of the people we have when compared to the work that needs to be done.

By just taking a few steps back and scanning all the information, you can hear employees say, "I'm a hard worker and I really want to do quality work -- but the 'system' is not letting me do it." The Strategic Business Plan for FY '95 and beyond will target the areas which most need to be improved. Maybe we can't change the whole system, but with our excellent people and a good plan, we can make things better.

AASHTO Adopts Quality Imperative

The formation of a full Standing Committee on Quality was approved at the AASHTO Board of Directors meeting in October 1993. This step was a landmark achievement for two reasons. First, it is a rare event when a full standing committee is formed. But more importantly, is the fact that AASHTO, by its action, now formally and officially recognizes the need toward "assure its customers - who include all Americans - better quality in their transportation system and transportation services." The decision to adopt a Total Quality initiative which incorporates a full standing committee to guide its implementation was made after careful study and deliberation.

The impacts that can occur as a result of AASHTO's decision to set into place a means to advance quality in our transportation industry are enormously powerful. An association such as AASHTO with its prestige and far reaching influence on practically all of the transportation and related industry is a significant force for change. By adopting a policy and mechnism to advance the Qulity Imperative can influence more than 20 percent of the way business is carried out in America not to mention that it will have influence on much of the world transportation business. Consequently the AASHTO Quality Imperative can move our entire Nation to higher levels so that we can better meet the challenges of global competition, energy efficiency, sustainable environment and quality of life. But equally important with the endorsement and leadership of AASHTO, the Q Imperative can provide its member departments with the leadership skills and tools they will need to unleash the creativity and energy of the tens of thousands DOT and transportation employees. It is this latter force that can have the greatest of all positive impacts on making the quality difference.

With the approval of the Standing Committee on Quality, Howard Yerusalim, 1994 President of AASHTO, established an emphasis on "Continuing the Quality Journey" as one of his five goals. The presidents emphasis is "to focus internally in member organizations and externally with customers on the continuous improvement of transportation products and services to meet the changing and diverse needs of the many customers."

To further the AASHTO president's quality goal, the Standing Committee on Quality has been organized and held its first quality team workshop March 11-13 in Phoenix. Arizona. In the short two and one-half days of its first meeting, the Committee was able to develop a strategic plan with goals, objectives/strategies and actions. Considering the fact that most all of the 60 Committee ("Quality Council") members were not well acquainted with each other, and came together for the first time on such a wide-open subject area, there was total team work and high energy created in achieving a task that might well have taken several sessions. Success was achieved in part by the leadership, preplanning by AASHTO staff, and facilitation. Led by Committee Chairman ("Council Leader") Larry Bonine - Arizona DOT Director, and "team coach" Bill Ballester, the "Council" developed 5 Goals. From that, "Teams or Goal Councils" were established to develop strategic objectives and action plans. The five broad Goal areas include:

- **Training and Education**
- **Recognition Programs**
- **Clearinghouse on Quality**
- **Communications and Marketing**
- **Institutionalize Quality**

The great thing about the process environment was the total sense of cooperation, synergism, and self actualization and fulfillment created among the team. At

the conclusion of the meeting, the "Goal Councils" began immediately on implementing their action plans even though "Council Leader" Larry Bonine will present the strategic plan to the AASHTO Board for adoption at its semi-annual meeting in April. Here was a good example of team empowerment, as good as any text books might describe.

FHWA Simplifies Strategic Plan

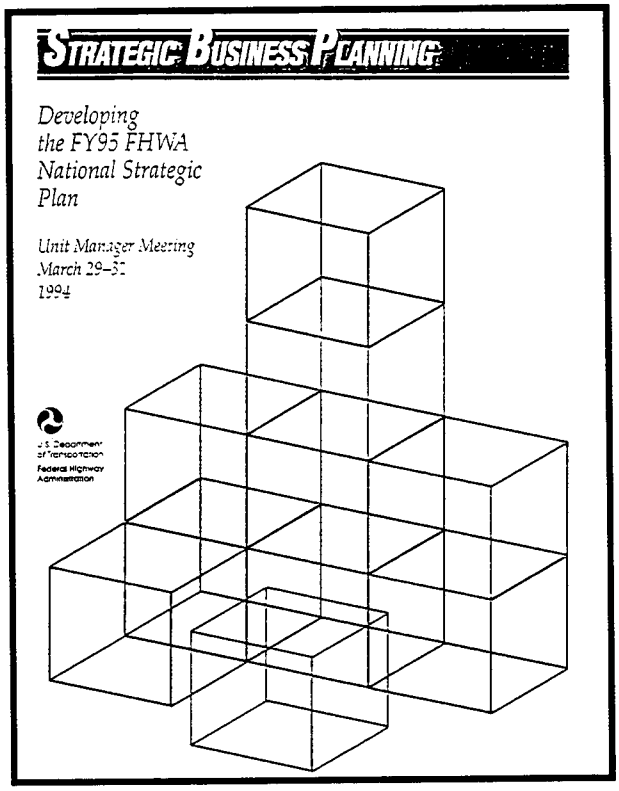
The Unit Managers' meeting on Strategic Planning concluded March 31. You will receive details of the FY '95 plan later as it is finalized. The Unit Managers heard Administrator Slater and Deputy Administrator Garvey provide the framework for the plan to align it with the Secretary's goals. Recommendations to the Office of the Administrator resulting from the meeting are based on six goals with from 3 to 5 objectives under each. Milestones, a sort of strategy statement with a time frame, were suggested for all goals (shown here as preliminary drafts only for the Program Delivery goal because of their quality focus). Emil Elinsky, Chief of the Office of Program Review, was designated Goal Facilitator for Program Delivery.

Goal: Program Delivery

Improve the delivery and quality of our transportation programs and products.

Objective: FHWA adds value and assures integrity in the delivery of programs and products.

- Continuous Quality Improvement - FHWA's policies, practices, and initiatives incorporate principles of continuous quality improvement.
- Stewardship - Implement stewardship plans.
- Financial Management - Enhance FMIP, FMIS, DAFIS, EDS.
- Civil Rights - Updated Title 6 assurance program developed and issued to State DOT's.



- Uniform Relocation Act - Updated implementation procedures incorporate quality concepts.

Objective: Quality is integrated in all aspects of the transportation program.

- All activities in the NQI Long Range Plan are completed or underway by 9/95.
- Initiate MCSAP Peer Review programs by 1/96.
- One phase (e.g., asphaltic concrete, PCC) of QA/QC specifications are approved in each State by 1/96.
- Implement contract and consultant partnering concepts in all States by 9/96.
- Pavement and bridge design decisions in all States consider life-cycle cost comparisons by 9/98.
- All States have piloted concepts to award contracts based on quality and time of completion to enhance low-bid process by 9/96.
- Proactive assistance to the AASHTO quality initiative.

Objective: Technology is used to improve quality, durability, and cost-effectiveness of transportation systems.

- SHRP - Expand cooperative technology transfer, emphasizing Strategic Highway Research Program (SHRP) products.
- R&D - Research and development of new products to improve quality, durability and cost effectiveness.
- Product Marketing - Demonstrate results of research, development, and technology.
- Technical Assistance - Technical expertise is available to support partner implementation of new technology.

GOAL: Mobility

Meet the public's need for improved access and for safe, comfortable, convenient, and economical movement of people and goods

Objective: The NHS is enacted and implementation policies are established.

Objective: A leadership role is established in the development of an NTS and the enhancement of services and intermodal connections for domestic and international transportation.

Objective: ISTEA planning requirements and management systems are implemented and coordinated.

Objective: IVHS, congestion reduction and demand management strategies are developed and deployed.

Objective: A national transportation investment strategy is developed that addresses the highway infrastructure needs of the Nation.

GOAL: Environment

Be an environmentally conscious organization which practices active leadership in working with our partners to protect and enhance the natural and human environment.

Objective: Initiatives are implemented in cooperation with resource agencies to protect and enhance the natural environment.

Objective: Achieve air-quality requirements through cooperative efforts with State DOTs, MPOs, and air-quality agencies.

Objective: Environmental protection and enhancement are integrated into the planning and project development processes.

Objective: Transportation decisions explicitly protect and enhance social and community values.

GOAL: Safety

Improve surface transportation safety through a coordinated effort to reduce fatalities, injuries, property damage, and hazardous material incidents.

Objective: Define and implement priority safety initiatives.

Objective: Safety Management Systems developed and implemented.

Objective: Develop and deploy emerging technologies including IVHS to improve safety.

Objective: Develop performance based motor carrier regulations and practices and focus on high risk companies and drivers.

Joint FLH/Russia team completes designs and contract documents. Design plans being signed by Division Engineer, Eastern Federal Lands.

Standing: Tom Shifflet, EFL; Alexander Stridgevsky; Walter Juras, EFL; Dan Van Gilder, EFL; Vasily Ornatsky; Igor Jivopisthev; Mick Matski, EFL; Greg Dolson, EFL (FLH Team Leader). Sitting: Vladimir Chvonov (Russia Team Leader); Gary Klinedinst, EFL Division Engineer

GOAL: Technology

Develop, transfer, and implement technology through alliances with our partners and the international community.

Objective: Define and implement priority research and technology initiatives.

Objective: Leverage research and technology development investments through aliances with the transportation and technology industries.

Objective: Assist our partners in expanding their capabilities to develop and implement technology.

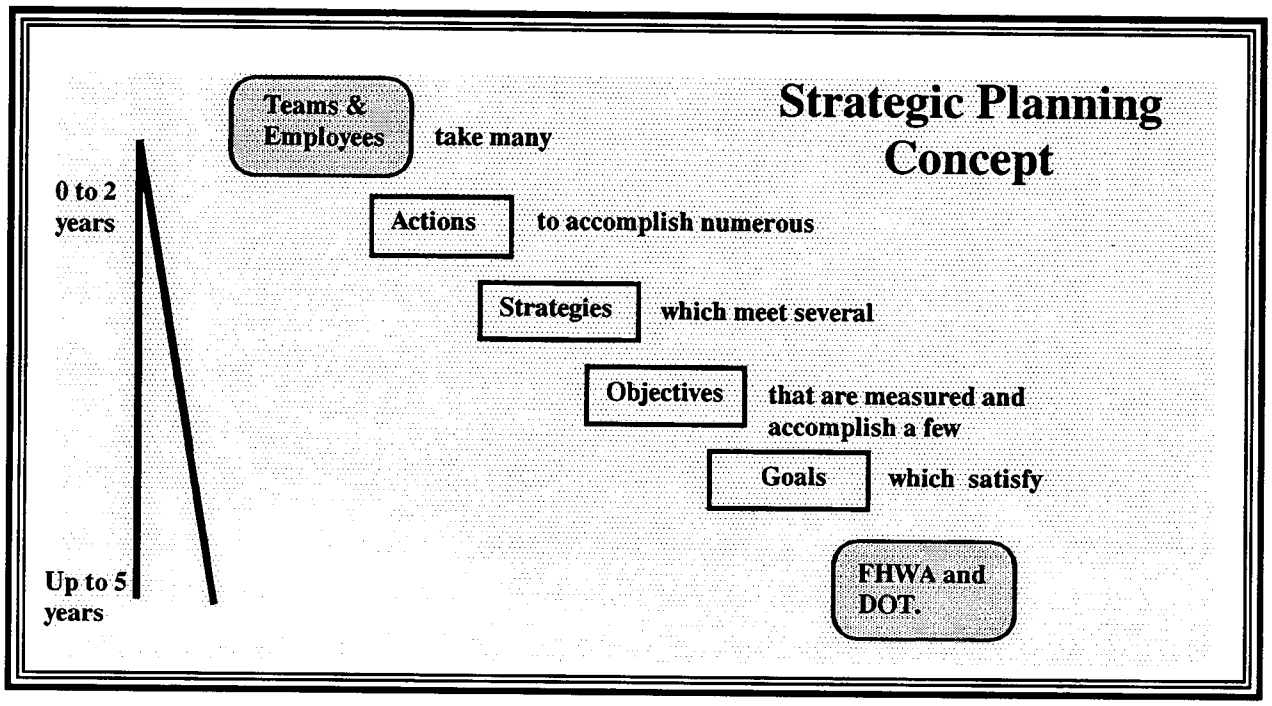
Much work has yet to be done. However, it is apparent that the new FHWA Strategic Plan will be simpler and much more meaningful to the existing plan. FLH's activities will contribute significantly to the FHWA plan. Insofar as quality is concerned, the emphasis is clear. FLH will continue to provide transfer of its quality experiences to FHWA units to the extent resources permit. If you have a particular interest in sharing the quality message, let your Division Quality Coordinator know.

FLH Russian Initiative Recognized by Administrator

by Greg Dolson

Maybe FLH also means "Foreign Lands Highways." The Administrator's regular staff meeting on March 21 was the occasion for special recognition of Federal Lands Highways' primary participants in FLH Russian highway assistance initiative. FLH has been acting on behalf of FHWA and the World Bank to assure Russia has the necessary expertise and training to insure quality road-building. Tom Edick reviewed some of the products of the past several month's work. He showed the FHWA leaders a set of plans and specifications done in Russian for the construction of three major radial road segments serving Moscow.

Administrator Slater congratulated the group by expressing his appreciation. He said that working together on international initiatives is an important bridge in relations between the two countries. The effort is one of the ways the United States is assuring economic development with a key trading partner. FLH engineers are working with peer level engineers in the Russian Federal Highway Department who sent four engineers to spend two months at the Eastern Division's Davis Drive Training facility. Primary participants in the effort received a silver Federal Highway Administration Centennial Medallion.



Walter Juras, Civil Engineer Technician in EFL, has spent most of the past two months on much of his own time with the objective of making sure his Russian counterparts have a good impression of the U.S. Several FLH employees across the country have contributed significantly to the effort: From Western, Emory Richardson, Tom Hildreth; from Eastern, Greg Dolson, Tom Shifflett, Mick Matzke, Dan VanGilder, Walter Juras, Spencer Beale, Rich McDaniel, John Wilson, Odon Dario, Tom Johnson, and Nina Eyfa.

Next step? FLH will have a team of engineers in Russia to train their highway engineers and help oversee the construction in the Moscow area during the summer construction season.

GPRA in FLH

The 1993 Government Performance and Results Act (GPRA) calls for agencies to pilot strategic planning. The pilot agencies are to provide examples to the entire Federal establishment. In addition, pilot agencies have been promised consideration for waiver of cumbersome or restraining bureaucratic requirements. One example is the seemingly arbitrary employment ceilings. In spite of early retirement authority and buyouts, somehow it doesn't make much sense for an organization whose business has almost doubled to be cut in staff. Since FLH is already operating under a well-documented process, to be designated as a pilot is a form of recognition of the value of our work.

The official notice came by letter to Secretary of Transportation (DOT) Federico Peña from Secretary of the Office of Management and Budget (OMB) Leon Panetta. The January 31, 1994 letter designated Federal Lands Highway as one of only four DOT agencies to be the first pilot projects under the 1993 Government Performance and Results Act. FLH is going forward with strategic business planning because it is permitting us to manage by fact toward quality. The GPRA pilot designation holds the prospect for early relief from nagging nonstatutory red tape. If we continue on this road, we may well be among the first Federal agencies to be able to receive this relief.

The PMT Process - Just the Facts Ma'am!

by Jim Amenta, Eastern

The Winter Olympics inspired many of us. Even the ads were inspiring. The Prudential "Straight Talk" ad

L = Low Impact to Process
H = High impact to Process

Location Process Quick Hits

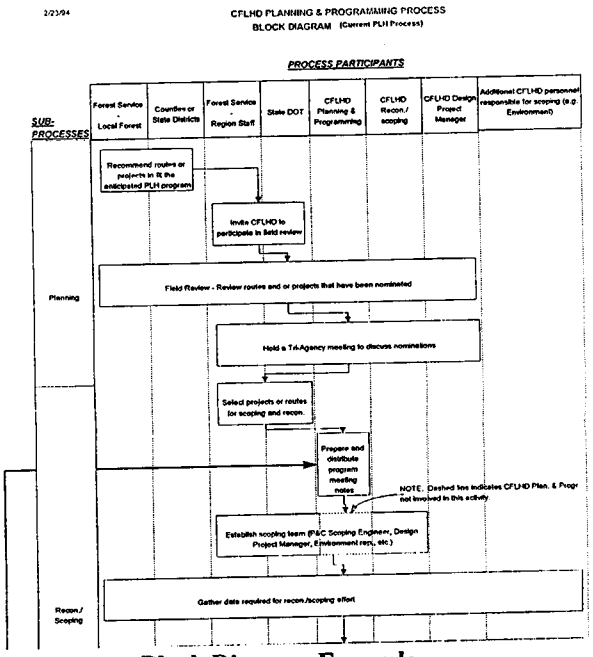
1.	Establish who and when underground utility information is obtained.	H	P. Schneider
2.	Meet with hydraulics prior to writing survey instructions for input	L	B. Roberts/T. West
3.	Project Manager sends memo to P&C after to setting up scoping meeting if Parts 1 & 2 have not been received	L	K. Atkins
4.	Preliminary Design sends memo to bridge giving approximate date they will receive bridge sites	H	J. Seabrook
5.	Meet with geotech after alternative analysis has been performed to establish geotech needs	L	P. Schneider
6.	Include exact superelevation and widening values on bridge site plans	L	J. Seabrook
7.	Provide photolog of bridge sites if Bridge not on scoping field review	L	P. Schneider/T. West
8.	Preliminary design to meet with Team Leader when transmitting Preliminary Design Package	L	P. Schneider/ J. Seabrook
9.	Develop checklists for various activities	L	K. Jacoby
10.	Environmental documents always provided to designers if available	L	K. Atkins
11.	Use automatic data collectors on all surveys	H	T. West
12.	Develop comment sheet for internal client comments	L	J. Seabrook
13.	Develop internal client questionnaire for projects	L	B. Roberts/H. Rohde
14.	Fly more jobs rather than using ground survey	L	P. Schneider/T. West

Example of PMT Results

was reminiscent of the old television series, "Drag Net, and its no-nonsense script. Here's the same approach used to describe one of our most exciting quality initiatives:

FACT - Process Management Teams (PMTs) were developed in December, 1992 to define processes within the FLH divisions. Once a process has been selected, the steps for the PMT are:

- TQM Coordinator schedules tentative meeting dates.
- Section head of the process to be reviewed and TQM Coordinator meet to discuss selection of team members, facilitators, and stakeholders (individuals who hold some share in the management responsibilities of the process, usually they are staff officers and key personnel involved in the process).
- Section head selects process owner (Coordinates the various functions and work activities at all levels of the process, with authority to make changes in the process as required and manages the process end-to-end. The process owner is also responsible for developing the block diagram and the meeting minutes for distribution.)



Block Diagram Example

- At the next regularly scheduled Division Quality Council meeting, the stakeholders approve the process owner, team members, and facilitators.
- TQM Coordinator develops final schedule and makes reservations for the meeting facilities.
- Stakeholder Session I:
  - **Session introduction/orientation by facilitators.**
  - **Sessions I to V discussed to get overall picture of objectives of the PMT process.**
  - **Clarification/definition of process and roles of the key players.**
  - **Identify process boundaries. This is the critical step by stakeholders to decide where process begins and where it ends, to provide team guidance in developing the block diagram.**
  - **Develop Team Charter. This includes the purpose of the process. PMT objectives: clarify customer requirements, develop key measures, and provide recommendations to improve the process. PMT benefits: to establish better, effective customer involvement, meet and exceed customer requirements, and improve the product quality. Deliverable items from PMT process: a defined process, key measures, and an implementation plan to carry out the PMT recommendations. Stakeholders expectations: key measurements that monitor the improvements, more effective customer coordination, and identification of opportunities to improve the process.**
- PMT Session I
  - **Orientation of all PMT members (no stakeholders present). This includes overview of the PMT process, discussion of future sessions, and review and acceptance of the stakeholders Team charter.**
  - **Dismiss all team members not directly involved in building the block diagram.**

- Facilitators provide explanation and samples of block diagrams.
- Remaining team members develop the block diagram of the existing process with assistance from the facilitators.
- HOMEWORK Distribute block diagram to stakeholders, team members, and internal customers (within EFL) who develop and provide comments for PMT Session II.

- PMT Session II

- All team members and stakeholders attend meeting.
- Block diagram posted on wall of existing process.
- Stakeholders provide comments and make recommendations on the block diagram and are then dismissed.
- Team discusses stakeholders, team members, and internal clients comments and incorporates them into the block diagram.
- Team selects internal/external customers/clients for interviews.
- HOMEWORK Distribute block diagram to selected individuals to be interviewed prior to the interview. Interviews to be conducted with both internal and external customers/clients requesting input for the out-of-control points (those areas of the process that are out of control and are therefore causing problems in the process) or areas that are working well. Interviewer to make notes identifying red dot (out of control)/ green dot (areas working well) areas to bring to PMT III for input on the block diagram. Interviewer will also request improvement ideas for the out-of-control points from the customer/client.
- HOMEWORK Process owner to post block diagram at next staff meeting to allow stakeholders opportunity to place red dots and green dots on the block diagram prior to PMT III.

- PMT III

- Finalize block diagram of existing process.
- Identify out-of-control points on the posted block diagram with red dot/green dot exercise.
- Brainstorm improvement ideas for the out of-control-points.
- HOMEWORK Process owner sends out list of out of control points and improvement ideas to internal/external customers for comments.
- HOMEWORK Team determines if internal or external customers interviews are necessary and, if required, conducts interviews.
- HOMEWORK Process owner presents out-of-control points and improvement ideas to the stakeholders and who they may recommend further improvements.

- PMT IV

- Finalize out-of-control points.
- Finalize improvements.
- Brainstorm measurement ideas that measure improvements (e.g., actual hours for preliminary design verses scheduled hours for preliminary design x 100 = __%).
- HOMEWORK Interview those involved with the process (internally) for measurement ideas.
- HOMEWORK Process owner presents measurement ideas to stakeholders who may brainstorm to develop or refine measurement ideas.

- PMT V

- Finalize measures.
- Assign team members to gather measurement data to give to Process owner.
- Develop implementation plan which assigns individuals the responsibility of completing the task of collecting and tracking the measurements that are tied to the improvements on the block diagram. The implementation plan has short term (quick hits) and long term improvements with target completion dates assigned to each of them. Some of the quick hits can be implemented immediately to help correct out of control points on the block diagram.
- HOMEWORK Distribute the implementation plan to the stakeholders for review.

- Stakeholders Session II

- Approve the implementation plan.
- Prioritize items to be implemented.
- Correction of the existing block diagram and providing a final block diagram of the new process with all the improvements incorporated. This block diagram becomes a comprehensive representation of the new and improved process and is done by the process owner.
- Champion and follow through on the implementation plan (process owner).

FACT To date, EFL has completed three PMT's, Location, PS&E, and Bridge with Environment to begin March 1, 1994.

FACT The Location and PS&E PMT's used approximately 1080 hours per PMT. The Bridge PMT used 953 hours or a 12% reduction in effort. This was accomplished through revision of the PMT process. Initially FLH had a consultant to show us how to analyze our processes and improve them. After the Location and PS&E PMT's, the facilitators and process owners believed that they could eliminate some portions of the PMT process and still obtain the same results. We have not only cut the amount of time to complete the process, we have also removed the cost associated with having a consultant run us through the process.

FACT The PMT process is time consuming, but it has identified the areas where we need to concentrate our improvement efforts. Many of these improvements have already been implemented as identified on the quick hit lists.

In the Spirit of Continuous Improvement

by Mona Singleton, WFL

Since we started on the TQM journey, many of us have used customer surveys to help identify areas where improvements are needed. Some of these surveys have been more successful than others, both in terms of numbers returned and helpfulness of feedback. WFLHD's Computer Services Branch recently conducted an experimental survey which was designed to increase survey **return rate** and to get more **specific feedback** from internal customers (computer users).

> **"THE FIRMS THAT ARE KNOWN TO MEASURE CUSTOMER SATISFACTION ARE USUALLY MARKET LEADERS."**
>
> **Jeffrey W. Marr, Walker Research**

The experiment was judged successful when it yielded the best return rate ever. Over 57% of WFLHD employees returned their surveys. This is particularly remarkable because several of WFLHD's employees are trainees, co-op students, and others who don't frequently use WFLHD's computer services and would not be expected to participate in such a survey.

A probable reason for the unusually high return rate was the use of color rather than black and white. The experimental survey used an eye-catching blue, white and black pattern similar to the "1993 Cultural Assessment Survey". That particular survey, which enjoyed an outstanding 70% rate of return in WFLHD, was designed and conducted by FLH's consultant "Futron, Inc.".

The Computer Services survey experiment confirmed past studies which have shown that use of color increases attention, comprehension, and retention. Besides using color, the survey was short enough to be printed on a single piece of paper, front and back. Both the use of color and the brevity of the survey are believed to have been responsible for the high return rate.

Another change from previous Computer Services surveys was more space for comments after each section of questions. This produced a noticeable increase in feedback about specific services such as software procurement, LAN services, and basic customer service.

With the success of this experimental survey, we have been encouraged to improve our survey methods even more. WFLHD is now researching and evaluating suitable "electronic survey" software packages that will run on a Local Area Network (LAN). The goal here at WFLHD is to reduce the amount of manual processing time and eliminate the inefficiency of producing, distributing and compiling paper surveys. We have already evaluated a few software packages, but we haven't yet found a package one that meets all our needs. When we do, and we expect that will happen soon, we'll share that news with you.

Quality and Planning at Milliken & Company

The February Design and Construction Quality Institute conference this year gave Program Administrator Tom Edick, a chance to network with public and private sector leaders who have special interests in quality. One of the highlights was John Horton's presentation on the quality journey at Milliken & Company. John is the Corporate Education Manager of Sales and Marketing. He is an experienced and dynamic speaker with a special ability to relate to his audience. FLH was fortunate that he agreed to speak to FLH leaders at our annual March Strategic Business Planning meeting in Denver. The following is an overview of what he said.

Milliken & Company is a privately held multinational diversified manufacturer of 40,000 products. Many products we would not recognize. Some, however, we are all familiar with. Milliken makes the chemical additive which renders Crayola colors washable, for in-

stance. They also make floor coverings and are the largest supplier of automotive fabrics in the U.S. They have 74 plants worldwide with 13,000 employees they steadfastly refer to as "associates."

Milliken calls their quality initiative, "Pursuit of Excellence." They base their approach on Phillip Crosby's philosophy of the cost of quality, conformance, and non-conformance. In the early 1980's Milliken's cost of assuring and correcting quality was 18 to 20%. It is now 10 to 12%. It doesn't take a Rhodes scholar to figure out the benefits that suggests to a multi-billion dollar company.

The keys to Milliken's success, in order, have been: Acknowledgment of the need to change; Strong top-management support; Line-driven decision making; Recognition that management is the problem and leadership is the solution. Leadership means people who create vision, establish objectives, develop the game plan, provide the tools, form teams, educate and train, and create the right organizational environment. They have changed employees into associates, staff into support, and managers into leaders.

Pointing out that one customer who complains represents 26 others who didn't bother to complain, John said, "If you are not keeping score, you are only practicing." Measurements are visibly posted so all associates can see where their team stands.

Showing the value of benchmarking, he said, "You can't be world class if you stay at home." Through benchmarking, Milliken developed a Kaizen (small, incremental) idea program called "Opportunities for Improvement" (OFI). These are not "suggestions," but simply ideas employees have to make things better. There are thousands of them -- and people get excited about them because they are recognized for their effort. Recognition is usually non-financial, frequent, always sincere, timely, accurate, and fun.

Teamwork is simply a way of life at Milliken. They have over 12,000 teams and offer special team awards at annual sharing rallys.

Partnering is an important success factor as well. In 1981, Milliken was wrestling with 9,490 different suppliers. They currently partner with 1,750 prime suppliers.

Insofar as strategic planning is concerned, Milliken goes out of their way to share their corporate vision with all associates. Their "Cornerstone" strategic plan covers a three-year period. Annually, however, they have a Hoshin-based plan (the critical few key short-term goals) with 2 to 4 specific initiatives for the organization to focus on. Using their strategic planning methodology, they have measured a 10-fold improvement in the past four years.

John's message to us confirmed the need to reduce the number of goals in our Strategic Business Plan. It was encouraging to see the FLH leadership team agree to only four FLH goals for the FY '95 - '97 plan. Yes, there will be many objectives and strategies and actions; but it should be easier to show an employee how their work contributes to FLH when we can focus on fewer goals.

Quality Coordination Team in Transition Again

The QCT keeps telling everyone that change is our ally, not our enemy. The latest example is the current restructuring of the QCT itself. Bob Lale, formerly Design Coordinator, is now Central's TQM Coordinator. In taking on his new assignment with the QCT, Bob accepted several things. First, his direction comes from several places at once. The Division Engineer, the Program Administrator, the rest of the QCT, and the Division employees all place demands on the coordinator. Of course, the chain of command is always there, but it is a different environment.

Second, the Division Quality Coordinator must exemplify team playing. That may put him in the position of diplomat. It turns out that there are times when the Division Engineer's needs may have to give way to those of the team--not the Quality Coordination Team, per se, but the FLH team. A member of the QCT has key responsibilities to the organization as a whole. At least 25 percent of the time, the Division Coordinator is acting on behalf of all FLH, not just the Division.

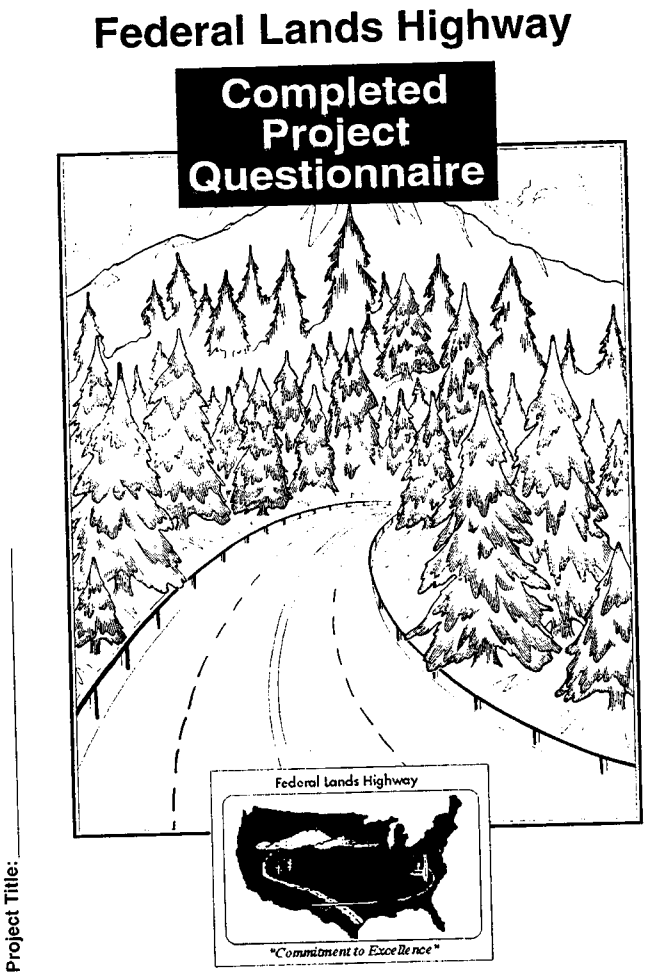
Bob replaces Charmaine Farrar. Char, who replaced Gene Samuelson as Project Support Engineer, has been an exceptional example of teamwork. She has been a leader in many arenas and has kept us on a positive track several times when the QCT started to bog down or get discouraged. Following lunch on March 7, with Tom Edick, Jerry Budwig, and Mark Chatfield, Char received a beautiful framed photo for her new office from the Central Division. She was also recognized by Tom Edick during the Strategic Business

Planning meeting. Tom presented her with a letter of recognition for her extraordinary service as TQM Coordinator.

Navy Likes FLH Work

Recently, Tony Welch received a letter of appreciation from Vice Admiral Kenneth C. Malley. The recognition was for the assistance he provided the Navy in recommending alternative solutions to a safety problem at the Naval Weapons Station in New Jersey. This type of recognition dovetails nicely with the various Divisions' "in-house" appreciation efforts and the FLHO Award. Besides all that, they are also very nice to receive!

Recognition like this is a way to measure customer satisfaction. A tally of the number of individual letters of appreciation received by Division personnel each year could become one part of an overal customer satisfaction index. Keep in mind that thank-you letters to people in other agencies is a most effective way to recognize those who have helped in our partnership for better roads.



Completed Projects Evaluated by Clients

by Mark Chatfield

One of the milestones in the FLH Quality Implementation Plan is to develop a system and process to measure and calibrate customer satisfaction. For years we have done this in terms of employees, or internal customers, using the FLH Cultural Survey. Now we are asking our client agencies what they think of our primary products -- completed design and construction projects.

About 400 surveys were recently sent to key people in the National Park Service, U.S. Forest Service, and other agencies for whom FLH designs and builds roadway facilities. One survey went to all those who were involved in a project development effort which was completed in FY '93. It contains 33 questions aimed at providing a thorough evaluation by our customers of this primary product. Another survey has been sent to clients who received a completed construction project. This 49-question survey permits customers to evaluate bridge or roadway project finished in FY '93.

Since some key officials are involved in multiple FLH projects, there was some concern that one or two clients may be overwhelmed with survey forms to fill out. Fortunately, the maximum number that went to any one person was ten. We have contacted the two or three people who received several survey forms and have worked out ways to minimize their burden.

The questions were developed in full consultation with our engineers and the client agencies themselves. The survey forms were also piloted on a few projects in each Division to weed out any problems. The steps that remain are two of the most interesting. First, analyzing the information to see what our quality level was in 1993. Second, developing an ongoing process to have customers fill out the survey upon completion of every project. By summer, the system should be in place.

ABC Glossary of Quality Terms

According to the Glossary of quality terms in The Quality Yearbook, 1994 Edition by James W. Cortada and John A. Woods:

Acceptable quality level. A level of quality acceptable for a lot or group. These are levels set for purposes of establishing the acceptable quality of inspected samples.

Analysis of Variance. Used to analyze experimental data, one subdivides the total variation of a set of data into relevant groups that are associated with sources of variation so as to test a hypothesis or to estimate types of variances. Three models are recognized in this process: fixed, random, and mixed when studying hypotheses.

Benchmarking. The act of continually comparing the performance of one process against that of another, usually of comparable or greater performance. Thus, for example, comparing your billing process to that of a "world class" or "best-of-breed" process, such as that of American Express. Benchmarking is done to determine the effectiveness of existing processes and to find ways to improve those quickly.

Big Q, little q. The phrase is used to contrast differences between managing quality in products and processes (implying many and major) from manging quality in a more narrowly defined scope, such as for one product or process.

Cause-and-effect diagram. This type of graph illustrates the relationship between one problem and its possible various causes. It is best known as a "fishbone" diagram because it looks like the skeleton of a fish with each "bone" being the answer to the question, "Why?" It is one of the most widely used and effective quality tools.

Cost of quality (COQ). More than the cost of quality programs, this refers to all costs for the prevention of defects, assessments of process performance, and measurement of financial consequences. It is used to document variations against expectations and as a measure of efficiency and productivity.

Recommended Reading

Libraries

Each Federal Lands Highway Division and Headquarters maintains a library of books, pamphlets, conference proceedings, video tapes, audio tapes, and other materials related to quality. See your coordinator for information.

Books

A New American TQM, Siba, Graham, and Walden, Productivity Press, 1993.

Handbook for Productivity Measurement and Improvement, William F. Christopher, ed., Carl G. Thor, ed., Productivy Press, 1993.

Reinventing Government, "How the Entrepreneurial Spirit is Transforming the Public Sector From Schoolhouse to Statehouse, City Hall to the Pentagon," David Osborne and Ted Gaebler, Addison-Wesley Publishing Company, Inc., 1992.

Information Sources

Federal Quality Institute

The Federal Quality Institute, P.O. Box 99, Washington, DC 20044-0099 provides quality management services to all Federal Agencies. Subscribe to the Federal Quality News by FAX 202-376-3765.

Conferences

The Quality and Productivity Management Association, QPMA, hosts two major quality conferences each year. Contact your Quality Coordinator for dates and registration information. FLH is a Sponsor of QPMA. If you're not in FLH, call QPMA at (708)619-2909.

Miscellaneous

Brochure

TQM in FLH, an attractive NEW brochure describes our Vision, Mission, Guiding Principles as well as our organization. Your FLH Division Office has copies.

Team Guidelines

The popular book, **Guidelines for Establishing and Operating Quality Action Teams** is available from the Division Quality Coordinator. Additional copies may be obtained by calling Headquarters, 366-9492.

Training Opportunities

Training in all aspects of TQM is available from many sources, internal and external. See your Quality Coordinator for ideas and to help you make arrangements.

Surveys

FLH surveys employees and customers to let them drive the organization. If you would like to receive information about how this is done, contact your Division Quality Coordinator or the Headquarters office at 1-202-366-9494.

Strategic Business Planning

Integrating quality and strategic business planning is HARD work. Federal Lands Highway has direct experience to share. Contact Mark Chatfield, HFL-1, 202-366-9492.

Volume V Issue 3 Federal Lands Highway Summer 1994

FLH QUALITY NEWS

U.S. Department of Transportation
Federal Highway Administration

400 7th St., SW *Washington, DC 20590* *(202)366-9492*

Customer Satisfaction Through Partnering

Where is the payoff from organizational improvements? To a quality organization, the measure is customer satisfaction -- not money alone. Partnering is a primary part of FLH's work toward quality and it is a contributing factor to the organization's customer satisfaction. The money saving is there also, but the driving force is meeting customer needs.

Partnering in FLH affects both design and construction. In 1994, FLH developed, piloted, and then conducted its first formal measure of customer satisfaction relating to completed project development work and completed construction projects.

Questionnaires were provided to all client agency contacts for every project completed by FLH in 1993. This is the first data set for a continuous measurement system. In the future, questionnaires will be sent to clients shortly after projects are completed. Data will be collected and summarized periodically to track performance on an ongoing basis. Feedback is provided directly to the FLH managers who can benefit from it.

It is fascinating to see what FLH's customers have to say. Actually, it is more than fascinating, it is remarkably positive.

For all FLH, results are summarized in the following tables. The percentages reflect the fraction of the highest possible score, typically described as "completely," or "always.":

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Publication No. FHWA-FLP 94-004

FLH QUALITY NEWS
Volume V, Issue 3
Summer 1994
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The FLH QUALITY NEWS is an official publication of the Federal Lands Highway Office, Federal Highway Administration, U.S. Department of Transportation. It is published several times a year for educational purposes to promote quality principles among FLH's and other organizations' employees, managers, and supervisors.

Other topics may include information about programs, policies, projects, and administration. Contents of this publication may be used without permission. However, courtesy credit is appreciated.

Mention of private firms in no way constitutes an endorsement or recommendation. Comments are encouraged. Communications should be sent by FHWA E-Mail (MCHATFIELD) or forwarded to: Editor, FLH QUALITY NEWS, Federal Lands Highway Office (HFL-1), Federal Highway Administration, 400 7th Street, SW, Washington, DC. 20590.

Project Development

For the 56 Project Development efforts completed in FY 1993, there were 145 questionnaires returned by customers.

- Management Practices - 84%
- Division Effectiveness - 83%
- Product Quality - 85%
- Project Requirements - 85%
- Final Design Customer Satisfaction - 89%

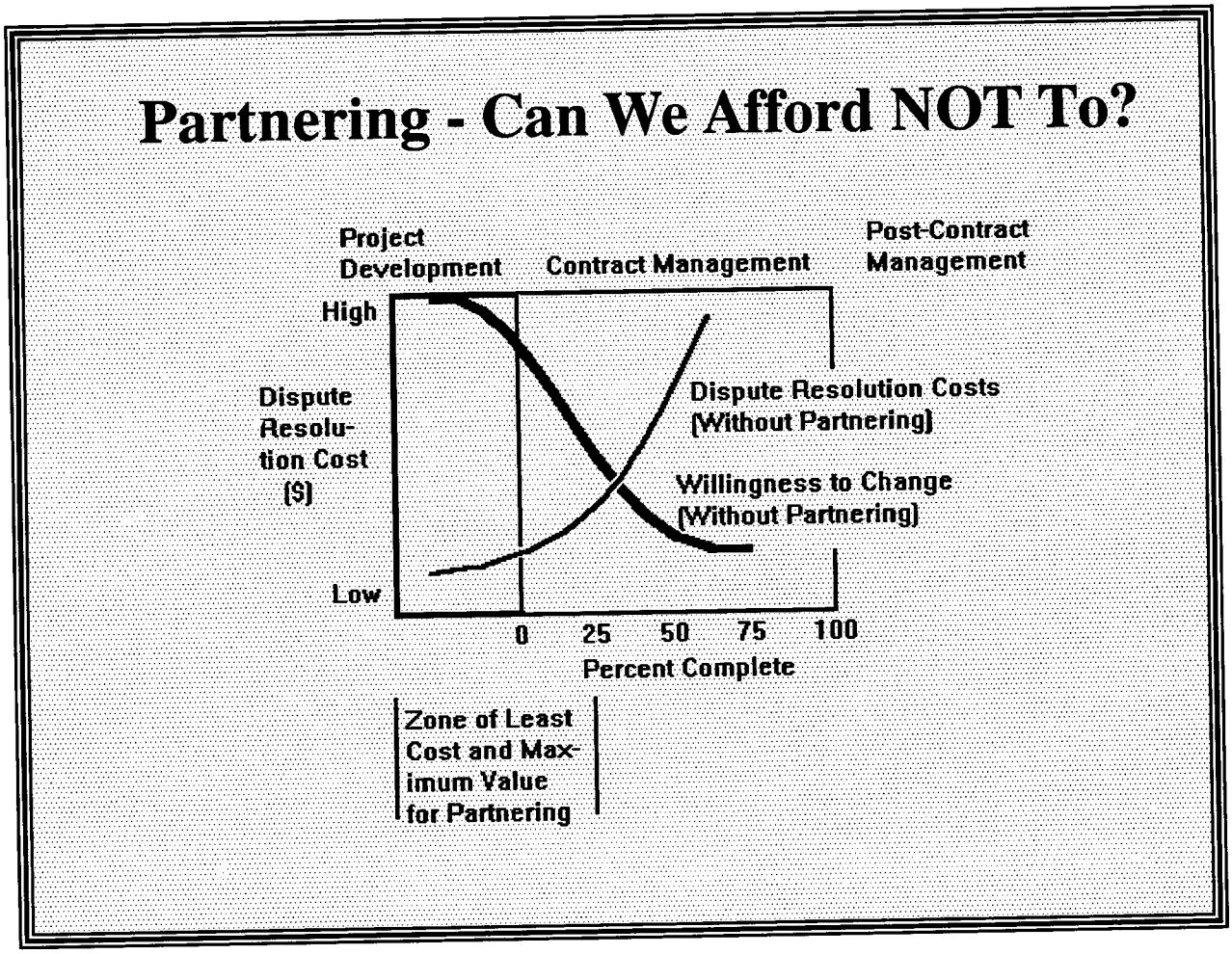
Construction

For the 45 construction projects completed in FY 1993, there were 97 questionnaires returned.

- Management Practices - 83%
- Meeting Technical Requirements - 90%
- Quality Assurance - 93%
- Aesthetics - 90%
- Public Reaction - 50%
- Traveler Accommodation - 86%
- Homeowner Accommodation - 86%
- Overall Customer Satisfaction - 86%

PARTNERING - Alternate Disputes Resolution (ADR)

It was a Monday afternoon, May 16, when 24 Federal Departments and Agencies participated in an ADR pledge ceremony at the Old Executive Office Building part of the White House complex. Leon Panetta, Director OMB, and Steve Kelman, Director OFPP, officiated the one and one/half hour long affair. Linda



Higgins, Director of Office of Acquisition and Grant Management, was the senior DOT representative. Because the FLH has been a leading DOT agency in using various ADR techniques (primarily contract partnering), Program Administrator Tom Edick was invited along with Margret Duncan, MARAD Director of Acquisition, to the ceremony.

The primary purpose of the event was a way to elevate attention and get top management involved and committed to ways that will improve overall government contract administration. Streamlining government acquisitions and improving contract administration was one of the National Performance Review's priority strategies. Use of ADR techniques has proven to be an effective means to reduce contract costs and time devoted to resolving contract disputes. Also, use of ADR techniques have shown that contract administration can be made more efficient, and increases the likelihood that acquisitions can be completed on schedule and within budget.

Accordingly, 24 different Departments and Agencies signed a pledge to:

- Review existing contract disputes for appropriate use of ADR techniques and consider using techniques on at least one existing contract dispute. (FLH proposed a minimum of 2 projects.)

- Consider use of partnering and similar ADR techniques in at least one acquisition. (FLH proposed 32 projects ($200 + M) for remainder of FY 94.)

- Identify and eliminate internal impediments to appropriate use of ADR techniques in contract administration and resolution of existing disputes. (FLH will be working toward an appropriate strategy for this in its 1995-97 SBP).

- Participate on interagency teams to expand the use of ADR. Agencies were not required to pledge specific activities, but the FLH will look for opportunities to participate and share information, techniques and experiences within the highway

industry and other government initiatives. The FLH should be willing to experiment/try and document different ADR techniques and uses, and continue to perfect their use.

The event could be compared in structure and purpose to the 1992 National Quality Initiative event in Houston Texas when the EQC participated in the day long events which culminated in signing of the agreement. This act is no different than making a pledge. Or, if you wish, even the culmination of a partnering meeting or workshop with the signing of a partnering agreement. This idea is an effective way to gain alignment, cooperation, commitment and communication, and it is a good way to begin building trust.

In addition to remarks made by OMB Director Leon Panetta, Steve Kelman, Director of OFPP; Sally Katzen, Acting Chair of ACUS; and Jamie Gorelick, Deputy Attorney General each gave their respective views and reasons to deploy ADR. One could not argue against their views, particularly since most of them are founded in the 1990 Alternative Disputes Resolution Act and are based on experience and results. They emphasized that ADR is not the answer to every potential dispute and will not always be successful, but where it has been used, the evidence is overwhelmingly in favor of promoting its use to the fullest.

The Chief Counsel for the COE, Lester Edleman, sumamrized the COE experience. He was a great advocate for using ADR techniques. The COE number of claims and their value was reduced to less than half with the use of ADR (1,103 claims down to 532 and from $509 M value down to $228 M in 7 years). Contract partnering has resulted in zero formal disputes going to administrative boards or Federal courts. (FLH results are similar.) When he talked about formal contract partnering in terms of teamwork, cooperation, trust he went on to conclude that "if it sounded like TQM he intended it to be just that, because that is what it is ... both are similar if not much the same because they draw on the same hallmarks". This was profound coming from someone so high up in the management ranks and legal profession to boot. It was good to hear that kind of support for TQM.

The COE has a 40-hour core training course covering the full spectrum of ADR understanding and situational applications, even sounded like facilitation and mediation skills were part of the training. Perhaps FLH should substitute or add something like this to our CO core training requirements; perhaps it is as important as some of the currently required acquisition courses after the first core 80 to 120 hours of basic acquisition training. The COE also has a 2-day executive level ADR course.

"ISTEA offers us a real chance to strengthen old partnerships and to build new ones -- at every turn, expanding opportunities to those in business, labor, government, education, and the environment.

We need to bring people together. We need to tie people together just as our highways tie our Nation together. We need to make them a part of this great FHWA family and partnership --those who are our partners of old and, yes, those who seek to be our new partners as well."

FHWA Administrator Rodney Slater; June 3, 1994 First Anniversary Speech.

In addition to the COE, the Commander of the Defense Contract Management Command, and Director of Contracts for the US Information Agency presented a summary of their ADR experiences and reported on successful case studies. These were interesting, and could have easily been case studies of FLH experiences as there was much similarity.

The program concluded with the signing of the pledge document (agreement). But before the actual signing, Steve Kelman cited the DOT for having pledge the greatest number of ADR activities (a total of 43 of which 34 were from FLH). Frankly, we could have applied the first two quarters of FY 95 and raised our "pledge" even higher, but that was not the point. Linda Higgins thanked the FLH several times during the afternoon, and saw to it that we got due recognition and introductions. This was appreciated and is passed on to all FLH because all of the FLH employees' accomplishments in this area have been a team/organization effort.

Administrator's Safety Award

Congratulations to the Eastern Federal Lands Division!

The FHWA Administrator recently announced that the Eastern Federal Lands Highway Division was awarded the Federal Highway Administrator's Occupational

and Safety Program Award for FY 93. The EFL Division obtained the highest FHWA achievement levels within the FHWA in the principal safety program elements. In addition, the EFL's motor vehicle accident rate was the lowest in the FLH organization.

Our thanks to Gary, his staff and all the Eastern employees for putting safety high on their Quality improvement and performance agenda.

Good safety practices in all that we do are vital to creating a quality work place and thus a quality organization. While safety practices are probably the single most important part of everyone's own job and performance, the proper attitude and support for a safe quality organization must be a total organizational effort and responsibility. The Divisions' strategic action planning process should ensure that this important element of quality is afforded proper consideration.

FLH Quality Initiatives

The Quality Coordination Team (QCT), chaired by Mark Chatfield with each field division's Quality Coordinator as members, meets about quarterly to go over FLH-wide quality initiatives and share Division experiences.

The team spent its time working on the new FLH Team Manual due out this summer. Mona Singleton in Western is doing most of the work. The QCT is providing guidance and a lot of 'picky' comments. The new manual will be very comprehensive and will include an overview of how to set up a Process Management team.

Another key activity is developing a guidebook on operating Process Management teams. The work done across FLH in the past two years has given us valuable insight into how these teams can be highly effective. The guidance will be a model for various levels of Process Management assessment. It will also permit Divisions to customize the details to suit their needs. Jim Amenta is taking the lead on this effort with a target of late this year for a draft. In the meantime, Divisions are using the knowledge of those who have been through PMT teams and can help new ones through the meetings.

Bob Lale has the lead on an improved Quality Improvement Prototype assessment procedure. This is the annual review we have done for five years to see how FLH is doing in implementing quality thinking. We have a head start on this project because the Federal Quality Institute, partly at our urging, recently published a Self-Assessment Guide. We should be able to use it 'off the shelf.'

"The mission of the Quality Coordination Team is to coordinate, assess, and ensure Federal Lands Highway progress in implementing the concept of continuous quality improvement."

Adopted January 13, 1993 by the QCT

The Division Quality Coordinators also find themselves working as assistants to the Program Administrator, Division Chiefs, and Division Engineers. The FLH Strategic Business Plan, Division Action Plans and the resource estimates for future years' activities are coordinated by QCT members. QCT members are particularly popular during the busy design and construction season asking managers and supervisors about their resource requirements for the next three years!

The QCT is a high performing team working to coordinate the quality effort. One of our primary concerns is to help FLH employees at all levels be responsible for quality. We try not to be a "Quality Department" where people can avoid personal responsibility by thinking the QCT is making sure everything meets customer requirements.

Partnering Overview

According to Dr. J. Sullivan of Performance Training Corporation, Partnering is the state-of-the-art approach to total quality in customer and supplier relationships. In his workbook, *Partnering Total Quality Teamwork*, Dr. Sullivan states,

"The pressure of global economics, the costly litigious nature of our society, the time pressures of just-in-time processes, and the ever increasing drive toward total quality dictates the need for closer relationships between and organization, its customers and suppliers than ever before. The formation of team based partnerships between customers and suppliers is a critical

linkage of human and organizational resources. The effective formation of trans-organizational team based relationships is an essential ingredient for the survival and growth of today's competitive organization. The process of forming trans-organizational quality conscious teams is called 'Partnering'."

"There are three key principles essential to the Partnering process. These key principles are summarized in the words Total Quality Teamwork. The word 'Total' reflects one of the three key principles because for Partnering to be effective the process must include everything that can positively affect individual, team, organization and trans-organizational work processes. Secondly, the word 'Quality' is a key principle because it is through the application of the appropriate tools that continuous process improvements are possible and on-going improvements in quality are achieved. Third, the word 'Teamwork' represents a key principle because Partnering is not possible without high performance teams. This approach to Partnering practices all three key principles of Total Quality Teamwork.

PARTNERS FOR CONSTRUCTION

Times are changing, permanent resources are dwindling, and there is a continuing need to respond to the evolution of doing business in this atmosphere. The Construction Branch of CFLHD, under the leadership of Charles R. Houser, decided to "Partner Towards Success" in dealing with the climate of downsizing and changing business attitudes. We asked Charlie, "Why did you decide to undertake the task of Partnering and Team Building within your Construction Branch?" His answer was very direct and to the point. "We are facing possible cutbacks in the overall Federal workforce, including CFLHD's construction resources. This involves both in the Denver Office and the Field Engineering Pool. I envision, that through a total commitment to Partnering and our staff working in a total teamwork atmosphere, could meet the challenges of a very increased workload. I think we can do this and still achieve our mission and goals for customer satisfaction and a quality product. It is only possible to do more with less by being more efficient, working as a team to develop synergy each day, and having respect for our fellow workers."

R&H Associates was selected to facilitate a three day Partnering and Team Building workshop to help kick-off the Construction Branch initiative. The first two days were devoted to Partnering with the CFLHD's Construction Branch staff. The last day was utilized to develop a Problem Identification and Resolution Team composed of Construction Branch staff members and selected construction project engineers.

During the Partnering session, a mission statement was developed which reads, "In a unified effort, the members of the Construction Branch commit to support the mission of CFLHD through open and honest communication, trust, respect and improved processes."

The Partnering session identified many issues and existing processes that, if resolved or changed, have a high potential to increase work production and alleviate problems within the Construction Branch. These issues and processes included, but are not limited to,

- workload distribution,
- project staffing,
- general office contract modification process, and
- A&E procedures.

The Problem Identification and Resolution Team developed a mission statement which reads, "This team is committed to continuously improving processes related to construction operations within the CFLHD.

The Problem Identification and Resolution Team pieced together a listing of problems needing change or redirection. These problems were very much like those identified during the Partnering session. The number one issue was to develop an A&E process. Other issues included consistency of plans and specifications, project staffing, low morale, contract modifications,

career ladder for 802's, consistency in documents and records, and contractor quality.

All team members within the Construction Branch and the Problem Identification and Resolution Team now have a better understanding of issues and feelings of each member. There has been enough needed change identified. Now, time and commitment by all involved will dictate the extent of positive change which will be accomplished.

Preconstruction Partnering Exemplified

Partners for Quality Park Roads

by Cindy Story

Partners from the Denver Service Center, Rocky Mountain Regional Office, WFLHD (both office and field personnel), and Yellowstone, Grand Teton, and Glacier National Parks attended the annual Partners for Quality Park Roads meeting. Forty-seven participants attended this session in Tucson, Arizona, February 28 through March 4, 1994. A 40 percent increase in attendance shows partners are actively seeking others within their agencies to participate and support the partnership.

The meeting opened with an orientation of the Partnership and introductions of the new Partners. The orientation discussions included who we are, what we do, and what we value.

A Partnership Progress Survey had been prepared by Saltwater Institute (consultant) and distributed to all Partners for return response before the annual meeting. Partners shared their ideas on what's working well and what's not working so well.

Many types of work sessions were held during the week; park meetings, FHWA meetings, park-specific (individual park/FHWA) partnering meetings, and large group meetings.

Five agenda topics were chosen as being the most important to the Partnership. Each partner chose which area was most important to them and went to work within that work group. Work groups identified what expertise was missing within that group and requested those with that knowledge to join. The five topics were:

- Scheduling & accountability,
- Materials, contractor and FHWA housing, and staging areas,
- Information sharing,
- Roles & responsibilities, and
- Quality--common definition for product and process.

Much information was generated during these work sessions, and each work group set up an action plan for completion and distribution.

A learning session through CFLHD's Mt. Lemmon project was scheduled. John Carver and Ben Torres, CFLHD Project Engineers; Mark Taylor, CFLHD Design Project Manager; and JoAnne Galleher, Landscape Architect, Coronado National Forest; graciously led the partners through the project. They gave an excellent orientation, explained many unique techniques used throughout the project, and answered countless questions concerning the work. The session proved to be extremely educational and enjoyable.

The week closed with a morning session sharing ideas on how the partnership should be driven, the future of Partnering meetings (annual, biannual, or park-specific only), who should attend, and an introduction of the 1994 Steering Committee members.

Partnering Pays

According to Louis Bainbridge and William Spragins of FMI Corporation in Denver, 92% of the project teams who have partnered said they would partner again. FMI surveyed 114 project teams. Of these teams, 104 said they would partner in the future. Eighty-five percent of the respondents were involved in public-works projects, most of which (68%) were highways. Seventy percent of the projects were on or ahead of schedule. Eighty two percent were on or below budget with a savings estimated at $96.5 million on the $4.3 billion project value -- a rate of savings of 2.2%. Eighty two percent of the respondents reported improvements

in attitude, trust and relationships due to partnering; only 8% had a negative experience.

FLH has partnered 38 contracts valued at $244.6 million. Savings have not yet been compiled on all the FLH projects, but assuming the 2.2% rate reported by FMI Corporation, FLH savings would be over $5 million.

FY 95 FHWA National Strategic Plan

by Rodney E. Slater, FHWA Administrator

I remember the tremendous sense of joy, challenge, and thanksgiving that I felt as I was being sworn in as Administrator of the Federal Highway Administration (FHWA) on June 3, 1993. Now, one year later, I feel the same as I look over the National Strategic Goals, Objectives, and Milestones that we have set for ourselves for FY 95 and beyond (see attached) and see all the good we can do for this country and its people.

As we implement our National Strategic Plan (NSP) for FY 95, I am confident that we will be able to meet the challenges and demands facing our country today, as well as provide valuable service to our nation well into the future.

In looking over the FY 95 Goal areas, you will see a departure from previous years' strategic planning efforts. Over the past 2 years, the FHWA needed to reposition itself to implement significant changes in the highway program set forth by the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991. As a result, the primary focus of past strategic planning efforts has been on changing the way the FHWA did business.

Now that the FHWA has made the successful transition to operating under ISTEA, we needed to focus on the services we, as an agency, provide to the nation. Moreover, we needed to consider the impact of our actions beyond our own organizational boundaries. We are fortunate that Secretary Peña, through the DOT Strategic Plan, has set the stage for the individual Operating Administrations within the Department to work together on national transportation priorities.

As a result of the concerted effort made by FHWA employees across the country and at all levels of the organization, I believe our FY 95 NSP will provide the needed focus for our agency to enhance the services we provide to our country. Equally important, our Plan will position our agency to directly support the Secretary's Strategic Plan and effectively work with our sister agencies within DOT.

By working together in implementing the NSP, we can continue the FHWA's tradition for highway excellence and provide the highest level of service to our country for the next 100 years. I fully expect all the FHWA managers and employees to support and actively participate in accomplishing our FY 95 Goals, Objectives, and Milestones. Specific guidance on their implementation will be forthcoming.

Thank you all for making this past year one of the most rewarding years of my life.

Mediation as Alternate Dispute Resolution

by Pierre Henrichsen, Contract Administration Engineer, WFLHD.

Mediation is rapidly becoming one of the most popular Alternative Dispute Resolution mechanisms for resolving construction contract disputes. Some of the reasons for its popularity are:

- It is quick and easy to schedule.
- Compared to litigation, it is inexpensive.
- It avoids unnecessary confrontation and conflict.
- It gives the disputing parties control of the process.
- It has a high (80% +/-) rate of success.

What is the process of mediation, and how does it work? While some details may vary from one dispute to another, the main pieces remain the same as illustrated by the mediated resolution of a major claim brought against WFLHD by one of its contractors.

The claim, in the amount of $1,410,000, was filed by one of our contractors on an eastern Idaho project. The major portions of the claim were based on the contractor's contention of (1) misrepresentation by the

Government by withholding material information, (2) differing site conditions, and (3) invocation of the changes clause.

The claim had been submitted for a Contracting Officer's Decision (COD), and some negotiations had taken part. However, the parties were so far apart that it was obvious that the issuance of the COD would result in immediate appeal and litigation. WFLHD then suggested and the Contractor agreed to try mediation.

The process began with the Contractor and WFLHD exchanging lists of three professional mediators that each had selected. After reviewing the lists and evaluating the qualifications of the six candidates, the two parties met and selected the mediator most acceptable to both of them. They also established mutually acceptable ground rules for how the mediation would be conducted.

Both parties prepared position papers which were submitted to the mediator for his review to become familiar with the claim and the opposing positions. The papers were also exchanged between the Contractor and WFLHD.

Next, a date and time for the mediation session was established, and a neutral meeting place was agreed to by both parties. In addition to the main meeting room with space for both the contractor's and WFLHD's representatives, a second room was set up to which one or the other party would move for individual deliberations and conferences with the mediator.

The mediation session started at 8:00 AM with Contractor and WFLHD meeting together. The contractor was represented by its president, key field and office people, two attorneys, and a consultant engaged to prepare and present the claim. WFLHD's team consisted of the Division Engineer, who was also the Contracting Officer, the Construction Operations Engineer, the Project Engineer, Claims Engineer, and the Deputy Regional Counsel.

The mediator opened the session by introducing himself and giving a brief outline of his background and experience. He outlined the process and explained that the purpose of the mediation was to try and resolve the differences between the two parties, and if possible, to settle the claim.

Following introductions of all present, the Contractor's consultant presented the claim and the Contractor's position on each of the issues involved.

The Deputy Regional Counsel made a similar presentation on behalf of WFLHD reviewing all the issues raised in the claim and stating our position on each.

The parties then separated with WFLHD's group going to the second meeting room, and the mediator began a series of individual sessions starting with the Contractor, then coming to the Government group, and back to the Contractor again.

"...the final settlement of $617,500 including interest, or 43.8 per cent of the original claim, and the fact that there would be no litigation requiring extensive, costly, and time consuming preparations made it feel like it was well worth the effort."

Initially the sessions were long, lasting for an hour or more as the parties evaluated their positions, and put together offers and counter offers. The mediator kept looking for and pointing out advantages to settlement, and the costs and risks if the claim was to be carried into litigation. He also kept bringing up the reasonable aspects of the other side's position, all the time working to bring the two parties together. Little by little the positions changed from being unacceptably far apart to where the gap could be bridged, then to where a settlement acceptable to both Contractor and Government was reached.

It should be noted that the mediation process assures that the deliberations held with the mediator in the individual sessions are confidential. Only the results of those deliberations and information that is specifically authorized, is passed on to the other party.

As the gap between the two parties became smaller, the sessions became shorter, with the last few lasting only five to ten minutes. Still the entire process took 13 hours and was not completed until 9:00 PM that evening. While it made for a long day, the final settlement of $617,500 including interest, or 43.8 per cent of the original claim, and the fact that there would be no litigation requiring extensive, costly, and time consuming preparations made it feel like it was well worth the effort.

Not all mediation efforts result in settlements. However, as noted earlier, the rate of success is high, the process is relatively inexpensive, so the risk of trying it is low. Based on the success in our first mediation experience, it is a safe bet that should circumstances warrant it on any future claims, WFLHD will try mediation again.

GPRA - Partnerships

by Allen Burden, HFL-1

The Government Performance and Results Act (GPRA) was signed into law on August 3, 1993. It provides for the establishment of strategic planning and performance measurement in the Federal Government using program outcome measures. One provision of the GPRA is to have a minimum of 10 Federal agencies initiate GPRA pilot projects. On January 31, the FLH was approved as one of the GPRA pilot agencies. The GPRA was discussed at the March 1994 FLH Strategic Business Planning conference and Executive Quality Council meetings.

FLH has been operating under an internal strategic business planning process (SBP) since 1991. During this period, we were trying to increase the involvement of our major Federal land management agency partners in our strategic business planning and measurement. The GPRA parallels this effort and will be included in the FH 1995 FLH SBP.

Between November 1993 and January 1994, FLHO met with various Federal land managing agencies. We discussed the GPRA pilot project and obtained input for developing performance measures for the Federal Lands Highway Program (FLHP) and the Defense Access Road program.

In our continuing partnerships, meetings are underway with Federal land managing agencies and FLH divisions to discuss the FY 1994 GPRA pilot project status and develop a program administration survey for the FY 1995 performance plan.

The success in FLH's GPRA pilot will provide additional support for the FLHP in the 1997 reauthorization. The justification for the continuation of the program will be based on similar performance measures, including the benefit cost investment analysis. It is important that our FLH inventory and condition assessment data is current. One of the key mutual benefits to our partnership is use of available funds. It is essential that all FLHP funds are effectively used as they become available. This is a bottom-line measure of customer service and is equally important to product quality.

GPRA PERFORMANCE PLAN
FEDERAL LANDS HIGHWAY PROGRAM

"Draft Preliminary Data for Program Outcomes and Performance Measures"
March 30, 1994

Federal Agency Program Goals	BIA	USFS	NPS	MTMC	MEASURES/PERFORMANCE INDICATORS
Economic Development "Transportation Infrastructure to Support Economic Development"	X				1. Miles of Road Improved or Constructed 2. Percent of roads not useable year round. 3. Condition of roads 4. Number of 93-638 Contracts
Improved Safety	X	X		X	1. Accident Rate 2. Safety Management System in Place
Improved Access	X	X	X	X	1. Miles of Road Improved or Constructed 2. Percent of roads not useable year round. 3. Condition of roads 4. Level of Service
Tribal Priorities	X				1. Current Tribal approved transportation plan 2. Program of projects being selected from transportation plan
Environmental Sensitivity		X	X		1. Customer Survey
Recreational Opportunities		X			1. Miles roads improved to recreation areas
Driving Experience		X	X		1. Conditions of roads
Quality of Final Product			X	X	1. Customer surveys 2. Within Scope of Work and Budget 3. Design or Construction Completed on Time
Natural Resource Preservation			X		1. Customer surveys
Efficient and Cost Effective				X	1. Cost per mile 2. Percent funds available for construction
Program Information System				X	1. Hookup with FHWA Wide Area Network 2. Information is Accurate
Timeliness of Program Outputs				X	1. Percent of Project Planning Schedules accurate 2. Percent of Projects meeting program schedules.

Quality & Productivity Management Association

QUALITY & PRODUCTIVITY MANAGEMENT ASSOCIATION

1994 Spring Conference

Mary Spurlock, WFL

As a member of the Western Federal Lands Highway Division (Region 17) Division Quality Council, I was fortunate enough to be selected to attend the 1994 spring QPMA conference, which was held in Chicago. Those of us who had not previously attended a QPMA conference were thoroughly prepared for the conference at the orientation session provided by the QPMA staff at the beginning of the program. It was there that I met several wonderful new friends with whom I now correspond and continue to maintain a network of information sharing. The group consisted of a diverse mix of professions and businesses which greatly enhanced the amount of information available. This in turn resulted in a very interesting and educational experience. The program was designed to utilize networking and ample time between sessions allowed us to share ideas with each other.

I was encouraged to learn that the business world is enthusiastically accepting the concept of quality. Many, in fact, not only practice it internally, but as business entities, are partnering with each other in an attempt to optimize production, services and profits.

I would encourage my peers to participate in the quality journey. The self-satisfaction derived from doing the best we can is well worth the effort. I believe we can empower ourselves and our jobs by living and working with a positive and productive attitude as the quality concepts of TQM demonstrate.

Partnering, Paulina-East Lake Road

Part I. Contractor Viewpoint:

By Marcy and Wes Forman, Elte, Inc.

Partnering has had a very positive impact on this project. The two day partnering work-session gave a good opportunity for all involved to come together, recognize each others' goals for the project and to establish a plan to meet those goals. It also gave a chance for each agency, including the contractor, to see each other as people setting these goals and how to achieve them. It's important for everyone to be recognized as who they are; not just who they represent. It's very easy to have conflict with "the contractor" or "the agency"; it's much more difficult to have it with Wes, Ken, Tom or Jack. The first work session initiated the opportunity to be a person representing your firm. Partnering meetings throughout the project period allowed that process to continue.

The willingness of the Forest Service to partner on this project has been a real PLUS. Because administration supported the plan, support has been good at all levels. A true spirit of cooperation has developed. Decisions were relayed quickly. Problems resolved satisfactorily. Their assistance in locating our project office and lab has been greatly appreciated. They have gone out of their way to make life on the project much more pleasant.

The partnership with U.S. West also has worked well. Coordination of installation in some areas was beneficial to all involved. They recognized our needs and schedules as we did theirs. It seemed to go smoothly and efficiently.

Partnering with Mid-State Electric has not been as positive. It has been difficult to coordinate with them within the time frames necessary to benefit everyone. It seems to be a lack of commitment on their part to be active, successful partners on this project.

Deschutes County has been a good partner. They have participated in goal setting and achieving. A true spirit of cooperation has been demonstrated.

Partnering with Federal Highway is a positive experience. The acceptance of each others goals and the desire to help each other achieve those goals has been complete. As partners, we have resolved problems fairly and swiftly. An atmosphere of open communication and exchange has been present. Views have been exchanged. Federal Highway has been a very good partner.

Good partnering nurtures a cooperative spirit and open communication. It recognizes all the players equally. It resolves problems. It breeds trust and fairness. It allows everyone to meet their goals. It does more than just "get the job done"; it builds an award-winning project.

When people make decisions based on the over-all welfare of the job, not just their agency's or personal point of view, it brings a cohesiveness to the project.

It's hard to assign all the success of this project to partnering. It's possible it would have happened without partnering because of the persons involved in all the agencies. Each person seems to be one who normally gives more to his job than just what is required, maybe partnering brought that incentive; it's doubtful. When people make decisions based on the over-all welfare of the job, not just their agency's or personal point of view, it brings a cohesiveness to the project. We're all out here working together with the same set of goals and meeting our objectives. We're partners.

Part II. Resident Engineer Viewpoint

By Ken Welborn, WFLHD

My staff and I have been participating in the management of highway construction over the past 3 years by partnering. Our "Partnering" has been with the same contractor, Elte, Inc., for the construction of two Forest Highway projects accessing Newberry National Volcanic Monument.

Partnering on the first project was with the prime contractor only. This project was 8 miles of complete reconstruction of a Forest Highway in a tourist area. After the completion of the project, we were both pleased with how relations improved and realized we had become a team, sharing a common goal of constructing an award-winning project within budget.

This first experience with partnering developed trust between the partners and the knowledge that partnering was a good management tool. We decided that all parties involved in the Second Highway Construction Project would benefit if they were aware of the common goals and helping to achieve them.

Two clients, the U.S. Forest Service and Deschutes County, became participants as well as the Electrical and Telephone Utility companies. The U.S. Forest Service participation included representatives from Engineering, Archaeology and Campground Maintenance, as well as the District Ranger and the National Monument Manager.

The inclusion of the many team members from the U.S. Forest Service fostered a sharing atmosphere. We all learned about the many responsibilities of each of the individuals and how this influenced their decision-making process.

The team we had developed could now approach problems with shared goals, as well as recognizing and respecting individual responsibilities. Problem solving became a task that was not unpleasant at all and could be accomplished in a quick and efficient manner.

This second project is now nearing completion and we are proud to have adopted **three** Value Engineering Proposals from the prime contractor, Elte, Inc., resulting in substantial savings to both the contractor and government.

All ideas are taken seriously and are discussed freely without fear of rebuttal or rejection. We do not feel that these proposals to reduce construction costs would have been discussed without the partnering contract.

PARTNERING ON PAULINA-EAST LAKE PROJECT HAS BEEN A WIN - WIN!!!

PART III. Assistant Project Engineer Viewpoint:

By Tom Sutton, WFLHD

What is Partnering? It is an Open and Honest commitment to achieve the goals established by ALL parties.

Where does this commitment BEGIN and END? It begins with the top management of each party willing

> *Partnering is not something that you just learn in a class, it's something you must work at to make happen.*

to take some risks to establish goals and commitments for the parties involved. These people are the Division Engineer, Construction Company Owners and the Clients top management -- Forest Engineer, District Ranger etc. It continues with these commitments being delegated to the people constructing the project. It ends when the project is completed, all payments are made, the paper work is completed and the awards are handed out.

Before work begins on the project, all parties must meet to establish goals for the project that all parties agree to.

What kind of Goals?

Open and Honest communication.

Quality - Award winning project - making a profit, etc.

Public Relations.

Public Safety.

Environmental Issues.

Issue Resolution.

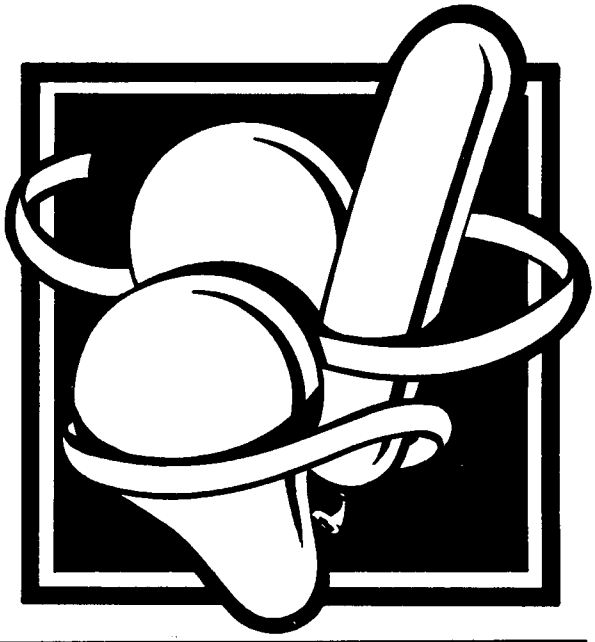
Delegation of Authority to the lowest level possible by all parties.

All of these goals can be achieved within the scope of the contract.

How do you measure partnering? You measure partnering by talking about mutual goals, promoting them, displaying the partnering agreements, and talking about the awards you plan to win.

On the Paulina-East Lake Project a partnering evaluation rating sheet was developed to be used at each partnering meeting. The evaluation sheet was developed around each partner and the over-all goals of the partnering agreement. Each person rates the items that pertain to them.

Partnering is not something that you just learn in a class, it's something you must work at to make happen.



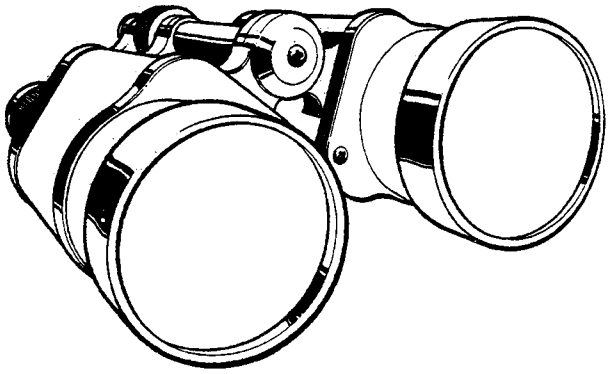
FHWA Moving Further Into Quality - What to do After the Cheering Subsides

by Mark Chatfield

TQM" is a buzz-acronym, "Quality" is a buzzword. Then again, "Buzzword" is a buzzword -- so what? As I pointed out to the California Division and Caltrans officials gathered for a week of quality focused work on May 23-27, "It is not the words or buzzwords, it is the concepts we should judge." If the concepts make sense, we would be wise to use them. If the concepts are not useful, then they should not be pursued.

The Department of Transportation, in articulating its seventh goal, and the Federal Highway Administration, in its Program Delivery and Organizational Capacity Goals, are pursuing the concepts of quality. Neither is calling it "TQM." Both, however, are planning for it; and that's the key.

The primary factor in achieving Strategic Planning goals and their related strategies or milestones can be summarized into one word, "Leadership." It is amazing what leadership can do. A leader, for better or worse, determines the characteristics of her or his organization. A leader who is customer focused, believes in really involving employees in decisions, and shows a passion for fact-based improvement will invariably guide the organization toward quality. On the other hand, a leader who thinks he knows what is best without consulting others and makes decisions based on personal opinion and "experience" will lead an organization toward demise.



The Department of Transportation and the Federal Highway Administration have an excellent opportunity for success. The Secretary has established a rigorous followup agenda. The Administrator requires frequent updates and has spent a significant amount of his precious time working on FHWA's plan. They have both participated personally and extensively in the effort. They recognize it is not enough to "let it happen."

The Federal Highway Administration is rightly proud of its century of partnerships with the States. AASHTO and FHWA have an inseparable relationship for National leadership. Division Administrators and State counterparts work hand-in-hand to lead each State's surface transportation efforts. As these leaders continue to move toward quality through the National Quality Initiative as well as individual State endeavors, we will see progress continue to the extent top officials continue to be perceived as leading it.

Several Divisions have asked about the FLH's experience in quality. The essence of the questions is, "What do we do next?" -- after the awareness training, after the leadership "buys in." Here are some ideas:

- **Set up a steering committee or executive council of top leaders which meets at least quarterly to direct and assess quality efforts.**
- **Establish a council of top-qualified people to carry out quality initiatives.**
- **After initial training (see the following related FLH Quality News Article, "What To Do After The Cheering Subsides") and employee orientation, set up an annual measurement of the organizational culture. Use the results of the survey to set up two or three improvement teams with authority to take action to bring up the lower scoring areas.**
- **Meet with clients and partners and customers to clarify mutual priorities and assure smooth communications.**
- **Hire a well-qualified consultant to work with the steering committee on teamwork.**
- **Measure the steering committees effectiveness.**
- **Publicize results in a newsletter, bulletins, and other media.**
- **Set up a special budget category for quality initiative training and travel.**
- **Begin an annual internal quality organizational assessment and use the results to target future initiatives.**
- **Include quality efforts in a long term organizational strategic plan (3-5 years).**
- **Identify and study other organizations who are doing an exemplary job in an area where your organization does not.**
- **Document planning and quality processes to assure continuity in times of leadership and political change.**

Many organizations have been introduced to quality or continuous improvement thinking through awareness efforts. In the transportation community, the American Association of State Highway and Transportation Officials (AASHTO) and the Federal Highway Administration have conducted National Quality Initiative seminars in most of the States. These seminars typically gather hundreds of the movers and shakers in a State's transportation community. Motivational speakers, panel discussions, and commitments from top executives fill the agenda. After the cheering subsides, attenders go away with heightened expectations. Most States are enthused about initiating changes. Sometimes, people don't know what to do next.

The common misconception about TQM is that it is some sort of thing to be done to make things better. Typically, people hear something about TQM such as

teamwork or measurement. Then they assume they can just start teams and measurement systems with guaranteed success and ... boom! ... instant TQM. Lonnie Moss, former Quality Coordinator in our Western Division called it, "Humming a few bars of TQM." I've tried for years to communicate this as a problem in one fashion or another. Recently, however, I came across an excellent training course which does a super job of de-bunking TQM as an elixir while giving excellent advice on specifically what needs to be done.

Bill Hayden is a consultant to engineering, architects, environmental, and construction organizations worldwide. He is the only one I know who specializes in this way. The three videotapes, training manual, and facilitator's guide are not expensive. They will go a long way providing executives, managers, and supervisors the background they need to get a real jump on their continuous improvement efforts.

Here are some brief excerpts,

"TQM is not a solution. TQM is not a silver bullet and it's not fairy dust. TQM is a strategy that has to be unambiguously connected to the business planning of your organization. It is not this extra thing that you have to carry along with your regular work, it is right at the heart of your practice. The lack of this insight is why we have so many TQM obituaries.

I recently asked an organization about the way they are implementing TQM.

'Are you reporting to the executives?'

'Sure, we tell them every month what we are doing?'

'So, how do you tell them?'

'We put together a report and we go in and present what we are doing.' 'What do they do with it?'

'Oh, they are thanking us for the work.'

Now we know what is wrong -- If the board is thanking them for their work, what does that tell us they are not doing? It tells us they don't even know what is going on. They don't have the foggiest notion that the organization is being turned upside down.

The change agent needs to get an argument going. Unless they begin to sense a conflict is going on, they are never going to realize what this is all about. This is not fun and games. This is tough stuff. This is getting professionals who have been doing things one way all their lives to begin doing things another way. It is not free and it is surely not without tears."

Quality by Design, excerpts of Videos 1 and 2.

Bill Haden, P.E., Sr. M. ASQC; Bill Haden Jr. Consultants, Inc; 3063 Hartley Road, Suite 4, Jacksonville, FL 32257.

TQM and FLH

by Philip L. Thames, Masters Candidate in Political Economy, University of Texas at Dallas

The Federal Lands Highway has done an outstanding job altogether in implementing the precepts of total quality management. The data and measurements they have accumulated points to proof of success. FLH has characterized the groundwork of their transition to total quality management by strongly exerting efforts to improve communications, to concentrate on the customer, to develop long-term strategies, to remain committed to training and education, to assure employees' involvement, and to pursue continuous improvement confidences in measurements. Variations in processes have shown continuous improvement.

Mr. Chatfield and his team at the Federal Lands Highway seem to have grasped the spirit of the quality movement and their efforts should be noted. In his words: "We have not always succeeded. We have made mistakes and on many occasions had to start over. In doing so, we have learned and we have shown our employees and our agency that we are human, and vulnerable, ... and motivated, and committed to quality."

TQM and the Internet "Super Highway"

by Mona Singleton, Western Federal Lands

There has been growing interest regarding Internet "exploration" over the past few months in Western Federal Lands. WFLHD has about ten or more computer users that have access to the Internet via a local "dial up provider". (A dial up provider can be thought of somewhat like a "toll road on-ramp". A provider, usually for a fee, allows computer users access to the Internet by making their Internet "node" or computer system available to dial in users.)

For those who aren't familiar with the Internet, it is sometimes described as a "Network of Networks" made up of millions of computer users, electronic file servers, and service providers that communicate with each other. It can also be described as "a massive system of computer networks where information, files, and electronic mail can be shared world wide". Some of the thousands of "sites" accessible to Internet users include libraries, federal, state, and local government systems, universities, commercial companies, and many other agencies throughout the world.

The Internet is a subject worthy of many articles in itself, however, this article will focus on TQM information available on the Internet.

A search of the University of Minnesota "Gopher" server produced several lists of TQM articles, files, and even free and public domain software available for downloading. Some of the articles located from this search included: "A TQM Game Plan for A Federal Agency", "Reengineering and TQM", "Introducing TQM to Computer Services", "Information Technology Excellence", "TQM Network", and other articles pertaining to TQM in government, education, and various industries and business domains.

The "Gopher" server mentioned above, in very simple terms, can be thought of as the "largest electronic library index card system" in the world, that is distributed to hundreds of locations. (More information on Internet Gopher's can be found in books and reference material dealing with the Internet.)

Another good place to conduct electronic searches for TQM (or other) material is the "University of Texas, Dallas" server. Once connected to this system, users can search for information on any topic by selecting an option called "Search Gopherspace using Veronica". Once this selection is made, users are prompted to enter a "subject keyword" to search for. In this particular case the subject keyword was "TQM".

Much of the Internet terminology may sound amusing and/or confusing to non internet users, but one thing is clear, interest in the Internet and the "Information Super Highway" is growing at an incredible rate. WFLHD computer users are discovering vast new sources of data and information on Internet nodes around the world. It should be noted that one big disadvantage to using the Internet, is unlike CompuServe, American Online, or other On-Line systems, it's not real easy to find your way around. A new Internet user should make an effort to locate good reference material, take a class or workshop on the Internet, or better yet, find a local "guru" for assistance! A basic understanding of Unix commands is helpful for those who are interested in initiating files transfers, performing directory maintenance, or posting information to Internet "newsgroups".

For anyone interested in learning more about the Internet, there are scores of publications, books, and CD-ROMs on the subject. Access phone numbers for the Internet can also be obtained by contacting most local computer stores. WFLHD users are discovering just

how convenient it is to search for material via the Internet. Some are also making use of Internet EMAIL systems to communicate with other government, commercial agencies, and educational facilities not accessible on our Wide Area Network.

ADR Experiment on Wyoming Contract

In the fall of 1988, a contract in the amount of $6.7 million was awarded for the construction of a section of the Battle Lake Forest Highway in Wyoming. Work began on the clearing in October 1988, and the project was substantially complete in October 1991. At the completion of the project, the contractor submitted a claim in the amount of $1.8 million.

After several meetings, it became apparent that the claim was not going to be settled through negotiation. The Division Engineer then urged the Contractor to attempt Alternate Dispute Resolution (ADR) before going forward with formal litigation. The Contractor agreed to participate.

At the meeting the various forms of ADR were discussed. Ultimately, the parties selected a combination of mediation and non-binding arbitration in a mini-trial format. They agreed:

(1) The mini-trial would be non-binding.

(2) A panel would consist of two principals - a high ranking company officer from the Contractor and CFL's Division Engineer (Contracting Officer) - and a mutually acceptable person who was neutral yet knowledgeable in the area of highway construction engineering and design.

(3) The role of the neutral would be that of an advisor to the principals. He would also act as a moderator and facilitator. In the event settlement was not reached, the neutral would write an advisory opinion of entitlement on each issue and provide an advisory opinion of the dollar range for settlement of all issues.

(4) Further discovery would not be permitted and no depositions would be taken.

(5) Each party would prepare a brief for submission to the panel members two weeks prior to the mini-trial.

(6) The conduct of the mini-trial would be as follows: each party would have 4 hours to present their case; except for the panel member, the opposing party would not be present during the presentation; each party could present their case in any manner it wished; during the presentations, the panel would be limited to brief, clarifying questions; the panel would have 1 hours to question each party after both presentations were completed.

(7) A confidentiality clause was included in the agreement which prohibited, among other things, the participation of the neutral as a witness, consultant, or expert for either party in this dispute in the event the claim proceeds to the court or DOTBCA.

(8) The fees and expenses of the neutral, as well as the cost of the mini-trial site, would be borne equally by both parties. All other fees and costs incurred by either party would be borne by that party and not treated as "legal costs" for apportionment in the event that the dispute is not resolved.

(9) The parties preserved the right to further legal action.

(10) Each party preserved the right to terminate the ADR attempt.

The mini-trial proceeded with the parties making their presentations. In order to properly prepare for the mini-trial, a substantial amount of time and effort was expended. The Contractor's presentation focused on the effect of the alleged changes, differing site conditions, defective specifications, and differing site conditions. CFL's presentation, a cooperative effort of the legal counsel and the contract administration engineer, was primarily an engineering presentation of what materials were encountered and the effect of the materials on operations. When the presentations and questioning periods were complete, the panel members entered into settlement discussions. Settlement was not reached, however, and the neutral issued an opinion as to entitlement and the anticipated range of settlement.

The Contracting Officer's final decision was issued on February 1, 1994, and allowed $84,300 plus interest. The decision has been appealed to the Department of Transportation Board of Contract Appeals (DOTBCA).

Even though settlement was not reached, both parties now have a good idea of how their cases will "play" before the DOTBCA. Because of this, there still remains the real possibility of settlement before trial.

Partnering in Central Federal Lands Helps Fix More Roads

Formal Partnering in the CFLHD was initiated in 1992 on the Soda Springs-Auburn project, which was constructed by the Granite Construction Company at a cost of $4.7 million. This partnering effort was very successful. Since the Soda Springs-Auburn project, 11 additional projects have had partnering initiated, primarily on a formal basis, with varying degrees of success. Although initiated separately from the quality initiative, Partnering became a key element of the Federal Lands Total Quality Management program in 1993. Now the Central Division estimates the savings at $1.2 million -- enough to reconstruct several miles of road or rebuild a deficient bridge which otherwise could not have been done due to lack of funds.

To fairly evaluate partnering in its true sense requires an analysis of results beyond actual or unsubstantiated (guessed at) savings in resources and monies when disputes are resolved. For example, a typical partnering agreement contains the following common principals:

- Trust and respect
- Communication
- Timely resolutions
- Safe and quality project
- Constructed on time/within budget
- Have fun/build relationships

All of these elements must be considered in measuring successes and failures.

Additionally, our experience frequently reveals that partnering may be successful at the project level (for example), but fail at the next level when problems are elevated. The reverse is also true. Finally, if negative attitudes on either side (Government or Contractor) can be changed to positive, then a success can be declared.

In our judgement, partnering has a 60 to 70 percent success rate in CFL when measured against the above criteria and concepts. Many disputes have been solved, claims avoided, monies paid or not paid based on negotiations, projects accelerated to completion, friendships established, changed attitudes noted (it's amazing how the contractor may not be the enemy after all), and quality projects constructed.

The failures to partnering generally are based on lack of sincerity and commitment to partnering, insufficient time (of upper management) to remain involved as a true partner, and misconception by both engineers and contractors that partnering suggests the owner pays the costs of disputes regardless of liability or fault.

Here are some highlights of narrative evaluations including actual or estimated cost savings that could be attributed, principally or in part, to partnering for the 10 active/completed CFL projects with a year or more of partnering experience.

Soda Springs-Auburn, Granite Construction Co., Watsonville, CA

As a policy, Granite, with over 15 offices in California and other large states, is dedicated to Partnering and being a leader in the construction industry in the western U.S.

What made partnering work on this project? Total commitment by Granite's top management and acceptance by CFL staff to make it work. Open communication and respect for the partners. Willingness by key partners to accept responsibility for actions, including those resulting in poor quality and subsequent monetary loss. Regular contact by the contractor's branch manager and the FHWA construction engineer on job status, problems, and other activities.

What did not work? Some project people were not "on board" with partnering.

What is the assessment of partnering? Partnering worked extremely well in spite of some friction when costly problems developed on the job. As a partner, Granite's Branch Manager ultimately accepted responsibility for the paving deficiencies and did not claim or request reimbursement by FHWA.

Final evaluation of partnering: Friendships and lasting relationships were made. Resources were saved on claim avoidance regarding paving operations. The estimated claim amount if pursued by contractor is $200,000. To settle that claim without Partnering is estimated at $75,000 to $100,000.

Sentinel Bridge, Mowat Construction Co., Kirkland, WA. The masonry subcontractor was InSite, Wenham, MA.

The project was recently completed at a cost of $4.5 million and is of superior quality.

What made partnering work on this project? Excellent cooperation between the National Park Service (NPS), the FHWA, and the subcontractor on the masonry work. Superior quality was achieved and there was cooperation with the prime, subcontractors, and suppliers. New skills obtained by FHWA project staff in masonry rock construction. Positive feedback from the client on partnering concepts and a desire to partner other FHWA-NPS project in the Western Team (DSC-M) area.

What did not work? Cooperation was less than expected on unexpected changes, and early resolution of changed condition costs and other disputes. Interim partnering sessions were helpful, but not 100 percent of the time.

What is the assessment of partnering? Although not considered successful from a contract administration perspective, excellent team building skills were gained by FHWA & NPS, both during the workshop and the project coordination activities. A quality job was obtained, but this cannot be attributed to partnering. Under a more effective partnering effort, changes would have been settled early in the project.

General Hitchcock Road, Ames Construction, Inc., Phoenix, AZ.

This is CFL's largest project, valued at $10.0+ million and is nearing completion. All major work has been completed except for surfacing.

What made partnering work on this project? Total commitment to partnering has been maintained throughout the project life. Particularly at the project level. Issues have been identified and settled in accordance with the dispute resolution agreement. No intervention has been required by the top level partners. Excellent communication with the traveling public, the city of Tucson, and the clients have been maintained. A friendly atmosphere is noted at all times on the job. Major redesign of certain items has been accomplished in an exceptional manner, together with "costing out" such changes and completing the required contract modifications.

What did not work? One subcontractor did not accept partnering and the work quality is suffering as a result.

What is the assessment of partnering? It was very successful, although the jury is out until project completion. Major changes in wall design were directed and the associated costs were negotiated quickly, at the project level, with full contractor cooperation and fairness. These changes resulted in substantial extra work, which in effect contributed to delaying final paving one season. Temporary paving was directed last fall to provide a safe roadway on the top of Mt. Lemmon to serve the ski area. Partnering facilitated cooperation and fairness in getting this work done and agreeing to a fair price for the additional work. True cost savings by a successful partnering effort is difficult to assess for this project. Considering exposure to extended overhead, delay impacts, reduced winter maintenance, safety risk, and other factors, a $500,000 savings is reasonable to credit to partnering.

Van Duzen-Peanut, Stimpel-Wiebelhaus Associates, Redding, CA.

This most difficult project was completed in November 1993, at a final cost of $5.8 million, $800,000 over the bid amount. The project provided for major reconstruction on California Route 38, a major east-west route serving local traffic, tourists, and the logging industry.

What made partnering work on this project? Superior work quality was attained. Total cooperation in completing the project in 1993, despite an unusually wet spring in Northern California and major quantity overruns, which could have forced the project into an addi-

Partnered project in Central Federal Lands Highway -- Van Duzen - Peanut Road, California (CA-FLH-PFH4-1(10)

tional season. Up front contract modifications were agreed upon to accelerate job, perform additional work, and provide a temporary pavement prior to winter.

Partnering was the guiding force which enabled the FHWA and the contractor to get the job completed by winter, avoiding costly winter maintenance and associated safety liability, reducing the impacts of an extra work season (i.e., extended overhead, remobilization, etc.), and preventing impact to the adjacent project which was scheduled to being in late 1993. The FHWA and the contractor worked together as a true team in finding solutions to the mutual dilemma and negotiating for an equitable price for the changed work. It was truly a partnered effort by all parties.

A major cut slide involving substantial corrective costs developed shortly following the agreement to accelerate the work. The spirit of partnering prevailed and the partners were able to agree to a course of action, negotiate another contract modification, and continue towards early completion. Partnering at the top levels was extremely successful, while at the lower levels it was inconsistent and challenging. However, once all parties realized we had a mutual goal of timely completion partnering at all levels was a success.

What did not work? There was not an early total commitment to partner at the project level on either side.

What is the assessment of partnering? True benefits were realized by individuals in the FHWA and the contractor's ranks. Prior to this effort, the contractor had constructed four projects for CFL, all of which resulted in bad feelings and relationships on both sides. Personalities were hindering getting the job done. Due to the overwhelming success of this project, it is envisioned future jobs with this company will be partnered successfully. Considering all factors, the cost benefits of partnering for the entire project effort is $600,000.

Wolf Creek Road, Harper Contracting, Inc., Kearns, UT.

This $5.4 million project is progressing extremely slowly. Although the actual partnering workshop was successful, there is little follow through with the agreements. The job quality is good, but no cost savings are predicted at this time as a result of partnering.

Thus far, partnering has been unsuccessful.

Battle Lake Road, Frost Construction Company, Lovell, WY.

This $6.5 million project is progressing slowly, but overall partnering is prevailing. No monetary benefits have been identified at this point. The true success thus far by partnering is that negative attitudes are changing in a positive direction. We are seeing teamwork steadily improving on the project.

The partnering workshop enabled all parties to meet and build trust and understanding. This has been successful in almost all instances. The jury is out on the overall success or failure.

Generals Highway, Agee Construction Co., Inc., Clovis, CA.

This $3.9 million project in Sequoia National Park has all the typical features of a NPS job; retaining walls, stone masonry curbs, ditches, and walls, parking areas, utility relocation, and road rehabilitation.

The prime contractor is extremely cooperative and is a true partner ing his day to day approach to the work.

It is too early to declare a success or failure at this time, but CFLHD believes the ultimate rating will be "Successful."

Monetary savings will be realized because of project underruns and not attributable to partnering.

Center Road, Grand Canyon National Park, Qmax Co., Flagstaff, AZ.

This $2.8 million project is 30 percent complete and is behind schedule. Completion is planned for November 1994.

Partnering is determined unsuccessful. Although partnering at the project level is working with positive benefits, cooperation at the upper level has broken down over bidding matters.

No direct dollar savings are expected due to partnering.

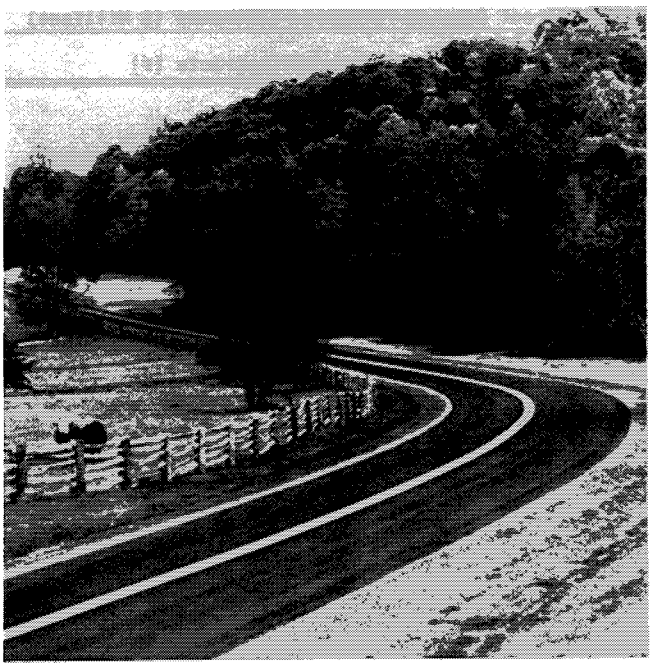
Cuba-Los Alamos, Twin Mountain Construction Co., Albuquerque, NM.

This recycle/overlay project was completed in 1993 at a cost of $2.6 million. The contractor is committed to partnering and initiated a request to partner the project.

The partnering effort was a success in all aspects. Minor changes were necessary during the project, but were addressed at the project level. No issues were unresolved at project completion.

Significantly, the contractor was extremely cooperative and worked closely with our Project Engineer, who was unaccustomed to the project size and its unique features and problems. The final result was a superior quality and aesthetically pleasing project.

The monetary savings are estimated at $50,000.



Partnered project in Eastern Federal Lands Highway -- Blue Ridge Parkway, Virginia (PRABLRIQR11)

New Book on Partnering

Tom Warne, Deputy Director of the Arizona Department of Transportation, has written a comprehensive review of partnering and its application to the construction process. The book, *Partnering for Success*, draws upon Warne's first-hand experience with partnering at

FLH Construction Partnering Data, June 1994

	EFLHD	CFLHD	WFLHD	FLH
Total Partnering Program to Date ($ Millions)	131.7	47.5	65.4	244.6
Total Partnering Program to Date (Contracts)	11	10	17	38
Total Claims on Partnered Contracts ($ Millions)	0	0	0.27	0.27
Total Contract Growth on Partnered Contracts To Date (Percent)	8.9	6.3	10.9	8.9
Total Partnered Contracts Started FY 91 ($ Millions)	74.9	0	11.3	86.2
Total Partnered Contracts Started FY 92 ($ Millions)	19.9	13.9	4.3	38.1
Total Partnered Contracts Started FY 93 ($ Millions)	33.6	24.3	27.5	85.4
Total Partnered Contracts Started FY 94 To Date - ($ Millions)	3.4	9.4	22.2	35.0
Current Ongoing Partnered Contracts ($ Millions)	41.0	35.6	49.7	126.3
Current Ongoing Partnered Contracts (#)	6	7	11	24

the Arizona DOT. ADOT considers partnering to be part of their Total Quality Management efforts. The book includes a forward by ADOT Director Larry Bonine.

If you are interested in the fundamental principles of partnering and how to develop successful partnering relationships, this book is for you. It covers:

- partnership workshop development,
- charter development,
- team expansion,
- value engineering, and
- joint evaluation.

Actual samples of partnering documents, a sample partner charter, and a sample joint evaluation form are also provided.

The book is published by the American Society of Civil Engineers. It can be obtained from the ASCE Marketing Services Department, 345 East 47th St., New York, NY 10017-2398 for $16.

Some Quality Quotes

"If you do not know the enemy and do not know yourself, you will always lose.

If you know the enemy and not yourself, you will win half the time.

If you know both the enemy and yourself, you will always win." Sun Tzu, *The Art of War*

"You cannot hope to understand the mind and the methods of the Hunter unless you have been one of the Hunted." James B. Swartz, *The Hunters and the Hunted, A Non-Linear Solution for American Industry*

"Life can only be understood backwards, but it must be lived forwards." Soren Kierkegaard

"We are in an unprecedented period of accelerated change, perhaps the most breathtaking of which is the swiftness of our rush to all the world becoming a single economy." John Naisbitt and Patricia Aburdene, *Megatrends 2000*

Partnered project in Western Federal Lands Highway - North Prince of Wales Road, Prince of Wales Island, Alaska (AK PFH 43-1(3))

"Changes in the nineties will make the eighties look like a picnic -- a walk in the park." John Welch, Jr., CEO, General Electric

"Nowadays, I make it a practice to call them into consultation on any new work ... I observe that they are more willing to set about a piece of work on which their opinions have been asked and their advice followed." Columella, Roman Landlord, 100 A.D.

"An automobile goes nowhere efficiently unless it has a quick, hot spark to ignite things, to set the cogs in motion. So I try to make every player on my team feel needed -- that he's the spark keeping our machine in motion. On him depends our success." Knute Rockne, legendary coach of Notre Dame

"Underlying the operations of every company -- working like its spine or cerebral cortex -- is its value delivery system. A company's performance is the direct result of how effectively the system is structured and managed." George Stalk, Jr. & Thomas M. Hout, *Competing Against Time*

"Time waste differs from material waste in that there can be no salvage. The easiest of all wastes, and the hardest to correct, is the waste of time, because wasted time does not litter the floor like wasted material." Henry Ford, *Today and Tomorrow*, 1926

"Companies that learn how to make quick response work, will be the winners in the 1990's". Roger Milliken, Chairman, Milliken and Company

"'If you knew time as well as I do,' said the hatter, 'you wouldn't talk about wasting it.'" Lewis Carroll, *Alice in Wonderland*

"If you need a new process and don't install it, you pay for it without getting it." Ken Stork, past president, AME, and principal, Ken Stork and Associates

"Quality comes not from inspection but from improvement of the process." W. Edwards Deming

"Treat the customer as an appreciating asset." Tom Peters, *Thriving on Chaos*

"We lead the industry because we follow the customers." Fred Turner, chairman, McDonald's

"When our frames of reference are fixed and rigid, they become a substitute for thinking. Learning takes place when we have the flexibility to change our frames of reference. The most creative efforts for human beings involve departing from existing frames of reference and constructing new ones." Moshe F. Rubinstein, *Tools for Thinking and Problem Solving*

"People sometimes stumble over the truth, but usually they pick themselves up and hurry about their business." Winston Churchill

"Leadership is the capacity to translate vision into reality." Warren Bennis, President, University of Cincinnati

"I know that most men, even those at ease with problems of the greatest complexity, can seldom accept even the simplest and most obvious of truths, if it would be such as would oblige them to admit the falsity of conclusions which they have delighted in explaining to colleagues, which they have proudly taught to others, and which they have woven thread by thread into the fabric of their lives." Leo Nikolaevich Tolstoy, *War and Peace*

Recommended Reading

Libraries

Each Federal Lands Highway Division and Headquarters maintains a library of books, pamphlets, conference proceedings, video tapes, audio tapes, and other materials related to quality. See your coordinator for information.

Books

A New American TQM, Siba, Graham, and Walden, Productivity Press, 1993.

Handbook for Productivity Measurement and Improvement, William F. Christopher, ed., Carl G. Thor, ed., Productivy Press, 1993.

Horizontal Management - Beyond Total Customer Satisfaction, D. Keith Denton, Lexington Books, 1991.

Information Sources

Federal Quality Institute

The Federal Quality Institute, P.O. Box 99, Washington, DC 20044-0099 provides quality management services to all Federal Agencies. Subscribe to the Federal Quality News by FAX 202-376-3765.

Conferences

The Quality and Productivity Management Association, QPMA, hosts two major quality conferences each year. Contact your Quality Coordinator for dates and registration information. FLH is a Sponsor of QPMA. If you're not in FLH, call QPMA at (708)619-2909.

Miscellaneous

Brochure

TQM in FLH, an attractive brochure describes our Vision, Mission, Guiding Principles as well as our organization. Your FLH Division Office has copies.

Team Guidelines

The popular book, **Guidelines for Establishing and Operating Quality Action Teams** is available from the Division Quality Coordinator. Additional copies may be obtained by calling Headquarters, 366-9492.

Training Opportunities

Training in all aspects of TQM is available from many sources, internal and external. See your Quality Coordinator for ideas and to help you make arrangements.

Surveys

FLH surveys employees and customers to let them drive the organization. If you would like to receive information about how this is done, contact your Division Quality Coordinator or the Headquarters office at 1-202-366-9494.

Strategic Business Planning

Integrating quality and strategic business planning is HARD work. Federal Lands Highway has direct experience to share. Contact Mark Chatfield, HFL-1, 202-366-9492.

Volume V Issue 4 | Federal Lands Highway | Fall 1994

FLH QUALITY NEWS

U.S. Department of Transportation
Federal Highway Administration

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To Team or Not To Team

Fortune Magazine's September 5, 1994 issue had an excellent article titled, "The Trouble with Teams." The author, Brian Dumaine, quotes Eileen Appelbaum in the *New American Workplace*: "It's not that teams don't work. It's that there are lots of obstacles." FLH has a variety of teams with the overall objective of institutionalizing teamwork as the work approach of choice. In order to assure our teams are as successful as possible, it is important to be aware of potential pitfalls.

According to *Fortune*, there are five primary problems with teams:

1 - Leadership rushes out and forms the wrong kind for the job.

2 - Managers launch teams in a vacuum, with little training and support.

3 - Supervisors shoe-horn workers who are lone wolves or are very creative into teams where they are frustrated and non-contributing.

4 - Teams try do a job which would be better done by a single person.

5 - Top officials erode team spirit and morale by downsizing the organization.

Teams can be a lot of trouble, expensive, and risky -- but teams can provide such marvelous performance that they are the necessity of the 90's. Let's think of teamwork in terms of a game of golf to see how we can have and maintain successful teams in FLH today.

1 - Use the right team for the right job. When the golf ball is in the bag or in the hole, you don't need a club. When the ball is ready to be hit, you identify how far you want it to go before selecting the club. The variety of teams, like a set of clubs goes from hard-hitting executive or management teams, to multi-Divisional cross-functional teams, to local work teams, to problem-solving teams. Each one has its place. Any successful golf shot contributes significantly to the total score regardless of the distance achieved. Likewise, any successful team which is aligned to the organization's goals, is a meaningful contributor.

2 - Unfortunately, a golf club doesn't swing itself. A team cannot perform without proper handling. Management must give the team members time to work on the team and provide resources and guidance and training as needed. Resources must come from

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Publication No. FHWA-FLP 95-001

FLH QUALITY NEWS
Volume V, Issue 4
Fall 1994
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The FLH QUALITY NEWS is an official publication of the Federal Lands Highway Office, Federal Highway Adinistration, U.S. Department of Transportation. It is published several times a year for educational purposes to promote quality principles among FLH's and other organizations' employees, managers, and supervisors.

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managers and supervisors. Guidance is available in the new FLH Team Guide.

3 - Team members must trust themselves and those who are sponsoring the team. Sponsors must trust the team. Teams and sponsors must have a clear understanding of what is on the table. If it is a self-managed team, the definition must be clear. If it is a team working on an office environment issue, they need to know the limits of their budget authority.

4 - Everyone needs to know when the team is finished. Work teams, such as a design squad in FLH, are never finished -- they work as a team to get the job done. Process teams and multi-Division teams may be long-term. Problem solving teams need to go through the steps to solve the problem and then disband. When done, a team needs to document its results and move on to new opportunities. We don't need any relic teams in FLH -- they are too expensive to maintain.

Brian Dumaine closes his excellent article, "Yes, teams have troubles. They consume gallons of sweat and discouragement before yielding a penny of benefit. Companies make the investment only because they've realized that in a fast-moving, brutally competitive economy, the one thing sure to be harder than operating with teams is operating without them."

Process Teams Reinventing FLH

Vice President Gore's Reinventing Government initiative has four primary themes:

Cutting Red Tape

Putting Customers First

Empowering Employees to Get Results

Cutting Back to Basics

These are the same success factors that are making FLH's Process Action Team (PAT) approach so effective. [These teams have been called Process Management Teams (PMT) but there has been concern about use of a proprietary term, so we are trying to convert our thinking to "PAT's", ed.]

Within several hours of meetings PAT's develop a list of quick hit improvements which get back to basics and often cut red tape. The meetings are held with a stakeholder and customer emphasis. The very fact that the PAT's are made up of employees who work in the process shows it is a strong empowerment tool. The FLH PAT effort is exactly on target to improve our little corner of government.

Here are the essentials of the FLH process action team work:

Why have PAT's? Understanding work processes and then improving them using people who perform the work and use the products or services reduces waste, saves time, and frees up resources for other work.

What are PAT's? Groups that are uniquely qualified to document and improve a key work process in FLH.

When do PAT's meet? A series of five to seven intense team meetings begin within a few weeks after a PAT is formed. The meetings last several hours and are held over a 6- to 10-week period.

How are the meetings conducted? A detailed agenda and reporting scheme assures the PAT meetings move through the steps in order. A specially trained PAT facilitator assists the team.

Where do the teams meet? Each FLH field Division holds meetings in its facilities.

Who is involved? The Executive Quality Council charters FLH-wide PATs. HFL-20 (Tony Welch) coordinates reporting. Division Quality Coordinators arrange for facilitation and meetings. Leaders, managers, and others who work in the process, affect the process, or are recipients of the product or service are either members of the team or are participants in the team's work.

The Wisdom of Teams

Recently retired FHWA Executive Director E. Dean Carlson gave a book to each FHWA Unit Manager, including FLH Program Administrator Tom Edick. The book is "The Wisdom of Teams" by Jon R. Katzenbach and Douglas K. Smith. After reading the book, Mr. Edick has indicated his belief that the book could be considered a "standard" for FLH. On August 4, copies of the book were sent to every FLH Division. Some highlights from the book:

"We believe that teams -- real teams, not just groups that management calls 'teams' -- should be the basic unit of performance for most organizations, regardless of size." p. 15.

"A team is a small number of people with complementary skills who are committed to a common purpose, performance goals, and approach for which they hold themselves mutually accountable." p. 45.

"...Teams are tougher to form at the top [executive levels of an organization]" p. 216.

"When should you use teams? ... Whenever a specific performance objective requires collective work and real time integration of multiple skills, perspectives, or experiences ... [not whenever you need to empower people or need to get things done across 'silo' or functions.]" p. 268,9.

"Teams do not seek consensus; they seek the best answer. They argue, debate, and work to a decision, sometimes made in common, sometimes made by the leader, and sometimes made by the most logical skill set." p. 290,1.

ANNOUNCING!

The NEW *FLH Team Handbook*

The FLH's latest publication on teamwork is an easy-to-read, yet comprehensive guide to teamwork in FLH . See your Division Quality Coordinator for a copy.

FLH Streamlining Study

One of the key parts of the FLH Strategic Business Plan for the next 3 years is a special organization study. This study is the direct result of performance measures which have been conducted over the past several years. The overall results of the FLH Cultural Survey, the Quality Improvement Process (QIP) assessment, the annual listening sessions with employees, and feedback from customers show that the FLH organization is progressing across a plateau.

Cultural survey results have been up every year, but are not increasing as fast as they were 4 years ago. The QIP assessment scores have a similar trend over five years. Our employees and our measurements are indicating that we know what it takes to do quality work, but our systems and our organization are getting in the way.

Beginning in October 1994, Jim Hall has responsibility for an FLH Streamlining Task Force. The Executive Quality Council will select eight to twelve team members from across FLH. Jim's style is to share leadership so team members will be leading various elements of the study. The team will also be assisted by a consultant.

One of the first things that comes to mind when employees hear that an organization study is taking place is the potential threat. Will I have to change jobs? Will my family have to move? Will I lose my grade or my job? Of course, no one knows the future. We can be assured, however, that if FLH does not study and structure the organization itself, another part of government may do it for us with a lot less empathy.

Most U.S. Employees Are On Teams

According to the June 1994 issue of *Total Employee Involvement* newsletter, 8 in 10 U.S. workers are involved in work teams. The American Society for Quality Control (ASQC) recently had the Gallup Organization conduct a survey. With a margin of error of plus or minus 3 points, the survey of 1,293 adults employed full-time showed that team members recognize great value in teamwork:

- **Ninty percent say they are more willing to try new ways of doing things than they were 3 years ago.**
- **Eighty-seven percent agree that quality efforts enable then to make an individual contribution within a team.**
- **Eighty-three percent say they believe they are empowered to stop work in progress.**
- **Eighty-two percent say quality efforts encourage them to put their own ideas into action.**
- **Eighty-one percent would intervene on behalf of a customer.**
- **Seventy-four percent, up from 66 percent in 1990, say they have been asked to be involved in making decisions about significant aspects of their job.**
- **Sixty-one percent would make an exception to formal procedures or would rework a product or service.**

What To Do About Creeping Cynicism

by Mark Chatfield

Talk about mixed signals! Many organizations today are overtly or covertly telling their workers, "We really don't need you. Why not take this incentive to leave our organization?" At the same time they are also saying, "We want you to spend extra time and effort doing excellent work around here." While this is going on, ABC's Prime Time Live highlights anecdotal instances of government waste, fraud, and abuse. This is followed by some U.S. Congressman lambasting Washington bureaucrats for terrible inefficiency and paperwork nightmares. Then we have Federal Quality Week and hear praise of the government worker. I'm so confused!

Vice President Gore addressed the issue in a July 1994 speech at the Federal Quality Institute awards luncheon. I'm not sure he would give the same speech in Peoria, but it seems to be an appropriate message for all government workers, including us in FLH.

He said that cynicism, "the public's willingness to believe the worst," has increased because of the Nation's speedy and unsettling transformation from an industrial-based economy to an Information Age economy. The news media feeds "voraciously on the failures of government" and politicians often fail to deliver on their promises.

The public's cynicism, "has fallen heavily on the largest institution in America -- the Federal Government -- and it has worn heavily on Federal employees for much of the past two decades." He wants "our government to address head-on the public's distrust of us." That is what is behind the administration's push to challenge "agencies to provide services to their customers equal to the best in business," to cut red tape, tolerate risk, and encourage innovation.

"As you can imagine, cynics need not apply. Leaders must move from control to trust if they want organizations that are the best in business."

Later in the session, Vice President Gore said cynicism is the principal enemy of change. He defined this as, "a belief on the part of those who deep down would like to see change that we who are in the Federal Government are basically not serious about it and not good enough or well-motivated enough to really bring it about." The cynics think the administration's initiative "will sputter out and there will be some sound and fury signifying nothing," he added.

He urged Federal employees to "find your own personal strategy for resisting and defeating the temptation to surrender to that kind of cynicism."

It is not difficult to relate those thoughts to our experiences over the past 5 years of the FLH change initiative. We have had our share of cynics -- and there are still some around -- I suppose it is human nature. The primary things that have kept us going, in my opinion, include:

- The constant, active leadership by the FLH Program Administrator and the rest of the Executive Quality Council, in spite of some very tough times.
- The patience in not giving up when immediate tangible savings could not be shown.
- The emphasis on undertaking new activities using teams which caused participants to recognize that no matter how good we think we are, improvement is always appropriate.
- The leaders sincerely trying to serve, involve, and listen to employees at the working level.
- The measurement of our overall performance and keeping all employees informed of the good news as well as that which is not so good.

Given the fact none of us down here in the trenches can change the cynics of the media, the public, other agencies, or even in FLH, it's hard to argue with the Vice President's advice to find our own personal strategy to resist becoming cynics ourselves. It might help to remember, "We Engineer America's Scenic Highways" -- in spite of the cynics.

Teamwork

by Walter Juras, EFL

The first time I was introduced to the word "team" was in my elementary school during the physical educational class, when the teacher asked students to form a group of students to play soccer and compete in upcoming games between local schools. We called my group the Team of 11.

The purpose of creating a team was not only to learn how to play soccer but also how to coordinate and cooperate with each other, plan the strategy to pass the ball and score to win the game and, of course, be the champion.

Today, in a global economy and corporate workplace where tough competition exists among countries and companies, I understand how important the word "team" really is.

In many, if not all, industrial countries, teamwork is discussed in managerial meetings in terms of improving the quality and production emphasizing how it is important to any successful organization.

Why is it so important to have teams at the workplace? Why should they be encouraged?

First, there are many people with the ability to create and improve an organizational function. An individual working person may not produce up to his or her full potential because there may be limited communication with the manager or head of organization. Working with a group of people, the person will be able to communicate and share knowledge with other coworkers. As a team, any problems that arise will be solved much more quickly and smoothly.

Second, a team will work more independently from managers. Decision making by the team on smaller issues will save a lot of time and money, because the managers can't always be with employees. This, in turn, gives more responsibility to the team.

Third, teamwork not only means that the lower level or lower grade employees have more responsibility, it also means that the greatest responsibility and skills are

required from a leader. This happens as managers incorporate themselves into teams. They let the team know that they are part of the effort and goals to do the best job.

In some organizations there are many teams doing different jobs. This may create some problems with one team communicating effectively with others, especially in case a need for an opinion or in solving a major problem. Someone from one team may say that this is not his or her job and may be afraid that he or she may get behind on the team's own assignment. It is necessary for managers to see coming problems, arrange meetings among teams, discuss, and communicate.

There can't be competition between a teams inside the organization. That may create an employee relations problem which can effect quality and production. As a

team, quality and production will improve and there is more pride from job and mutual friendship between employees,

- To share the commitment to perform work using the resources of all members assigned to a project within an organization,
- To increase employee empowerment and involvement. To foster participation, and
- To improve productivity and quality.

So let the teams, just like my Team of 11, pass the ball to the 21st Century and score and win.

[Walter recently participated as a key team member in FLH's assistance to Russia. He speaks Russian fluently and was able to provide both engineering expertise and translating services. He expanded his involvement to become an ambassador and host to Russian engineers visiting in the Washington, D.C. area, spending a great deal of time in evenings and on weekends to make sure our guests felt welcome. His personal interest and participation makes the whole FLH team look better. ed.]

Self-Directed Teams

Some teams may have more authority than others. The most powerful and authoritative team is an executive leadership team like the FLH's Executive Quality Council. The next most powerful team is one that is self-directed or self-managed. Here are some of the characteristics of self-directed teams:

They do the "regular" work,

They are permanent,

They plan, operate, and control their part of the work,

They rotate team leadership,

They each know more than one part of the work to be done,

They are highly skilled in team processes and operations,

They train others on the job,

They have a lot of management support,

They make decisions within their boundaries, such as who performs certain jobs, work schedules, vacation schedules, discipline, and

They are accountable for work getting done.

The Quality Coordination Team recently benchmarked several high-performance teams at a conference in Florida. One of the speakers pointed out that teamwork is not the objective. Performance is the objective. If your part of the organization can achieve the best performance using a team, then a team is necessary. If the best performance is achieved by one person's creativity, then you should let that person do his or her "own thing."

Current management thinking suggests that the concept of people having "jobs" is rapidly evaporating. Rather than having the boundaries of a "job," all members of an organization rally to the work that needs to be done, contributing to the best of our ability. Whether in a team environment or not, keep in mind that we are seeking the best answer, the best product, or the best solution.

1995 Unit Plan

The FLH's Strategic Business Plan is available in each Division. Divisions all have their own strategic plan. Some branches and even some individuals have long-term plans tied to the agency's plan. The FLH plan is provided to the FHWA as a Unit Plan. All the FHWA operating units provide their unit plans which represent the detailed efforts which will accomplish the FHWA's National Strategic Plan under the Department of Transportation's Strategic Plan. All this amounts to a hierarchy of plans.

On September 1, FLH's Unit plan provided an overview which shows some background and the general emphasis.

GPRA Pilot, Performance Management, and Reinventing Government Initiatives

The FLH is proud to have been selected as one of four Department of Transportation units to serve as a Pilot Agency for Performance Measurement under the Government Performance and Results Act (GPRA). Since 1989, the FLH has been aggressively pursuing performance management, continuous improvement, customer focus, employee involvement, and reinventing initiatives. In 1991 an American Society of Civil Engineers' Peer Review conducted at the initiative of FLH provided planning information. Beginning in 1992, the FLH proceeded with strategic planning work to develop a unit-wide comprehensive business plan. In 1991 and 1992, FLH contributed to and followed FHWA 2000 planning initiatives. In 1991, the Office of the Administrator initiated a management review of FLH. In 1993, FLH developed a comprehensive Strategic Business Plan (SBP) and Unit Operating Plan integrating quality initiatives. The FLH Strategic Business Plan is an ongoing process involving management, employees and partner/customer agencies. The FLH SBP includes all "regular" FLH business as well as change initiatives. It accounts for all FLH resource estimates used in strategic improvements and the FLH's four business/mission areas. It also incorporates overall outcome performance indicators which meet the requirements of GPRA. The abbreviated plan shown herein has been developed as a "Unit Plan" for use by FHWA and others as part of the FHWA Strategic Business Planning Process.

Organizational Development

FHWA's Organizational Development goal calls for an organizational plan and structure to accomplish the mission and goals. The National Strategy is to develop target Unit and subunit organization structures based on defined roles, responsibilities and resource allocations. This objective and its related strategy are considered to be ongoing activities in the FLH. However, in an effort to optimize human resource use and respond to employee and customer needs, the FLH is embarking on an in-depth organizational assessment. The study is to be done by December 1995 and recommendations implemented by September 1996.

The FLH is continuing a long-term goal for defining and initiating improvements in the delivery and quality of the FLH programs by improving work processes in all key planning, project development, construction, procurement, and administrative systems. This initiative was started in 1992 and is being done in several phases over a 4-year period.

Key Issue

The major barrier to improving the timely and effective delivery of the FLH Program is inadequate personnel resources. To help overcome the personnel resource obstacle, the FLH has steadily increased the use of contract engineering and technical support services. Although we have targeted an optimal contract support

level at 10 to 15 percent and maximum tolerable level to be less than 25 percent, the program delivery demands have forced the cap to as much as 55 percent in one Division in order to meet program delivery schedules. In FY 1994 the FLH used more than 210 contract work years which is up from 185 work years in FY 1993 to support its direct operations. This constitutes over 35 percent of the total FLH work force and is in excess of 39 percent of the design and construction direct work force which is clearly the cost avoidance, quality, and program effectiveness danger zone. Even with the major use of contract services, many of the key FLH strategic business objectives were unavoidably deferred. The direct cost impacts to deliver the same program with lower overall quality, timeliness and effectiveness *exceeded $8 million (2%)* more than if direct forces were available to accomplish the same program level.

New Quality Coordination Team Members

Phyllis Chun ...

I was born and raised in Honolulu, Hawaii and graduated from the University of Oregon. Have worked for Federal Highways since I got out of college. All my working career has been in the human resource management field working with Federal Lands since 1982. I've always worked with people, and am convinced that everyone wants to do to a good job, but that sometimes we inadvertently put barriers in their way. My interest in this position is to help set up the environment so that people *can* do their best (and will consequently be happier). I've always thought that it would be a thrill to be the best in the world at something Usually I thought in terms of being the best (Olympic champion!) at some sport, and I want to be a real part of making FLH the best. Not only in words, or on paper, or as part of a vision, but doing concrete things to make it a reality. I'm a very results oriented person and like to see things happen/get done.

I also want our employees to like their work so much that they *want* to come to work because it is fun, and they like what they are doing. I think that being a part of an organization that was *recognized* as the best at what it does, would help create that environment.

Phyllis

Bob Lale ...

In preparing this article for the fall edition of the FLH Quality News, I thought that it would be a good idea to first look back at what my predecessors, and contemporaries said in their initial articles. While looking for their articles, I was reviewing the back issues of the FLH Quality News that Charmaine saved (Thanks Char!) and something became very apparent. We have come a long way in the journey toward a quality organization! By my calculations, we have been on this journey for 6 years already. The amount of effort that we have put forth and the accomplishments we have achieved are no small feat.

What is really evident is that people seem to have become more educated about the functions and efforts of our organization, and have become more accepting of the idea of working in a quality establishment. You see new authors writing in every issue about subjects that they probably didn't know much about before TQM. This shows that the word is getting deeper into the organization and spreading throughout the ranks.

During the last 6 months (it is hard to believe that it has already been 6 months) I have realized that I really didn't know much about our quality efforts. I learned that what appeared to be many different initiatives, was really part of the big picture. Each effort that we have undertaken is only a tool to get us closer to a continuously improving quality outfit. I have also learned that no matter how hard the Quality Coordinator markets, trains, and communicates (pulls, pushes, and shoves) the program to the staff, the real change comes from the effort put forth by each person. When this sincere commitment comes from the individual (and it is beginning to show up here and there) the rest is easy.

What do I bring to this position? My experience of working with many various areas of the organization has helped me to understand some of the frustrations and complications of their diverse work environments. I also have a motivation to tackle difficult assignments, and a commitment to effect change in how we work, hopefully to make our jobs less stressful, more satisfying, and rewarding. My primary focus as I see it today will be to try and get everyone to understand how they can directly affect the mission of the organization, and also to establish meaningful measures that will show us how we are doing. With tangible results, I think it is easier to convince people that we are on the right track.

One final thought. Over the last six months, I have had the opportunity get to know the individuals that make

up the QCT and must say that we have been in the past and are now very well represented by "quality" individuals who sincerely have the organization's best interest at heart. I hope to eventually be included in this group by living up to their established standards.

Bob

Benchmarking High Performance Teams

by Phyllis Chun

What do Walt Disney World, Frito-Lay, and the Eddie Bauer Company have in common? They are all world class-companies that have transformed their work environment into a successful team-oriented operation. The QCT, Jim Hall, and Gary Klinedinst participated in a 2 1/2-day conference on "Benchmarking High Performance Work Teams" in August. Ten companies that produce a wide variety of different products or services described how they approached team implementation, what worked for them, and some of the lessons they learned in the process.

In spite of the variety of products and services produced (ranging from "fun" produced by Walt Disney World, to insurance services from AllState Insurance Company), several key requirements for successful teams emerged from all of the presentations.

There must be a business need for the change to teams. It won't work if the sole motivation is "It's the right thing to do". Everyone involved must understand WHY an organization is moving to teams.

There must be real TRUST among those involved. This means trust between management and staff, AND trust between teams and team members

One size does not fit all. Different organizational structures, goals, and end products demand different kinds of teams. Task teams, process teams, functional teams, self directed teams, etc. all have their appropriate place in the team environment.

Educate, educate, educate and train, train, train. We cannot expect teams to be successful unless we provide the information, tools, resources, time, and management support to learn and practice their new roles and functions.

The general direction of Self-managed Teams:

- **Increasing participation of all employees in the business,**
- **Making decisions at the point of action,**
- **Recognizing that all members of the organization want to feel valued, and**
- **Increasing the ownership of each individual for achieving business results.**

A system of measurement must be in place. Team members need to know exactly what they are expected to do, and how success will be measured. In fact, successful teams often develop this information for themselves.

Teams need direction. They don't need to be told what to do, or how to do it, but they need to have a clear idea about what the goal is.

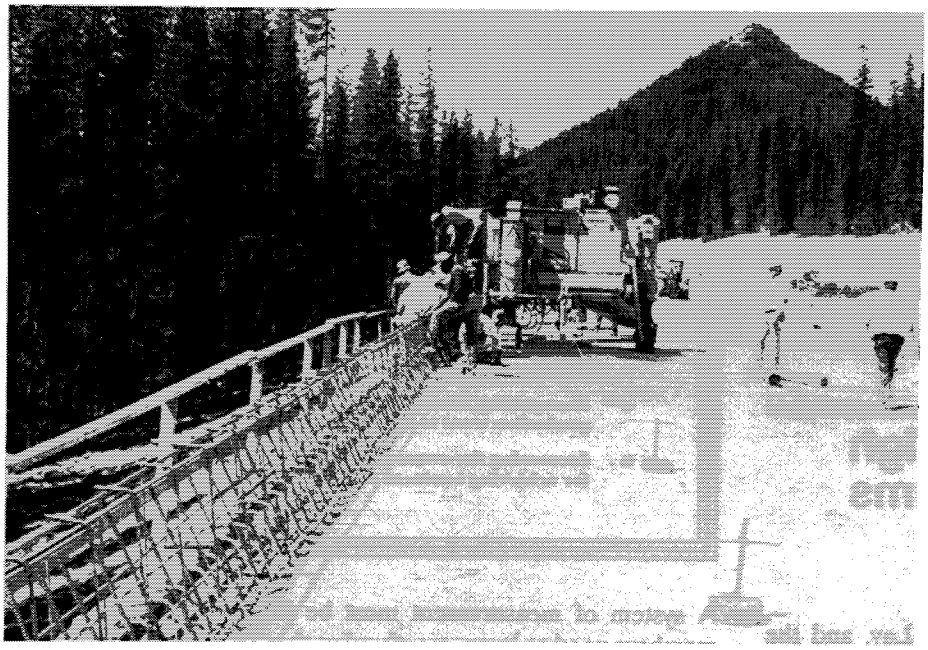
The conference provided many useful ideas for us to consider as we strive for high performance work teams in Federal Lands.

Western Federal Lands "FEQAT"

by Paul Rettinger

When I was asked to write an article on my involvement with the **Field Engineering Quality Action Team** (FEQAT) for the FLH Quality newsletter, I had to struggle with doubts.

My mind told me "You don't have time" or "you'll look foolish" and "it won't make a difference". These are the same messages that came up when considering whether to join in the TQM process. I am sure some of the people who will read this piece have gone through similar battles. All I can say is that for me the last few years have been exciting, hard, challenging, and worth it all.



- Construction Manuals.
- Sample field notes for the contractors.
- Winter training needs.
- Coordination with ADP on construction/field computer needs.
- Construction project signs (identify FHWA to the public).

The FEQAT was formed approximately a year after the commitment by FLH to implementing and supporting TQM within this agency. The FEQAT vision is "*an organization inspired with teamwork, pride and dedication*". Our mission is "*To identify field concerns, improve inter-branch communications, and implement solutions*".

So what does that mean without all the buzz words? We care about each other. We care about the work we do. If there is a problem, lets find out what it is and fix it. Let's talk to each other and work together.

The FEQAT is a group of employees that are elected by the construction field engineering pool on an annual basis. Participation is noncompulsory. There are six field representatives, who are spread from the GS-5 to GS-12 level. The Deputy Division Engineer (QAT sponsor), and the Construction Resource Manager are also on the team. The success of this team would never have been possible without the combined commitment by FLH management, the Division Engineer, and the "on the line" employees to make a difference. The team has addressed topics which, prior to TQM, would have been considered "Taboo" or politically incorrect.

Some of the issues which the FEQAT has worked on are:

- Method of determining Per Diem.
- Field morale.
- Electronic progress estimates for construction projects.
- Communications between Construction and Project Development.

FEQAT meetings are held an average of every 2 months, with longer breaks during the summer construction peak periods. The meetings typically last a full day, and are facilitated by a different team member each time. Another of the members takes notes of the meeting, develops the minutes of the meeting, and these minutes are distributed to the rest of the engineering pool. Each team member represents about nine engineering pool employees. The team members are encouraged to actively talk to the nine employees which they represent, and provide an active two-way communication channel between the team and the employees. The team regularly invites guests to the meetings from the Division Office. Past guests have been from ADP, Design, Administration, and Construction.

A survey was conducted in 1993 by the FEQAT to determine how the engineering pool employees felt we were doing. The response was overwhelmingly positive. The feeling within the team is that we are making a beneficial difference. Employees can see in their everyday lives the positive impacts that this team has generated, facilitated or even just brought to focus. Often a small "fix" to little problem can have enormous benefit.

Perhaps the clearest benefit of the FEQAT to this agency in general and the engineering pool in particular may be the clear lines of communication. Good communication is the essential key to success for this or any group.

When possible, the FEQAT in Western Federal Lands sends a member to the FPQAT (in Central Federal Lands) meetings to enhance inter-divisional communications. One outcome of this QAT "sharing" is that CFL has made available their video library (300+/- tapes) to WFL. Additionally, the solution to Per Diem

problems developed by Western's FEQAT were adopted by CFL.

An old saying goes like this: "There are three kinds of people,

those that make things happen,

those that watch things happen,

and those that wonder what happened".

Changes in how we do business, solve problems, and manage our lives will happen with or without our input. Its good to know that in FLH we have the opportunity to choose which one of the three types of people we want to be.

September EQC Meeting

Top priority agenda items at the September meeting of the FLH's Executive Quality Council included the proposed FLH Organization Study, National Performance Review Streamlining, Strategic Business Plan, Division Action Plans, and Self-managed Teams. Since the theme of this newsletter is teamwork, the following is excerpted from Jim Hall's handout to the EQC. It was put together by Scott Rustay. Please note that one of the results of the EQC's discussion of the subject was to call these, "Self Managed Teams" because the term "Self-Directed" suggests more than FLH is able to deliver under current laws and regulations. The EQC also decided to nominate at least one self-managed team in each field division and in headquarters. This is to be done at the November EQC meeting.

A self-directed team (or a self-managing team or high-involvement work group) can be defined as "a group of employees (anywhere from 5 to 15 on average) who are responsible for a whole product or process. The team plans the work and performs it, managing many of the things supervision or management used to do." (Source: *Skill Building for Self-directed Team Members*, by Ann and Bob Harper).

A self-directed team is a "functional group of employees (typically 6 to 10); sharing responsibility for a particular unit of production (including unit of service or information); cross-trained in technical skills; having authority to plan, implement, and control all work processes; having clearly defined responsibility for scheduling, quality, and costs. They may assume responsibilities for performance reviews, hiring, and training." (Source: *Career Track* course on implementing self-directed work teams).

"A team is a small number of people with complementary skills who are committed to a common purpose, performance goals, and approach for which they hold themselves mutually accountable." (Source: *The Wisdom of Teams*, by Katzenbach and Smith).

Eastern Federal Lands PAT (PMT) Status Report

by Jim Amenta

In the Spring issue of FLH Quality News I reported the facts related to the PAT process. [See the note on the PMT vs. PAT nomenclature in the article beginning on Page 2.] Well, here it is 6 months later and where do we stand now? I have some good news. The PAT process reviews are alive and thriving in all three divisions. Eastern has completed two more PAT's at this time and a third is due for completion in November. This initiative has been the focus of quality improvements at the division level over the past two years. The reason being the benefits reaped from the results.

Let me give you some more hard hitting facts. Remember I said that the first two PAT's used approximately 27 work weeks (1080 hours) each. The last PAT recently completed (ROW/Utilities) used approximately 17 work weeks (680 hours). This is a 37% reduction in resources from the initial PAT resource usage. The process was modified to fit into our cultural at Eastern. The reduction can also be attributed to the tremendous team effort put forth by the members working as a high powered team with a mission. The PAT process review has become a part of our continuous improvement effort to improve the quality.

Another fact is that we decided to look at some of the smaller work units and analyze their processes via a Mini PAT. This Mini PAT reduced the number of PAT sessions from five to three. The same format as the full scale PAT's were followed but were compressed into three meetings. The process wasn't as involved as the larger processes, such as Bridge. The Mini PAT selected was the Bridge Inspection Program (BIP). This PAT used only 7.7 work weeks of resources. This resulted in a 71% reduction in resource utilization versus the initial PAT's. Even though the scope of work was reduced, the same results were achieved.

Perspectives of the PAT (PMT) Processes

by Charmaine Farrar

These are my perspectives since becoming the Process Owner of the Surveys and Mapping Process in March of 1994.

Positives

The Surveys & Mapping PAT [See the note on PMT vs. PAT nomenclature in the article beginning on Page 2.] gave us an incentive to develop a measurement system; with the help of Brenda Povsha I have developed a Historic Survey Work Database that will include most of the information that we need to measure: $ per hour of survey, type of survey, type of terrain, number of regular hours, number of overtime hours, breakdown of total cost into personnel and equipment costs, and planned hours (from the PRMS). This information is collected for in-house, A&E, and our new GPS surveys.

The PAT process encouraged us to go ahead with our ideas for technological advancement in the area of surveying and mapping, specifically the GPS.

It encouraged us to create a better communication link with our customers. We will be holding a "SURVEYING 101" course in November to help everyone understand how to use the surveying data and how to supply the correct information to the Surveys Office so that they can in turn provide the customers with usefully data.

One of the most important positives of the PAT is that it has helped those involved understand our processes better. I learned a great deal about the P&C process when Butch Wlaschin participated on the P&C PAT.

Negatives

Many of the improvements identified in the Surveys and Mapping process relate to problems in an upstream process of our system -- namely, P&C. This should have been the first PAT. We did it third. The first process in the system must work before all those downstream can work.

Management does not seem to be taking the PAT process or results seriously. It appears that they are looking at it as another assignment from Headquarters.

I believe this is the best idea that has came out of TQM. Maybe more PATs and less Strategic Planning would be beneficial. The results from the PATs should be driving part of the Strategic plan

A lot of time is needed to maintain the measurement systems. We need about 25% more employee time to maintain the systems.

Recommended Reading

Libraries

Each Federal Lands Highway Division and Headquarters maintains a library of books, pamphlets, conference proceedings, video tapes, audio tapes, and other materials related to quality. See your coordinator for information.

Books

A New American TQM, Siba, Graham, and Walden, Productivity Press, 1993.

Handbook for Productivity Measurement and Improvement, William F. Christopher, ed., Carl G. Thor, ed., Productivy Press, 1993.

Horizontal Management - Beyond Total Customer Satisfaction, D. Keith Denton, Lexington Books, 1991.

Information Sources

Federal Quality Institute

The Federal Quality Institute, P.O. Box 99, Washington, DC 20044-0099 provides quality management services to all Federal Agencies. Subscribe to the Federal Quality News by FAX 202-376-3765.

Conferences

The Quality and Productivity Management Association, QPMA, hosts two major quality conferences each year. Contact your Quality Coordinator for dates and registration information. FLH is a Sponsor of QPMA. If you're not in FLH, call QPMA at (708)619-2909.

Miscellaneous

Brochure

TQM in FLH, an attractive brochure describes our Vision, Mission, Guiding Principles as well as our organization. Your FLH Division Office has copies.

Team Guidelines

The popular book, **Guidelines for Establishing and Operating Quality Action Teams** is available from the Division Quality Coordinator. Additional copies may be obtained by calling Headquarters, 366-9492.

Training Opportunities

Training in all aspects of TQM is available from many sources, internal and external. See your Quality Coordinator for ideas and to help you make arrangements.

Surveys

FLH surveys employees and customers to let them drive the organization. If you would like to receive information about how this is done, contact your Division Quality Coordinator or the Headquarters office at 1-202-366-9494.

Strategic Business Planning

Integrating quality and strategic business planning is HARD work. Federal Lands Highway has direct experience to share. Contact Mark Chatfield, HFL-1, 202-366-9492.

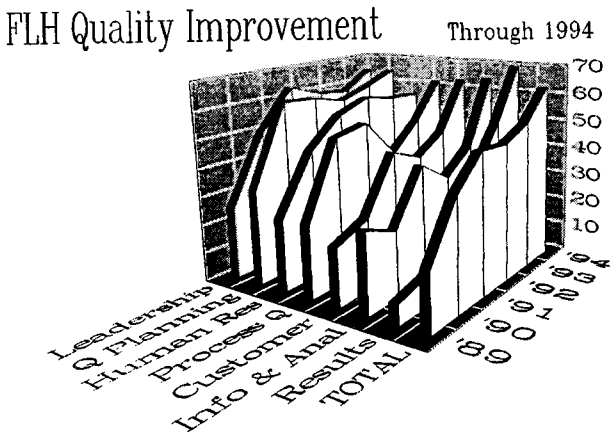
Volume VI Issue 1 Federal Lands Highway Winter 1995

FLH QUALITY NEWS

U.S. Department of Transportation
Federal Highway Administration

400 7th St., SW Washington, DC 20590 (202)366-9492

FLH Quality Improves for Sixth Year



The theme of this issue of the *FLH Quality News* is "Lessons Learned." The very first thing FLH's top officials learned in trying to implement change was to get outside their own organization in order to expand their thinking. The second thing they learned was to measure progress over a significant period of time so FLH can demonstrate whether changes are having an impact. In 1989, FLH began measuring its overall orientation to quality using an assessment developed by the Federal Quality Institute (FQI). According to the FQI, an agency that can achieve a rating between 600 and 800 on their 1,000 point quality assessment scale has "a well developed, systematic quality management approach with excellent functional integration that has been implemented in most parts of the organization." James Weathersbee, Executive Director for Corporate Operations of the Naval Air Systems Command which won the 1994 Presidential Award for Quality says they scored 600 on their internal assessment this past summer.

The FQI's December 1993 Self-Assessment Guide provided the methodology for this year's continuation of the FLH Quality Improvement Prototype (QIP) review. With consultant assistance from Dr. Al Gunneson of The Gunneson Group, the Quality Coordination Team conducted the November 1994 FLH review as a "peer" review with a couple of interesting wrinkles.

In past years, the Quality Coordination Team (QCT) got together, sometimes with a selected group of managers, to come up with the annual assessment. The QIP assessment has tracked the overall quality efforts in FLH since 1989. With new team members and a new guide from FQI, our primary coach (Tom Edick, Program Administrator) encouraged the team to get con-

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Publication No. FHWA-FLP 95-005

FLH QUALITY NEWS
Volume VI, Issue 1
Winter 1995
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The FLH QUALITY NEWS is an official publication of the Federal Lands Highway Office, Federal Highway Adinistration, U.S. Department of Transportation. It is published several times a year for educational purposes to promote quality principles among FLH's and other organizations' employees, managers, and supervisors.

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Mention of private firms in no way constitutes an endorsement or recommendation. Comments are encouraged. Communications should be sent by FHWA E-Mail (MCHATFIELD) or forwarded to: Editor, FLH QUALITY NEWS, Federal Lands Highway Office (HFL-1), Federal Highway Administration, 400 7th Street, SW, Washington, DC. 20590.

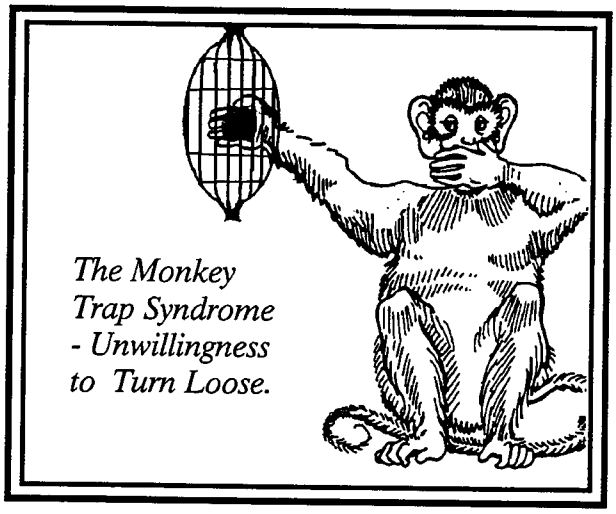
sultant help. In addition, the team decided to administer a questionnaire and then visit each FLH Division to review the responses and validate them by conducting selected interviews with employees, managers, and supervisors.

A formal report is being written by The Gunneson Group to be available in early 1995 in time to use the information to help direct the next FLH Strategic Business Plan. The bottom line is this -- FLH has improved every year for 6 years with a 1994 increase that represents a breakout from 3 years with little progress. The 1994 score, using the FQI's scoring system, is about 630 out of a total possible 1,000. Just averaging the scores without weighting one more than another, shows 62 percent -- up significantly from last year's 53 percent.

Turning Loose

By Mark M. Chatfield, PE

A friend recently told me about the monkey trap. Monkeys are one of the most intelligent animals in the world. My first thought was, "It must be terribly difficult or inhumane to trap a monkey." I could imagine a smaller version of a bear trap snapping shut on some poor monkey's leg causing excruciating pain and a slow



death. At least that was my assumption.

Then my friend explained.

Natives make a small cage about six inches high of strong green twigs tied together with vines. The twigs are spaced just far enough apart for a monkey to reach into the cage. The cage is then secured by a rope so it

cannot be taken away. Inside the cage is placed a small hard fruit about the size of a golf ball. Since it is the monkey's favorite food, it will reach through the bars of the cage to grasp it. That's all there is to it. The monkey is trapped.

You see, once it makes a fist around the fruit, the monkey refuses to turn loose even when the hunters approach for the capture. My friend calls this tendency to hang on no matter what, the Monkey Trap Syndrome (MTS).

You and I have had MTS at one time or another. You probably know people today at work who suffer from it. No matter how much evidence to the contrary, we just tend to hang on to ideas we have always had. Regardless of the damage it is causing to ourselves and others, sometimes we will not turn loose of our control. Eventually, we may even become angry, or bitter. In extreme cases we might become disgruntled and retire, often while still on the payroll.

Two questions come to mind: (1) What can be done to prevent MTS? and, (2) How can you live with someone else who has it?

Preventing MTS

First, let's not denigrate the idea of control, per se. Control is a valuable trait for each of us. People need to have self-control and to control their environs. Police must control violence. Every office must control its budget. The problem comes when I try to control something over which I do not have complete jurisdiction. In other words, if it doesn't belong to me alone, I should not be the sole controller.

The workplace is a complicated ecosystem. There are some things over which I have complete jurisdiction. Most of my efforts at work, however, are influenced or partially controlled by others. There are almost no unilateral decision opportunities if those influenced by the decision are to have a say. As we grow in teamwork, our ability to control everything is under constant pressure.

So, to prevent MTS, we need to:

- Be aware that the trap is there.
- Consider the issue of control every time we make a decision. Who has a stake in this? What customers need to be served? Am I trying to control this for my own short-term purpose or for the long-term good of the organization?

"The correct decision in terms of overall outcome may be one which is not completely 'right.'"

- Keep in mind that our personal best may be entirely "right," but unless everyone who is affected has a real opportunity to contribute to the decision, the correct decision in terms of overall outcome may be one which is not completely "right."

How to work with someone with a bad case of MTS

- Be assertive without being discourteous or unpleasant -- the victim needs to know his or her actions and words and decisions should show full respect and consideration of others, in spite of the anger and frustration that might be vented.
- Keep reminding the person that it is the long term that is important; consider the long-term impact of insisting on your own way versus that of the team.
- Be patient. Often, the most experienced, expert, and intelligent people get trapped by their own genius. Everyone on the team needs to work hard to suppress their own frustration. Try to keep calm. Show the controller that you will not get riled up (lose control of yourself) but you will persist in seeking widespread agreement.

The TEI Institute

Total Employee Involvement (TEI) Conference

By Jim Hall, Western Division Engineer

The TEI conference was excellent. I only wish that all of our Division Quality Council (DQC) could have attended -- it was that good. There were three concurrent sessions much of the time so I could not cover all of the sessions. Here are the impressions I got from the conference:

General Comments:

Quality is a mindset -- It is either everywhere or nowhere.

Employees usually know their organization can improve while management thinks things are okay.

Meaningful employee involvement has a more powerful effect on morale and productivity than employee empowerment.

The extent to which employees have been empowered can be determined by their ability to answer questions about the business.

We want to educate people, not train them. In training, people learn to repeat something they are shown. Educated people understand why they are doing something and can improvise or take an entirely new approach. These educated employees can find the breakthroughs that are necessary for an organization to excel.

360-degree performance appraisals are used by some organizations and are highly recommended. In this approach, ratings are prepared above, below, and at the peer level. Each rating is part of a final rating. This type of rating covers the three following areas:

- Business Objectives
- Values
- Career Development

About Vision, Mission and Values:

- Significant increases in productivity will occur when an entire organization aligns itself to a common vision, mission, values, and goals . This alignment is essential prior to empowerment of either teams or individuals.
- A vision statement should not be longer than 20 words. It should be simple, clear, and persuasive.
- Our values lock in the emotional issues for the organization.

About Leadership and Management:

- Leaders tell what and why. The teams decide how, when, and where.
- Coaching takes more time than managing.
- Leaders must get themselves in line with the business issues before asking the employees to take the this step. Also, the leadership team must monitor the business objective for continuous improvement if it expects its teams to monitor their accomplishments and make continuous improvements.
- Leaders should start doing things, not announcing things, or people will perceive new efforts as the flavor of the month.
- In a continuum where one end represents *authoritarian* style leadership and the other end represents a *thinking* style, leaders need to find a balance because neither end is appropriate. The *authoritarian* end is where top management has a business focus, supervisors set goals, disinterested employees focus on their own goals and perform the work in a robotic manner. The *thinking* end is where teams are voluntary, chaos reigns, and there is no business focus.
- It is the leader's job to terminate an employee - This should never be turned over to teams.
- Leaders should conduct round table meetings arranged as follows:

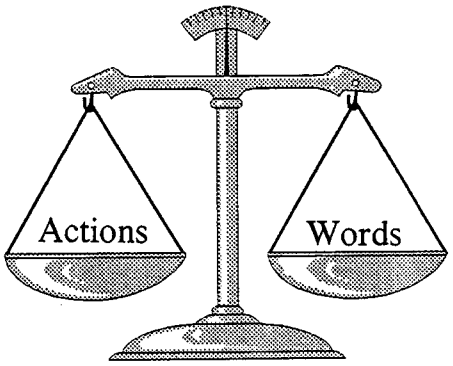
- Eight or fewer employees,
- Find out what is going right/wrong/needs to be changed,
- One hour or less,
- At least 3 per year for every manager,
- Personnel assigns employees to a supervisor on request, usually alphabetically.

Many managers are uncomfortable with the concept of permitting mistakes in the interest of learning. For some reason, these managers think they must "save the organization" each day. This justifies their actions including the disapproval of someone else's ideas which takes the energy out of the organization. This is a major reason for taking as many managers as possible out of the approval/supervisory role.

Freed up managers/supervisors should be given a value added goal such as: working with customers, helping establish business goals, coaching, facilitating, assisting on peak/high priority projects, establishing targets and policies, refining team guidelines, removing barriers, providing training, becoming technical experts, participating in the leadership team, and attending training. Anna Versteeg says, "You know something's real when actions equal words."

Ten questions top managers should be able to answer [modified for application in Federal Lands Highway]:

- What is the annual obligation target for this fiscal year?
- What is your top customer service issue?
- What are your top two quality defects going out, arriving, and in the hands of external customers right now -- by Pareto analysis -- the highest volume of repeatable quality defects?
- What are the next two new products or services being developed?
- Was your office above or below budget last month?
- What was your current production or service efficiency as of last month?



"You know something's real when actions equal words."

- What is your highest cost product or service to produce?
- Why is it your highest cost product or service, is it a materials, labor, or overhead issue?
- What is the definition of overhead?
- What is your average equipment up time as of the month before?

About top home-based teams (defined as the boss and his or her direct reports)

This is the team that leads the division or organization. It needs to monitor the progress in attaining business goals if it expects other teams to monitor the business goals in its area.

- Team members should meet frequently for periods of 30 to 60 minutes and work to get the entire organization monitoring their share of the business goals.
- The team should not monitor the goals of other teams -- only its own.
- Each manager on the top home-based team should be expected to meet annually with three groups of employees (not all of their own reports) to ask what the organization and management is doing that is not consistent with the organization's vision and values.
- The team should keep employees informed about business results.

About teams (Home-based, Self-directed, focus area, etc.):

The major benefit of teams is increased ownership and buy-in. We should not use the term *self-directed*. This type of team can be called many things but the preferred term is "**Mission-Based Team**" because it receives most of its direction from the vision, mission, values, and goals.

- Every team should have certain "non-negotiable" features, such as total budget, that are set by management. This should include a list of standard rules and mandatory rules.
- Regular team meetings are for information sharing and not for problem solving.
- All team members must know the vision, mission, values, and goals before they are empowered.
- Team members should be trained in business areas, team processes, and interpersonal skills.
- A good management information system, including good visual aids the entire organization can see and understand, is needed to keep self-managed teams in alignment with the organizations goals and progress.
- Teams should be run by process, not by personality. This means that they need team guidelines, decision processes, etc.
- Supervisors should stay in place during the transition period.
- Corrective action is the last thing to be turned over to teams.
- Management should implement teams for one reason and one reason only -- to improve the bottom line.
- Participation in teams should **not** be voluntary. While there may be times that voluntary teams are appropriate, for business goals, participation should be mandatory.
- In any organization, some employees will not participate in team activities. If the employee persistently refuses to help, he or she should be disciplined or terminated - not reassigned.
- Teams should focus on business goals using team processes and not on themselves or how to make themselves a happy team. They should focus on what will make the team more productive, not more enjoyable.

Some of the processes that need to be in place for successful mission-based self-directed teams:

- Performance evaluation (preferably "360-degree" evaluations where all those with whom an employee works -- above, below, and along side -- have a part in the evaluation),
- Definition of teams,
- Definition of team leaders,
- Business Objectives,
- Values,
- Team processes,
- Standard Operating Procedures,
- Communication Process -- Vertical and Horizontal,
- Ten-question alignment with business objectives,
- Consistency in non-negotiation processes,
- Pilot team process,
- Definition of "barrier" and barrier analysis and,
- Example-setting leadership.

Some of the non-negotiable items that all teams require:

- The organization's business objectives
- Vision, mission, goals
- Team procedures, processes, roles
- Meeting frequency

Teams should assume responsibility *in the following order:*

- Work schedules
- Interviews/hiring
- Reducing scrap/rework
- Efficiency
- Cost/unit
- Quality
- Performance reviews
- Customer complaints
- Customer surveys
- Customer letters
- Corrective actions (Team's employees)

About Organizations:

The difference between reforming the organization and transforming the organization is that reforming moves the boxes; transforming remakes the organization. Organizations have historically been based on a "paternalistic" model with all of the inherent advantages and disadvantages of this model.

All employees should be treated as peers. Some companies use terms like "colleague," "associate," "partners," and "members" to foster this philosophy. Vendors (Contractors) are an extension of the company and should be treated as such.

The organization of the future may have a pyramid that descends as follows:

- **Customers**
- **Workplace models/processes**
- **Management/union partnership councils***
- **Constructive relationship council**
- **Human resources board**

They write the ideal future vision and the steps to get there (Strategic Business Plan).

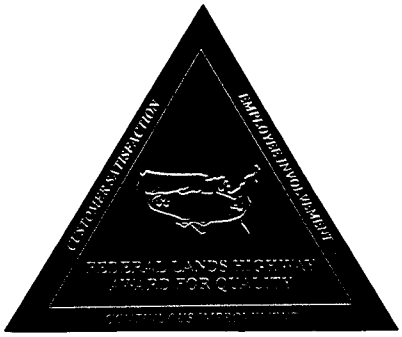
Organization changes should follow -- not lead -- the transition to self-managed teams. It is not necessary and maybe not even desirable to change the organization structure to go to "self-managed" teams. If organizational goals and team processes are in place, turn the team loose with a charge of managing itself within this context.

Some organizations realize that upward mobility is decreasing and they are moving from skill-based pay to developmental-based pay. Under this scenario, pay increases for each rotational assignment employees successfully complete.

More General Comments:

Between stimulus and response is choice. Nobody makes us do things!

The context with which we view the world is mostly unconscious. As such, we are usually not aware of the incorrect data we use to evaluate things around us. This is especially true when trying to remember what you've learned at a management course.



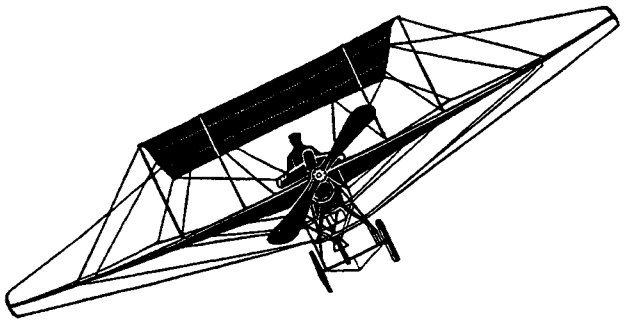
New Brochure on FLH Awards and Recognition

Employee involvement is an essential quality management principle. Since making the organization-wide commitment to quality, FLH has moved to promote this principle. One of the ways FLH has done this is through an enhanced and varied system of awards and recognition.

The new brochure *Awards and Recognition*, which features a photo of the striking new Federal Lands Highway Award for Quality, is available in each FLH Division. This particular award is the organization's own version of the agency Administrator's award. The Executive Quality Council presents it annually to individuals and teams that embody the highest principles of quality in FLH. They demonstrate exemplary achievements in such areas as customer satisfaction, process improvement, strategic planning, or culture change. Managers and supervisors initiate nominations that are screened by the Division Quality Councils. The DQC's forward the best nominations to the EQC for final selections. While the annual number of FLH Quality Awards is not fixed, it is limited.

Other awards and criteria described by the brochure are:

- Eastern Federal Lands Highway Division's Employee of the Month Award,
- Western Federal Lands Highway Division's Construction Quality Award Program,
- Peer Awards in all Divisions,
- Eastern Federal Lands Highway Division's Certificate of Excellence Award and,
- The Bridge to Improvement suggestion program awards.



Lessons Learned in Piloting GPRA

Allen Burden, FLH's Programs and Administration Division Chief and officials of three other Department of Transportation Government Performance and Results Act (GPRA) Pilot Projects, will be giving another briefing/training to share experiences in developing the FY 95 GPRA Performance Plans -- "Lessons Learned". People from other DOT modal administrations will be attending. It is being held January 11, 1995 in the DOT building. Similar briefings have been done in the past in smaller forums. Performance plans are consistent with the first two objectives of the FLH Plan for Implementing Total Quality Management. These are Continuous Improvement and Customer Satisfaction. Under the GPRA Pilot Project, FLH has worked with its primary customers to develop agency-wide performance measures (key indicators) of our work. These high level measures are to be tracked over time to demonstrate overall performance.

The lessons FLH has learned in coming up with a performance plan include:

- Define performance in terms the customers clearly want and understand.
- Keep down the number of performance measures; five to ten are enough.
- The top leaders should, themselves, develop the overall performance measures based on their personal understanding of all customer needs.
- Input from all customer bases should be solicited. This includes internal, external, upward and downward in the organizational hierarchy.
- Set most target performance measures to show conservative levels of improvement. One or two "stretch" targets are enough for one year.

The Last Word Tour: Managing for Quality

By Thomas Puto, Central Division

Dr. Joe Juran completed his final public appearance on "The Last Word" tour recently and I was fortunate to attend this highly informative session on lessons of a lifetime in Quality Management. At the young age of 89, Dr. Juran is retiring from the public spotlight to devote full time efforts to his family and begin writing his life memoirs.

During this all-day interactive session, Dr. Juran related his 70 years of Quality Management experience to the several hundred people attending the seminar. Key topics discussed by Dr. Juran included: Who is the Customer, Benchmarking, Empowerment and Self-directed Teams, Motivation for Quality and Prognosis for Quality in the United States. Sessions were followed by Question and Answer periods where Dr. Juran talked to the conference on an individual level. The son of a Hungarian immigrant, Dr. Juran began his career at Western Electric Company in 1924 and immediately began to make impacts on quality improvements. He advanced rapidly through the ranks of management and left Western Electric in 1942 to assist the U.S. Government during World War II. Dr. Juran provided detailed ideas to the U.S. Government on improved efficiency techniques in moving goods and supplies around the world.

After the war, Dr. Juran accepted invitations from the Japanese government to provide lectures and training on improving production rates at Japanese factories. These ideas were quickly implemented by the Japanese government and tremendous quality improvements were achieved in short periods. Dr. Juran warned American business in the mid-1960's that the Japanese were headed "for world quality leadership in quality control" and Dr. Juran began teaching some of these same ideas to American companies shortly thereafter.

Dr. Juran has been a world leader in quality management and is the author of many books, videocassettes and publications. He has devoted his lifetime to improving quality by providing simple methods and principles in managing quality. His teaching style is witty, highly enthusiastic and very comprehensive. He will be missed by many people around the world.

The Last Word Tour was the concluding event in the 1994 conference titled "Rediscovering Quality: The Next Steps." The seminar was sponsored by the Juran Institute and attended by representatives from 23 countries. Key sessions during the seminar included: "The Relentless Pursuit of Perfection " presented by the President of Toyota Motor Company, U.S.A. Division, "Malcolm Baldrige Case-Study winners" presented by Eastman-Kodak and Ames Rubber Company, "Reinventing Government: Its Happening" presented by the Department of Energy, Customs Department and U.S. Army Materials Command and "The Quality Challenge in the Federal Government" presented by the Internal Revenue Service, Department of Education and U.S. Army Tank division.

The Malcolm Baldrige National Quality Award case-study winners session was helpful, as recent winners of this prestigious honor discussed how their companies journeyed along the quality management road. Success and failures were numerous along the 15-year period of quality improvements at each firm. Many lessons were learned and both companies discussed some identical lessons discovered:

- Customers are the top priority,
- Quality is a major investment and requires teamwork,
- Top leadership is absolutely essential and,
- The more you know, the more there is to know.

The Facilitator and Team Leader as Partners

By Lois Hart, Leadership Dynamics Newsletter, June 1994, 10951 Isabelle Rd., Lafayette, CO 80026. Reprinted with permission.

In the initial years, I trained facilitators to conduct meetings alone. However, many organizations are now forming partnerships between the facilitator and a manager who serves as the team leader.

Have you ever wondered how these organizations successfully create partnerships and what the responsibilities of each are?

The team leader is typically a mid-level manager or supervisor who works directly for a top management sponsor or champion. The team leader may also be the one who suggests the need to form an action team.

As in a football game, the team leader serves as the captain. He or she has the content knowledge necessary to help clarify issues and find realistic solutions.

Ideally, this person understands how to use facilitation skills and problem solving methods appropriately.

The team leader needs good communication and leadership skills and must want to work in a partnership with a facilitator.

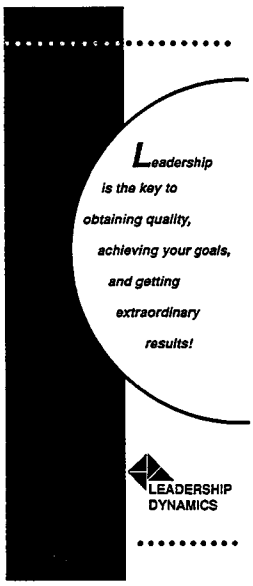
The team leader first works with the sponsor or champion of the proposed team to:

- Clarify the problem and identify the goals.
- Create a list of tasks.
- Select team members.
- Decide on a team facilitator.
- Periodically discuss the team's progress, direction, and problems.
- Obtain input concerning major activities, problem analysis, solutions, proposals, and pilot projects.

Then the team leader:

- Calls the initial meeting.
- Arranges meeting times and locations.
- Participates with the team members in establishing ground rules.
- Keeps a team schedule and progress chart.
- Motivates the team to take responsibility for administrative tasks.
- Sets up job responsibilities and keeps them focused on accomplishing tasks.
- Models all behaviors desired in members.
- Guides the team through the problem solving processes.
- Participates as a voting member.

The facilitator's primary role is to observe and deal with the process during meetings. The facilitator is not an active team member and does not vote. As in a football game, he or she serves as a referee.



The facilitator is a partner with the team leader. He or she must also coach the leader, making suggestions and giving feedback.

The facilitator generally has formal facilitator training and understands how to use facilitation, team development and problem solving methods. He or she might need to educate the team leader and members on procedures and methods.

The facilitator needs to have excellent communication, coaching, and human relations skills.

The facilitator will:

- Help the team establish its ground rules.
- Instruct them in team dynamics and the problem solving methods as needed.
- Ensure that decisions are made by the total team.
- Develop an agreement with the team leader regarding their individual and joint responsibilities.
- Identify problematic behaviors and use the proper intervention to re-direct energies.
- Raise undisclosed issues or hidden conflicts.
- Help the team evaluate its progress and relationships.
- Serve as recorder and prepare the reports until group members are trained.
- Summarize meeting discussions and decisions.

As partners, the team leader and facilitator are the champions of their organization's TQM, process improvement or change initiatives. Together they will:

- Plan and finalize the meeting agendas.
- Help establish a climate of trust, openness, and cooperation among all team members.
- Focus the team's energy on the common goal and tasks.
- Encourage all team members to participate fully in discussions and share relevant information.
- Help members to identify and solve problems.
- Plan a celebration when the team has reached its goals!

Editor's Note: After receiving the following note from Lois, how could I do anything but reprint her article?

Mark -- I just re-read your last two FLH Quality News issues. They are excellent! You pack a great deal of information into each issue. Congratulations! Lois

Lessons Learned by a Project Scheduler

By Carl Triplett, EFL

Planning and Scheduling (P&S) systems are simple and complex. The computer software program that supports a P&S system simply calculates dates for a group of activities (a project), but the system behind its use is complex. This tidbit of information is what I, as the Project Scheduler for the Eastern Federal Lands Highway Division (EFLHD), have recently come to understand after many discussions with and training by our consultant (Project Management Technologies, Inc., Littleton, Colorado). The consultant was hired to improve the EFLHD's P&S system, to reduce our 4th Quarter Awards, and to better control our projects.

The EFLHD's P&S system schedules the design activities (usually 50 activities per project) and the resources (approximately 100 employees) for the 30 or so projects designed each year. At any given time, there is at least three-year program of projects in the P&S system. This program equates to about 120 projects or to approximately 6,000 activities for the 100 employees whose work is scheduled by the P&S system (not everyone is represented in the system). Calculating the activities' start and finish dates and keeping track of each of the resource's use is a simple task for the computer, but deciding when to start work on a project and deciding how the 100 resources are assigned to the 6,000 activities (especially when two or more activities simultaneously need this resource) is a complex task.

In the past, the complex task of deciding when to start a project was done by the computer software. The software started all of the projects at the same time -- that time being now. Of course, all of the projects could not be worked on at the same time, much less worked on right now! At this time, the resources came into play.

Continued on p. 12

Long term commitment. Successfully implementing TQM does not happen overnight. We can always improve. It is a never-ending process.

Everyone is responsible and can contribute. Quality is not just one person or management's job.

Satisfaction of the customers' and employees' needs should be the driving force.

Should be practiced, not just talked about. Do it, don't just talk about what should be done.

Our greatest resource is people. Our employees are the keys to what we do, regardless of who they are, or where they fit into the organization.

Not a magical, mysterious new tool that will fix everything; TQM is a process that everyone needs to understand so that they can contribute.

Statistics and measurements are needed. We have to measure in some form to know if we are getting better (or worse).

Listen. We will never know what the customer really wants or needs unless we carefully listen.

Employee involvement. We cannot succeed by telling people what to do. Employees are closest to the work. They have good ideas that should be tried.

Accountability. People rise to the occasion when they are given true responsibility and accountability.

Respect and trust between management and employees must exist. If we have one without the other we will not be truly successful.

Need to educate everyone. Technical, process, and people skills are absolutely necessary to continuously improve.

Ensure true employee empowerment. Not just in words or on paper, but in actions and practice.

Decision making process should include everyone affected by the consequences of the decisions. Give people the chance to have input into changes that affect them.

The acrostic was created by Phyllis Chun, Western Division

> *"Ensure that decisions are made by the total team."*

The complex task of assigning resources was handled by assigning a priority number to each project. The priority number allowed for the Award Date (completion) of the project, the size of the project, the life of funding, and other factors that affect resource assignment decisions. The computer used this priority number to easily decide to which activity the resource was assigned when a simultaneous need arose. While assigning the resources to the activity, the software restricted the use of the resource to only eight hours per day. It is this availability of resources that dictated when a project could begin. The start and finish of activities were delayed until the resource became available. This method makes sense except that all of the work is compacted into the first half of the three-year program. In addition, the start of some work could have been postponed, and it would have still met the required completion date (Award Date) and allowed time for short-term projects that may need to be added to the program at any moment.

What I have learned is that the resource assignment decisions are more complex than what a priority number can represent. Often, a manager of an activity disagrees with the decision that the computer has made in assigning resources due to many reasons. In the situation of scheduling field personnel and equipment, their geographical location may have to dictate on which project activity they work. For example, although a higher priority project located in Minnesota requires the field personnel and equipment, a lower priority project in Mississippi is within their immediate vicinity. Working on the Minnesota project rather than the nearby Mississippi project would require an inordinate amount of travel time and may actually take more time to complete both projects' activities. These decisions are too complex for a priority number to represent.

The new method of scheduling projects will be simpler, but the resource assignment will involve much more work because the resource assignment decisions will be made by a person or a group of persons rather than the computer. The start of a project will be determined by when it needs to be finished -- a logical idea. The resource assignments will be determined by responding to resources who have been scheduled for too much work (overutilized). If a resource is overutilized, the activities requesting this resource must be rearranged, more resources must be added, or the work must be given to an outside vendor. Whatever solution is chosen, the group of people involved in the affected project(s) and the resource or the manager of the resource will decide the best solution to the problem. In effect, the employees control the schedules, not the computer. This method will keep everyone involved and informed while solving the project's schedule problems.

Value-Added Oversight

By Mark M. Chatfield, P.E.

Cheryl Martin in the Minnesota Division of Federal Highways called the other day. She was working on methods for determining the value added by Federal-Aid Divisions. After responding, I dug out some additional material and this article was the result.

The connection between oversight activities and quality is most evident in the concept of the cost of poor quality. In order to show a meaningful measure, the "cost" idea drives an estimate in dollars and other terms. This estimate is, simply put, those costs which would disappear if our products and processes were perfect. They may be categorized:

- Failure costs,
- Appraisal costs, and
- Prevention costs.

The *cost of poor quality* (a Juran-coined term, p. 119, *Juran on Quality by Design*) has oversight implications in all three areas but particularly in that of "failure." The "1 - 10 - 100 rule" applies here:

For every one dollar spent to prevent a problem, ten dollars would be required if the situation was not prevented entirely but was recognized and corrected just before it failed. A hundred or more dollars would be required if the failure actually happened. A recent example is the billion-dollar Pentium computer chip failure. It would have been very inexpensive to correct if it had been caught in the design phase. Even if it had not been caught in design, if the goof had been discovered in manufacture, it would have been relatively inexpensive to trash or maybe design around the glitch. Since it went through manufacture, assembly, and delivery, however, the cost to correct was mammoth.

The cost is almost immeasurable because it affected Intel's reputation and all of those other companies which used the defective product.

Oversight failure costs

These costs may be subcatagorized internal and external failures and include the expenses associated with lost time due to oversight-related problems: unscheduled corrective work -- "fire-fighting," litigation, claim settlements, handling complaints, political fallout (program or project funding jeopardized), absenteeism, recruiting and training replacements, corrective work, and delays in other work. These usually involve costs within the organization (internal failure costs) as well as beyond (external failure costs). External costs include ramifications of the failure which reverberate up and down the line. For instance, a one-year delay in obligating funds for a project may mean traffic delays, crashes, fatalities, and maintenance and attendant costs are all extended. Reducing failure costs will result in increasing appraisal and prevention costs -- that's okay because we're avoiding failure.

Oversight appraisal costs

These costs are associated with checking how oversight is done. Inspection time, quality assurance, enforcement, and administrative costs would be included. Other elements of this are efforts to understand systems, processes, and outcome measures. Survey and management systems costs are also part of this. Reducing lengthy reviews and eliminating insignificant enforcement activities would be ways to lower these costs.

Oversight "prevention" costs

This would be expenses for developing oversight processes, assuring everyone understands his or her responsibilities and authority, documenting and measuring efforts. Quality control would be part of prevention costs. Analyzing and improving complicated processes and having an effective training program will reduce the cost of prevention. However, both appraisal and prevention costs are appropriate in order to avoid failure.

In order to know oversight operations are under control, offices should estimate their current costs of appraisal, prevention, and failure from the customers' perspective. The objective here is to reduce the overall cost of quality by taking actions to increase appraisal and prevention work (and cost as necessary) in order to minimize failure costs. Although some of these costs will be estimates rather than hard measured figures, the estimates will show the problem and the trend and should be sufficient for management to make improvement action decisions.

Total Cost of Quality:

The cost of quality increases geometrically as the development goes from initial to completed stages because the cost to correct become so great. A project with an estimated cost (X) of will escalate to many times its original cost if problems are not caught in time.

Cost

1X	10X	100X
Initial Stages	Mid-way	Final
Planning	Re-dos	Litigation
Quality Assurance	Value Engineering	Contract Claim
Design Manual	Field Design change	Abandoned Project
Construction Manual	Const. change order	Collapsed Bridge
User Guide	Award slippage	Firing an Employee
Partnering	Re-advertise	Project shut down
QAT	Employee complaint	On-the-job fatality
Training	Replacing failed equipment	
Improved Communication	Rejecting materials on site	
Continuous Improvement	Correcting safety violation	

Keep in mind that value does not mean just money. If customers say the key to success is time, then cycle time reduction is value-added. If customers need accuracy, then reduction in error levels is value-added. Considerations of the big picture are important such as the perspective of national significance and agency-wide risk management.

Steps to Take

If an office were to undertake an effort to show their oversight operations are value-added, the following steps would be appropriate:

- Assign a work team and task them to identify a way that the office can have an ongoing awareness of the value it adds to the products and services being delivered. The team should be charged to complete the effort in a relatively short period of time.
- The team should use a problem solving process and document the following in simple, everyday terms:
  - What does the public receive from what the office and its partners do?
  - What do partners and political entities receive from the products and services that is particularly meaningful to them?

- In terms of money, time, accuracy, and social benefit; what is the overall value of the products and services we help provide? Estimates are acceptable if hard data is not readily available; the effort here is one of overall management not audit.
- In the same terms, what part of that value does the office provide? This is the Value-Added measure.
- Given the value of the office, identify all the possible categories of cost that result from failure to meet requirements. For instance:
  - Employee Awareness
  - Rework due to lack of knowledge of the current law, applicable regulations, official procedures, and policies.
  - Obligations deferred or lost due to lack of timely information on the status of program funding.
  - Errors made due to inadequate information on the status of program activity.
  - Responsiveness.
  - Delays due to absence of a key manager.
  - Funds lost due to poor communications.
  - Rework and delays due to cumbersome procedures.
- General
  - Rework to correct consequential errors due to waste, fraud, and abuse.
  - Rework for non-consequential errors such as operating on the edge of ethical behavior.
  - Data entry errors.
  - Executive Management
  - Lengthy planning processes.
  - Cost of restructuring/reorganizing.
  - Redoing budget proposals.
  - Inappropriate management strategies.
- External Costs
  - Field failures.
  - Complaints from travellers.
  - Loss of design and construction oversight to private firms due to customers losing confidence in our performance.
  - Field corrections of design errors.
  - Liability costs.
  - Insurance premiums.
  - Litigation costs.
  - Penalties due to lawsuits.
  - Lost program authorizations due to inadequate justification.
  - Mitigation of environmental damages.

- Find ways to measure or estimate the costs identified in "e" in terms of money, time, accuracy, and social cost. Roll-up the measures periodically, at least annually to be able to answer two key questions:
  - What is the ratio of the cost of the office operations to the value added? (This should go down as office operations become more efficient.) and
  - What is the total cost of assuring quality? (This should go down as failure costs decrease.)

Computer-aided design and drafting

Team Case Study - IHDS Team

by Bob Lale, Central Division

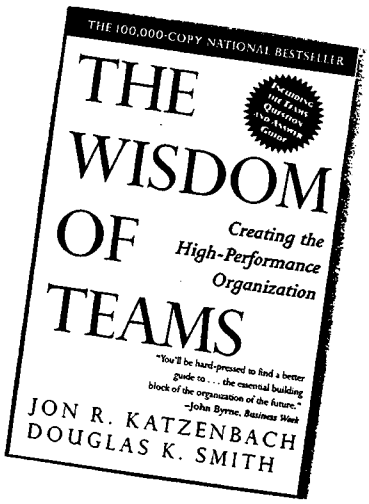
Over the past few months I have had the opportunity to work with the Interactive Highway Design Software (IHDS) implementation team both in the role of a facilitator and that of a team member.

When this team first got started, I was a member serving in the role as the pseudo CADD Coordinator for Central. I decided that after a while I was not the best choice for the team because of my limited hands-on capability, many collateral duties, and the availability of someone much more qualified. Well anyway, enough about that.

This team was comprised of smart, technically competent individuals. When we got started there were some growing pains since it was not real clear what the purpose of the team was and why we were here. Most of the members had not worked in the team environment before and were uncomfortable. For that matter most of the members had never met each other before. After the first somewhat stormy meeting, I was no longer on the team. I must admit that I had some doubts that the team would succeed in their purpose or stay together.

When I went back to facilitate this group recently at a meeting with the main goal of developing a measurement system to track the effectiveness of the new IHDS software, I came across a much higher performing team than the one that I had left. What had happened in my absence that would have made such a difference? I threw out the conclusion that I was the reason that it was not performing well in the first place as being preposterous. With my curiosity brimming I started to look at the book "The Wisdom of Teams". In there I found what I believe to be the answer as to why they are performing at a higher level.

In this book it talks about the factors necessary for a successful team. One of these factors is a high degree of commitment that the team members must have toward each other and their charge. This team exhibits both of these types of commitment. They feel that they have been charged with something very important and feel a responsibility to succeed.



Another factor for a successful team is enthusiasm and energy level. This team also exhibits this trait. Measurement is not an easy concept to grasp, especially when it is a relatively new concept to our organization, and the implementation of a new design package produces mostly intangible benefits. But in spite of this difficult challenge, the team took an aggressive, focused attack, and stayed with it devoting a good amount of their already taxed resources.

One last factor for success. A team leader that is open to new ideas, and who fights to clear obstacles that would interfere with the group is necessary. This team is fortunate enough to have such an individual and this really reflects on the way the team functions and performs.

In conclusion, I believe that the natural characteristics that this team was fortunate enough to have by chance, enabled it to persevere through the tough times in the beginning and continue working toward their goal as a high performing team. We need to ensure that each team created has these characteristics so that they will be equipped for success.

Excellence In Highway Design - 1994 Biennial Awards

By Al Logie, Headquarters

On November 14, 1994, at the Annual Meeting of the American Association of State Highway and Transportation Officials, Administrator Slater announced the winners of the 1994 Biennial Excellence in Highway Design Awards.

There were over 250 entries in the ten categories, all of which were excellent and deserved an award. In Category 9, "Highway Improvements on Federal, State, or Other Publicly Owned Lands" there were 18 entry nominations. Once again, Federal Lands Highway has risen to the top by being awarded the Award of Excellence Award and two Awards of Merit in this category. Our Eastern Division and the National Park Service Bridge over Forehand Hollow, Natchez Trace Parkway won the Award of Excellence with the Central Division and the National Park Service garnering Awards of Merit for the Sentinel Bridge, Yosemite National park and the Mt. Carmel Highway, Zion National Park.

The Federal Lands Highway's commitment to excellence is evidenced in the selection of the winning projects by a panel of expert judges, made up of representatives from academia and the private sector. This

honor further underlines the excellent quality that goes into the planning, design, and construction of our Federal Lands projects and the "Commitment to Excellence" of the Federal Lands family. We must all be proud of our accomplishment.

NIKE Capital Challenge - East Potomac Park, Washington, D.C. Left to Right -- David Lippold (MARAD), Shiela Griggs (FRA), Al Logie (FHWA, HFL-1), Secretary Peña, and his wife Ellen.

Al Logie Runs With The Best

Washington, D.C.

On a beautiful crisp morning on September 21, 1994, Al Logie as a member of TEAM PEÑA competed in the Nike Capital Challenge three-mile race. There were four categories in this competition, the U.S. Senate, the U.S. House of Representatives, the Executive Branch, and the Print Media.

Team Peña finished 14th out of 29 in the Executive Branch with Secretary Peña finishing first as Independent Agency Head. Al says, "It was a great opportunity to compete with some of those folks on the hill who so influence our work and lives and to find out that they are just as vulnerable to a misjudgment, lactic acid buildup, and the subsequent loss of control. All in all, it was a wonderful experience to fly the FHWA/FLH colors for DOT."

Recommended Reading

Libraries

Each Federal Lands Highway Division and Headquarters maintains a library of books, pamphlets, conference proceedings, video tapes, audio tapes, and other materials related to quality. See your coordinator for information.

Books

A New American TQM, Siba, Graham, and Walden, Productivity Press, 1993.

Handbook for Productivity Measurement and Improvement, William F. Christopher, ed., Carl G. Thor, ed., Productivy Press, 1993.

Horizontal Management - Beyond Total Customer Satisfaction, D. Keith Denton, Lexington Books, 1991.

Information Sources

Federal Quality Institute

The Federal Quality Institute, P.O. Box 99, Washington, DC 20044-0099 provides quality management services to all Federal Agencies. Subscribe to the Federal Quality News by FAX 202-376-3765.

Conferences

The Quality and Productivity Management Association, QPMA, hosts two major quality conferences each year. Contact your Quality Coordinator for dates and registration information. FLH is a Sponsor of QPMA. If you're not in FLH, call QPMA at (708)619-2909.

Miscellaneous

Brochure

TQM in FLH, an attractive brochure describes our Vision, Mission, Guiding Principles as well as our organization. Your FLH Division Office has copies.

Team Guidelines

The popular book, **Federal Lands Highway Team Manual** is available from the Division Quality Coordinator. Additional copies may be obtained by calling Headquarters, 366-9492.

Training Opportunities

Training in all aspects of TQM is available from many sources, internal and external. See your Quality Coordinator for ideas and to help you make arrangements.

Performance Management

FLH measures overall performance, surveys employees and obtains feedback from customers to let them drive the organization. If you would like to receive information about how this is done, contact your Division Quality Coordinator or the Headquarters office at 1-202-366-9494.

Strategic Business Planning

Integrating quality and strategic business planning is HARD work. Federal Lands Highway has direct experience to share. Contact Mark Chatfield, HFL-1, 202-366-9492.

Volume VI Issue 2 Federal Lands Highway Spring 1995

FLH QUALITY NEWS

U.S. Department of Transportation
Federal Highway Administration

400 7th St., SW Washington, DC 20590 (202)366-9492

Federal Agencies Help Plan FLH's Future

The participants in the March 1995 Federal Lands Highway Strategic Business Planning meeting rated their satisfaction with the session at higher than 80 percent. One of the most significant successes of the 2-1/2-day meeting was the active participation of key partner Federal agency representatives. In a fascinating panel discussion, the National Park Service, the U.S. Forest Service, the Bureau of Indian Affairs, and the Bureau of Land Management presented their perspectives of the future of Federal Lands Highway. Participants split into four work groups and used feedback from a number of sources to develop 5-year objectives, strategies, actions, and timetables for each of the four goals of the FLH Strategic Business Plan. These products are being refined for later publication as the new 5-year plan which will carry the organization to the next millennium.

Participants in March 1995 FLH Strategic Business Planning Meeting, Colorado Springs, Colorado. Photo by Vivian Hanna, Eastern Division

An abridged summary of the feedback information used by participants to focus strategies and actions for improvement efforts follows.

Federal Agency panel discussion

Background: This is the first year of direct participation by Federal Land management agency leaders in the FLH Strategic Business Plan. Each panel representative used about 15 minutes to provide input to the participants. Some of the partner agency leaders also

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Publication No. FHWA-FLP 95-011

FLH QUALITY NEWS
Volume VI, Issue 2
Spring 1995
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The FLH QUALITY NEWS is an official publication of the Federal Lands Highway Office, Federal Highway Adinistration, U.S. Department of Transportation. It is published several times a year for educational purposes to promote quality principles among FLH's and other organizations' employees, managers, and supervisors.

Other topics may include information about programs, policies, projects, and administration. Contents of this publication may be used without permission. However, courtesy credit is appreciated.

Mention of private firms in no way constitutes an endorsement or recommendation. Comments are encouraged. Communications should be sent by FHWA E-Mail (MCHATFIELD) or forwarded to: Editor, FLH QUALITY NEWS, Federal Lands Highway Office (HFL-1), Federal Highway Administration, 400 7th Street, SW, Washington, DC. 20590.

participated in the break-out sessions which developed strategies and actions for the plan itself.

- **Provide more help in Transportation Planning Efforts.**
- **Consider that transportation studies are the key to future development of Parks.**
- **Perform service-wide value analysis and assist customers in effective resource allocation.**
- **Control scope-creep**
- **Develop port, terminal, and Intermodal connections and economic analysis tools for low-volume roads.**
- **Consider maintenance impacts on owner agency.**
- **Define appropriate levels of service.**
- **Spend more time up-front to develop better solutions.**
- **Provide earlier involvement in planning**
- **Consider alternate transportation - not just highways.**
- **Seek active role with the Park Service on developing Park Road Program Multi-year Plan.**
- **Identify long-range transportation system needs when developing FH projects.**
- **Reach a common understanding on expected goals and results.**
- **Assist in strategic planning for BIA.**
- **Partner with post-streamlined field organization.**
- **Maintain balance between design in the office and on-the-ground construction.**
- **Re-evaluate roles in project development process.**
- **Design for end-user (not managing agency).**
- **Help educate client agencies on ERFO Program.**
- **Help balance short-term impacts with long-term needs. (Don't compromise true long-term needs for short-term resource impacts).**
- **Maintain critical skill levels (technical, communication, and corporate memory).**
- **Evaluate FLH program capability to be all things to all clients in the context of reduced resources.**

Quality Improvement Peer (QIP) Assessment

Background: This is the sixth year for the QIP Assessment. This year's assessment featured a questionnaire, interviews, and a site visit by the Quality Coordination Team and a consultant (Dr. Al Gunneson of the Gunneson Group International).

- **Overall score 63% -- this was up from the previous year's 53%.**
- **Low score 51% -- in the Human Resources category.**
- **High score 65% -- in the Results category.**
- **Most improved -- Information & Analysis**
- **Target for work -- Human resources.**
- **Neet to improve strategic plannin and Coaching.**

- **Streamline the Strategic Business Planning Process.**
- Fewer planning actions
- Monitor
- Accountability

Cultural Survey

Background: This is the 6th year of the FLH Cultural Survey. The survey was administered by Interaction Research Inc. The overall score was essentially the same as last year, and results were first presented at listening sessions, then through a March memo transmitting the final report to all Divisions.

- **Return rate 56.9%.**
- **Overall score 62.9%.**
- **Lowest scoring category: Planning Ahead, 48.0%.**
- **Highest scoring category: Values and Ethics, 80.2%.**
- **Most improved category: Employees are concerned with the need for quality.**
- **Targets for work:**
- Workload distribution.
- Planning Ahead
- Getting Needed Information
- Workload Balance
- Quality Improvement Initiatives
- Right Number of People to Accomplish the Mission
- Rewards/Recognition (Discipline Poor Performance, Promotion When Deserved)

Listening Sessions

Background: This is the third year that FLH has held listening sessions. Most employees attended. This year's sessions were in a Town Meeting format. The primary concerns voiced by employees related to workload and rewards and recognition.

- **Teamwork, self-managed teams, empowerment, decision making**
- **Understand, use, share, and be accountable to the Strategic Business Plan**
- **Improved planning and scheduling, priorities and future programs**
- **Partnering with suppliers and customers**
- **Improve Understanding of Customer Needs**
- **Incentives/Rewards/Recognition**
- **Technical Expertise in an A/E Management Environment**
- **A/E Process**
- **Follow-Through on Quality Initiatives**
- **Manage stress levels**
- **HQ/Field Roles**

The Virtual Organization

Not another buzz word! The "Virtual" organization? ... Give me a break!

I had heard of virtual reality, virtual space meetings, and virtuous people, but when I heard of the virtual organization, I was surprised. Then I learned what it was and I realized that like "TQM," sometimes the name is more foreboding than the reality.

A "virtual" organization is one where different organizations collaborate to accomplish a function or task. There are three forms of virtual organizations. The first is the temporary version, which is a network of businesses that come together for a limited time period to quickly address a specific opportunity. FLH does this on certain technology applications. The second type is where an organization focuses on its core competencies and permanently outsources everything else that it can to partners who are the experts in what they do. The National Park Service and the U. S. Forest Service to this with much of their road network by outsourcing the engineering to FLH. FLH, in turn, does some of this with Architect/Engineer and other special contracts. The third type is the "virtual office," where employees work at home, at a customer's location, and wherever they can connect electronically, FLH is moving in this direction with wide area networks, information sharing among agencies, along with flexible work schedules and locations.

In a March 7, 1995 letter to Melissa Spillenkothen, U.S. DOT Assistant Secretary for Administration, responding to the DOT restructuring initiatives, Charles Clapper, Jr., Assistant Director, Design and Construction, Denver Service Center Operations, National Park Service, acknowledged the concepts of the virtual organization relationship. Mr. Clapper said in his letter:

"The excellent working relationship between the National Park Service and the Federal Highway Administration (FHWA) has been executed through a series of inter-agency agreements which extend back to the very early days of both agencies. FHWA and its predecessor, the Bureau of Public Roads, have played a major role in design and construction of the National Park Service parkways and park road systems. We would like to continue this supurb relationship into the future"

"We would hope that the Federal Lands Highway Division will be part of your new organizational structure and that it will be staffed at a level needed to perform the required technical assistance for the Park Roads and Parkways program. The many significant accomplishemnts of theFederal Lands Division under the Intermodal Surface Transportation Efficiency Act of 1991 for the National Park Service are greatly appreciated. However, the current level of funding has not been adequate to prevent continued deterioration of our park roads and parkways. The backlog of need has substantially increased during the past decade. We would appreciate any help you could provide us in the obtaining an adequate funding level and increased staffing for Federal Lands Highway Division upon whom we depend for engineering services on park roads."

Signed, Charles P. Clapper, Jr.

Customer Satisfaction Surveys

Background: This is the second year for Federal Agency customer satisfaction surveys for completed design and construction projects. Futron Corporation analyzed the results. Overall, results were slightly lower than last year but it is difficult to make broad conclusions since there is only one year to compare to and all projects are different from the prior year's projects.

Project response rate: 94%

Questionnaire response rate: 51%

Project Development

- **Highest score 97%: Agencies would use FLH again.**
- **Second Highest score 95%: Design is consistent with requirements.**
- **Lowest score 50%: Meeting customer expectations.**
- **Targets for work: Meeting quality expectations; and "Departments" - Planning, Design, Environment, Geotech, Hydraulics.**
- **Customer comments: Lack of understanding of the process and communication**

Construction

- **Highest score 97%: Getting answers from FLH.**
- **Lowest score 50%: Public reaction**
- **Overall Quality score: 82%**
- **Targets for work: Exploring alternative resolutions to problems; and traveler and public response**
- **Customer comments: Need more inspectors on the jobs. Need to look at the change process.**

The goal for the Strategic Business Planning meeting was to achieve a plan that was 90 percent complete by the end of the meeting. Although one group claimed 105 percent, the general concensus amounted to about 85 percent -- close enough! Those who were working on the goals are following up with resource estimates and further refinements. By May a draft FLH Strategic Business Plan will be published and Division Action Plans will begin. Supervisors and team leaders throughout FLH will be providing information to everyone regarding how the Strategic Business Plan affects you and what it means to the whole organization.

The Federal agency panelists were: Beryl Johnston, Ted Fitzgerald, Skip Coghlan, and Tom Pettigrew - U.S. Forest Service; Jack Neckels, Jimmy Straughan, Ken Raithel, and Lou DeLorme -- National Park Service; Joe Bonga - Bureau of Indian Affairs; and Larry Hoovestal - Bureau of Land Management.

Federal Lands Highway participants were: Tom Edick, Mark Chatfield -- HFL-1; Allen Burden, Francine Whitson, Butch Wlaschin, Patrick Wlaschin -- HFL-10; Hugh Jones, Dave Green -- HFL-20; Gary Klinedinst, Jim Amenta, Clara Conner, Mary Daigle, Greg Dolson, Shoukry Elnahal, Vivian Hanna, Carol Jocaby, Otto Mayr, Don Miller, Julia Perry -- HFL-15; Larry Smith, Bob Lale, La-Vica Andre, Ken Burns, Larry Corbell, Larry Henry, Charlie Houser, Mary Jane Knoll, John Penzien, Bob Welch -- HFL-16; Jim Hall, Phyllis Chun, Tom Hildreth, Paul Rettinger, Gina Sexton, Ray Schadt, Mary Ann Spurlock, Rich Wasill -- HFL-17.

Benchmarking

by Paul Schneider

This paper summarizes information contained in the book, *Benchmarking: A Practitioner's Guide for Becoming and Staying Best of the Best* by Gerald J. Balm. Balm is the benchmarking expert at IBM.

Benchmarking is a process by which an organization continuously compares its processes, products and services to those of the world's best organizations with the same or similar functions. It is a comparative investigation that analyzes the gap between an organization's present level of performance and the best that exists.

Benchmarking is NOT a means to justify blatant head count cuts or cycle time reductions.

A benchmarking process flow is shown on the next two pages.

I. Self introspection

1. Clarify your customers and outputs -- determine what outputs to benchmark. Outputs may be for internal customers, external customers or both. Obtain customer review and comments on outputs. Then prioritize the outputs. Not every output can be benchmarked initially, so top priority items get benchmarked first.

2. Define appropriate benchmarking measurements -- The measures should indicate how *customers* measure success and quality. Possible measurement set indicators can be financial, technical, schedule, performance, quality or customer satisfaction.

3. Review and refine processes or product definitions -- Balm recommends expanding the boundary of the process analysis to include understanding what your customers do with your output after they receive it from you. Balm feels that changing internal process boundaries have the greatest impact on sources of quality degradation and customer dissatisfaction.

The Process Action Teams are currently reviewing and refining our processes. The Program and Resource Monitoring System flow chart is a good flow chart of our overall process for the one mission area of engineering services.

II. Pre-Benchmarking

4. Prioritize and select what is to be benchmarked -- ask "What are our most important work products? Where is customer satisfaction the lowest?"

5. Choose your benchmarking partners - Balm states that benchmarking against the internal best before going external is worthwhile. He suggests an information search using internal subject matter experts, industry periodicals, leadership companies, etc. External benchmarking partners should be viewed *by our customers* as best of the best.

6. Set the level of data collection -- collect data from a literature review, research reports, or direct contact (lowest to highest dollar value). Information can be obtained internally, from public domain (library, seminars, or consist of original research (questionnaires, phone calls). The data collection team needs to have in depth subject matter knowledge on the benchmarked product, process or service; and someone with a

perspective broader than the specific process, product or service being benchmarked. A person responsible for benchmarking, person responsible for implementing changes, person from site/headquarters planning/analysis

III. Benchmarking

7. Collect and organize the data -- gather data about the chosen partner organization so that its achievement level can be compared to ours. Analyze the performance gaps and reasons for those gaps. Prepare a set of key questions prior to making contact. The top priority questions are first. Send the list of questions to the partner first.

8. Calculate data and organize it (calculate gaps to baseline) - There are good gaps, small gaps, and bad gaps.

9. Estimate future attainable levels of achievement -- at this point, Balm suggests that the benchmarking team should chart the projections of both its own organization and of the benchmarking partner.

IV. Post-Benchmarking (Project Management)

10. Present benchmarking results - Balm gives suggestions as how to present the results. Basically, he states the changes will often be competing for resources, and if the benchmarking recommendations are not accepted, then it will be back to business as usual.

11. Set goals and action plans -- set short term, "tactical" or "operational" goals, and long-term "strategic" goals.

Hierarchy of goals:

- **Overall mission (rarely changes)**
- **Planning principles (occasionally change)**
- **Strategies (regularly updated)**
- **Performance Goals (frequently change)**
- **Tactics (frequently updated)**
- **Operating plan goals (regularly and frequently change)**

In this step, benchmark findings are converted to operational goals. Long term goals should be very difficult to force organizations out of business as usual improvement mentality. Good goals then need to be transformed into good plans.

12. Implement actions and assure success -- if very large changes are recommended from the benchmarking effort, such as multi-site or multi-department changes, use a pilot group with a high probability of success initially before changing the entire organization.

V. Review/Reset (Progress Assessment)

13. Review ongoing benchmarking integration -- include an appropriate level of ongoing benchmarking.

14. Assess progress toward goals -- monitoring and reporting should continue after implementation is complete to assure stability and achievement of longer term goals.

15. Reset goals and return to step 1 -- periodically update and reset goals.

The Customer Viewpoint

Accurate assessment of customer requirements deserves strong efforts. Customer needs must be prioritized above customer wants or customer desires, but the latter are not ignored. The measurements and parameters used to compare ourselves against others are those which are most important to our customers.

Types of Benchmarking

Internal Benchmarking -- comparing yourself against a similar process, product, or service within your own organization (not necessarily at your location).

Competitive Benchmarking -- comparing yourself against the toughest external competitive organization(s).

Functional Benchmarking -- comparing yourself against other world-class companies who do what you do.

Generic Benchmarking -- comparing yourself to a world class company that is not even in your industry but that does some processes similar to yours (e.g., the recruiting process).

Consultant Study Benchmarking -- comparing yourself to any other world-class company by utilizing the contracted services of a consultant.

Reasons to Benchmark

- To find out where you measure up as a world-class organization,
- To help identify your strengths and weaknesses,
- To learn from leadership experience of others,
- To assist you in justifying and prioritizing resource allocation toward improvements,
- To enable you to remain competitive and achieve total customer satisfaction.

Priority of What to Benchmark

Is the work product the cause of customer dissatisfaction?

Is it a cause of management concern and attention?

Is your current performance on this product a long way from where you would like to be?

Is this a very important product in the context of all you do?

Is this work product making you non-competitive?

If the answer to any or all of these questions is yes, benchmark!

Who's Your Customer?

by Mona Singleton, WFL

By now most of us are familiar with many of the TQM concepts, especially, customer satisfaction and focus on the customer. Sometimes, however, we may not be clear on who our customers really are. Are Federal Lands' customers our client agencies, our co-workers, supervisors, employees, or the motoring public?

First of all, we have many customers. They exist both inside (internal) and outside (external) Federal Lands. Everyone has a customer, just as everyone is a customer. Even though some of us may never see the customer who ultimately buys and uses our products and services, we are still service professionals who can provide quality customer service.

Most customers can be defined as one or both of the following:

External customers are the people who buy/pay for our products and services. They are external to, or outside of, our office(s). In Federal Lands our external customers can be the Forest Service, the Park Service, the Bureau of Indian Affairs, and ultimately the motoring public.

Internal customers are the people we work for, those who work for us, and those who work with us. All of these people depend on us and the work we do to complete their own work. Yes, even the people that work for us or with us are our customers. Their work is clearly affected by what we do.

So, the answer to the question is -- they are *all* our customers: client agencies, co-workers, supervisors, employees, and the motoring public.

How can we identify our customers? External customers may be easier to identify than internal customers because they pay us for the work we do.

Internal customer may be harder to identify. One way to determine who our internal customers are is to ask two questions:

1. Where does my work go?

2. Who is my work important to?

The individuals or groups identified by these questions are our internal customers. Internal customers are people who benefit or suffer from the work we do! We should consider everyone we come in contact with as a customer. We should also remember the customer is the only reason we are here. We are not doing our customers a favor by serving them; they are doing us a favor by giving us the opportunity to do so.

Structure

by Mark Chatfield, HFL-1

With a simple statement, Anna VerSteeg of Competitive Solutions, Inc. dynamically described to Federal Lands Highway strategic planners how teamwork can become the way we work.

"We are human beings -- we need structure." (Like a baseball team.)

Jim Hall provided an article in the last issue of the FLH Quality News. In the article, Jim described his encounter with Anna VerSteeg at a Fall 1994 Total Employee Involvement (TEI) conference. He wrote about much of Anna's message and said, "I only wish that all of our Division Quality Council (DQC) could have attended -- it was that good." That endorsement set wheels in motion.

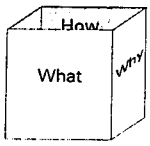
Phyllis Chun, Western Division's Quality Coordinator, contacted Competitive Solutions and was able to secure a time slot on Anna's intense schedule. The time slot for Anna was between two trips to the West Coast from her Raleigh, North Carolina office in the same week. The time slot for FLH was on Thursday immediately following the annual Strategic Business Planning meeting in the week of March 13. Without repeating all the

points of the article in the last issue, here is my understanding of her personal message to Federal Lands Highway.

- Empowerment can be defined as, "Leaders tell what and why; teams tell how." The "what and why" define the boundaries, or structure. The "how" describes exactly the steps which will be taken within those boundaries. This simple definition, if consistently applied, not only will remove much of the confusion over the term "empowerment" but also will go a long way toward eliminating micromanagement. Ask your boss if he or she is willing to let you determine "how."

- Empowerment is enhanced when leaders clearly define the structure or box. They do this by making the box the right size with all its sides solid and connected. Empowerment results when leaders constantly permit the team to work freely within the structure. Team members act empowered when they perform to their standard procedures on team behaviors, team expectations, interpersonal communication, recognition, responsibilities, decision making, and relationship to business objectives.

"Leaders tell what and why; teams tell how."



"Empowerment is enhanced when leaders clearly define the structure or box."

- Go forward with the Federal Lands "Self-managed Team Pilots" not as an experiment, but as the first set of teams from which all the organization can learn before incorporating teamwork at all levels. Don't wait to learn exactly how it should be done, but do what you know, document, and report what works and does not work to others who are initiating the effort. Don't get hung-up on the words -- just do things that enhance teamwork.

- Don't make drastic changes to the existing organizational structure just to go to a team environment. Let the supervisor be the coach, but make sure the coaches change their behavior by implementing specific, structured, techniques. This is accomplished by training and discipline to follow standards.

- Focus on the business. Use the FLH Strategic Business Plan or "master action register" as the FLH-wide "what" and "why." Publish the master plan to the entire workforce. Use Division Action Plans as Division's "action register" and the first level of "how." Develop Branch, team, etc. action plans with the details. Update the plans monthly. At least once a year, perferably more frequently, explain to employees and customers who provided input what we heard and what the disposition is.

- Develop standard operations for all teams, starting at the top.

- Eliminate as many barriers to teamwork as possible. Examples of barriers include discriminating in dress code, office space, work schedules, parking spaces, and availability of information.

- Home teams are existing work groups. Membership is mandatory. The team focus is on day-to-day work improvement. Members leave when they change jobs. The coach is the supervisor. The team members each have a training plan.

- Project teams, such as the FLH Process Action Teams, are special task or improvement efforts. Membership is negotiated. The team focus is on getting the project done. Team members leave when the project is done. The supervisor is the coach and team leader. Training is specific to the project and only as needed by the individual members.

- Make the FLH business objectives and organizational values part of performance reviews. Review contribution to business objectives during the first 10 minutes of every staff meeting.

- Use 360-degree Performance Reviews beginning at the top of the organization and at the top of each Division. Implement this over a year in steps -- don't go directly face-to-face. A third of an individual's performance evaluation is provided by other team members, a third is provided by those who work for the individual, and a third is provided by the individual's supervisor. Evaluation criteria is in the form of three categories of questions: business objectives, values, and career development.

- Team leaders should make sure every team member knows what the primary leadership team and what the team leader expects, what team members

expect, and what to do if expectations are broken. When Anna asked if this was being done in FLH, everyone's first reaction was that it was not. Upon further reflection, I realized and pointed out to the group that the FLH's Executive Quality Council members just signed this very type of document. As a conclusion to this article and to let all readers know that there are some good examples being set by the EQC, here is the text of the agreement:

THE FLH LEADERSHIP TEAM

PROCEDURAL CONTRACT GUIDELINES

The Team Defined

For purposes of this contract and guidelines, the EXECUTIVE QUALITY COUNCIL (EQC) is defined as the Federal Lands Highway leadership team. The seven members of the EQC team consist of the Federal Lands Highway Program Administrator, the two FLH Division Chiefs, the three FLH Division Engineers, and the Team Leader of the Quality Coordination Team (QCT). The Team Leader of the QCT will serve as an adjutant team member.

Contractual Commitment

The procedural agreement is a contract which defines how EQC members will work together. It is only through the integration of the efforts of all members that excellence in team work can be achieved. In other words, acceptance of this contract by the team signals a commitment on the part of each individual team member to strive for excellence in all interactions, to be conscious of process as well as results, and to work for the collective prosperity of the team.

Safeguard The Individual

The intent of this agreement is to provide a foundation for EQC interaction which safeguards the individual while promoting achievement of collective responsibilities. This guideline can be called upon for settling disputes, minimizing confusion, or helping the team regroup when subjected to unexpected pressures.

Conscious Change

This document can be changed at any time through the consensus of the team. Additions, deletions or modifications can only be made with the complete agreement and active support of all team members. Although the opportunity for changing these guidelines does exist, and change should always be considered, those considerations should not be taken lightly. When membership on the team changes, the contract should be reviewed, redrafted, and signed by all members.

Enforcement

1. The successful implementation of this agreement is the responsibility of all team members.

2. Any member noticing another member's behavior which is not in keeping with this team's procedural contract is to provide feedback to that individual at the earliest opportunity outside the meeting.

3. Any member noticing the team performing in a dysfunctional manner is to stop the meeting and review with the team what caused the situation in terms of content (was it a volatile issue?) and/or process (was part of the team's procedural contract violated?)

4. Report results of enforcement actions to the entire team at the beginning of each meeting.

OUR TEAM'S PROCEDURAL CONTRACT

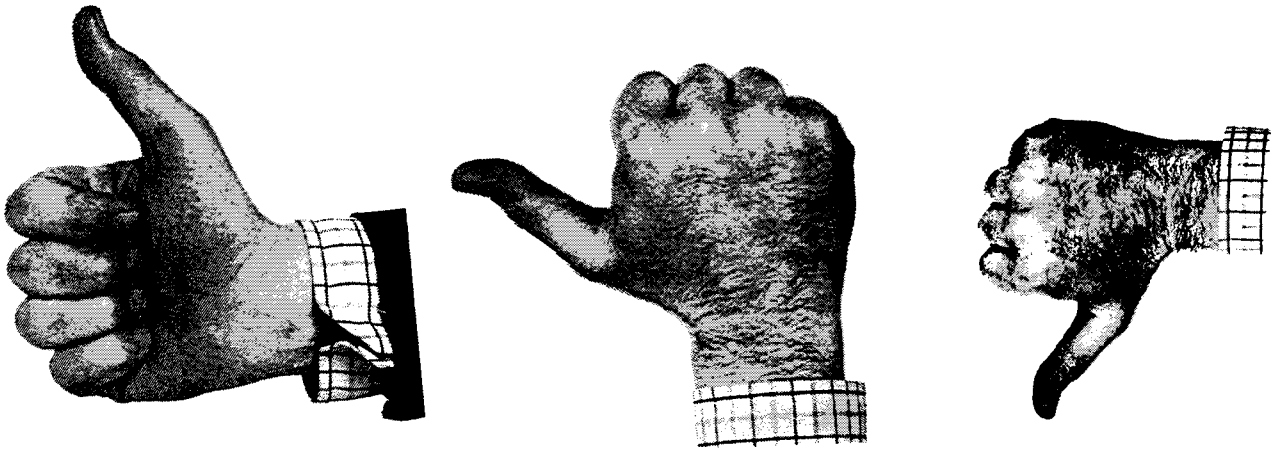
We agree to:

Before team meetings

- **Each EQC member, on a rotational basis, is to accept the leadership assignment to be responsible for the meeting agenda, and facilitation of the meeting.**
- **Each EQC member will provide their final input to the meeting agenda in format within one week of receiving the request for agenda items.**
- **Responsibility for the meeting agenda includes:**
  - Request suggestions for the agenda at least three weeks in advance of the meeting
  - Getting the agenda to team members two weeks in advance of the meeting to provide adequate time for preparation and thought
  - Assuring there is a recorder for the meeting if the adjutant team member is not available for any reason
  - Assuring there is facilitation for the meeting
  - Deciding on the location, dates, and times for the meeting
  - Identify and agree upon meeting objectives and clarify issue type (decision mode ... command, consensus, convenience, consultation) in advance so that adequate preparation and forethought can be developed.

During EQC meetings

- **Use a "check-in" at the beginning of each day to permit each member to briefly, and without further discussion, describe their particular interests or distractions which may affect team performance during the day.**
- **Reach agreement in the following manner:**



- Discuss the issue assuring everyone has input.
- State the proposed decision.
- Indicate consensus by signaling:
  - Thumb up - Full agreement and concurrence, Agree.
  - Thumb sideways - Agreement and general support, Concur.
  - Thumb down - Disagreement, No.

- **If an issue does not receive concurrence or agreement after reasonable attempts to reach consensus, the subject will be referred directly to the Program Administrator to decide if it should be tabled, killed, or made a final decision.**
- **Review the agenda at the beginning of the meeting and adjust it as agreed upon by the entire team.**
- **Use meeting time efficiently including starting, returning from breaks, and concluding on time.**
- **Encourage open discussion at all times.**
- **Avoid sidetracking discussions.**
- **Seek all members' involvement. All of the team members have a stake in the team's success. All members contribute; there are no hitchhikers.**
- **Share feedback in a spirit of helpfulness, even when that feedback is difficult to give.**
- **Receive feedback in a spirit of open mindedness, especially when that feedback is hard to take.**
- **Strive to focus discussion by listening to each other and integrating our ideas so that we can bring issues to conclusion expediently.**
- **Use a time out signal when needed to refocus discussion.**
- **Use a "check-out" at the end of each day and conclusion of the meeting for each member to briefly, and without further discussion review their perceptions of the meeting.**

After the meeting

- **Maintain the team integrity inside and outside the EQC by revealing only team results, not any indication of which individual or subgroup of members may have agreed, concurred, or disagreed on any issue.**
- **Review and provide comments on the draft written meeting notes/minutes within a week of receiving them.**
- **Support the EQC in a manner which will foster trust, harmony, good relations, and which will inspire others in the organization to effectively lead through teamwork.**

All Team Member Signatures, dated February 24, 1995.

The Benefits of Partnering

A Federal Lands Highway Initiative

(excerpts from an article by David S. Bushnell, Director, Center for the Effective Use of Human Resources, Human Resources Research Organization, Alexandria, Virginia and Larry Smith, P.E., Division Engineer, Central Federal Lands Highway Division, Lakewood, Colorado)

Bill Cross, Headquarters Federal Lands Highway Construction Operations Engineer, represented Larry Smith in a February panel discussion on Partnering. The occasion was an Institute for Industrial Engineers' sponsored conference in Miami during a time when Larry was attending an Executive Quality Council meeting elsewhere. Larry and David Bushnell co-authored the article which was based on Federal Lands Highway experiences in partnering.

The article is excellent, but is too long to reproduce here. If you would like a copy, call Bill Cross at (202) 366-9479. The abstract says, "Since 1988, FLH has been systematically implementing Total Quality Management (TQM). A key component of that effort has been its "partnering" initiative. It has been used to reduce the traditional adversarial relationship between FLH and its contractors by jointly discussing and reach-

ing mutual agreement on the overall goals and objectives of projects before disputes arise. The data indicate cost savings and significant dispute avoidance are achievable through partnering arrangements. Partnering is a desirable alternative warrenting serious consideration by public sector contractor administrators."

FLH has active partnering on about 45 percent of its construction program. Partnered projects have a lower contract growth rate and a lower number of claims when compared to non-partnered projects. While non-partnered projects experienced over 15 percent claims, partnered projects had none. Because data is limited, FLH does not place a dollar value on total cost savings, but findings indicate that over time significant savings may be achieved. From a cost avoidance perspective, it has been estimated that for five particular partnered projects valued at $29 million, $1 million in potential claims was avoided.

Strategic Business Planning in FLH

What it IS

- The SBP is an ongoing process to help align everyone in FLH over at least the next 3 years. Steps are underway to increase the planning period to 5 years.

- There are several activities and documents that make up the SBP. The two primary parts are called for by law (the Government Performance and Results Act). These two parts are 1) the Strategic Plan, and 2) the Business or Performance Plan. The Strategic *Business* Plan document is the combination of these two.

> *"Strategic Planning sets the overall long-term direction of the organization."*

- **The Strategic Plan part of the SBP is the set of goals and objectives for all FLH covering the major change initiatives for the major functions and operations of FLH over 3 to 5 years. This part of the plan is not like the "game plan," but it is more like the long-term goals of the athletic department (what it wants to be). It must contain our mission statement, outcome-related goals and objectives, a description of how the goals and objectives are to be achieved, identification of key factors external to FLH and beyond its control that could significantly affect achievement, and a description of and schedule for future program evaluations.**

- **The Business or Performance Plan part of the SBP includes the "performance elements" or strategies and actions with associated resource estimates covering all known work over the planning period by fiscal year. It includes actions for strategic improvement/change and for accomplishing the ongoing organizational mission. This part of the plan is like the pre-game plan, game plan, and team roster. The Performance Plan is to drive the budget and must establish performance targets for each program in objective, quantifiable, and measurable form, describe the resources needed, establish performance indicators to measure outputs, permit comparison of actual program results with established performance goals, and show how the measurements will be validated.**

- The Strategic Business Planning process is documented in the Federal Lands Highway Program Manual, Chapter I B 3 and calls for several actions to make sure everyone who is affected by the plan has an opportunity to contribute to it. Strategic Planning sets the overall long-term direction of the organization. As such, it is a leadership responsibility and all final decisions on the goals and objectives resides with the Program Administrator who must also coordinate with the Office of the Administrator. The Program Administrator and the Division Engineers/Chiefs typically develop the goals and objectives after gathering input.

- **Data is collected through FHWA and non-FLH sources to assure the plan considers the "big picture."**

- **Results from the annual November FLH Cultural Survey are compared to previous surveys and used to show where employees perceive strengths and weaknesses in the organization.**

- **Results from the annual compilation of results from the FLH Customer Satisfaction Surveys for completed projects are used to identify where customers who receive our designs and constructed projects see areas for improvement.**

- **Results from the annual Quality Improvement Prototype (QIP) assessment are used to show where FLH can best expend resources to make quality improvement continuous over the long term.**

- **Feedback from partner agencies is solicited from peer level leaders and is used to identify where executives in other key agencies see a need for improvement.**

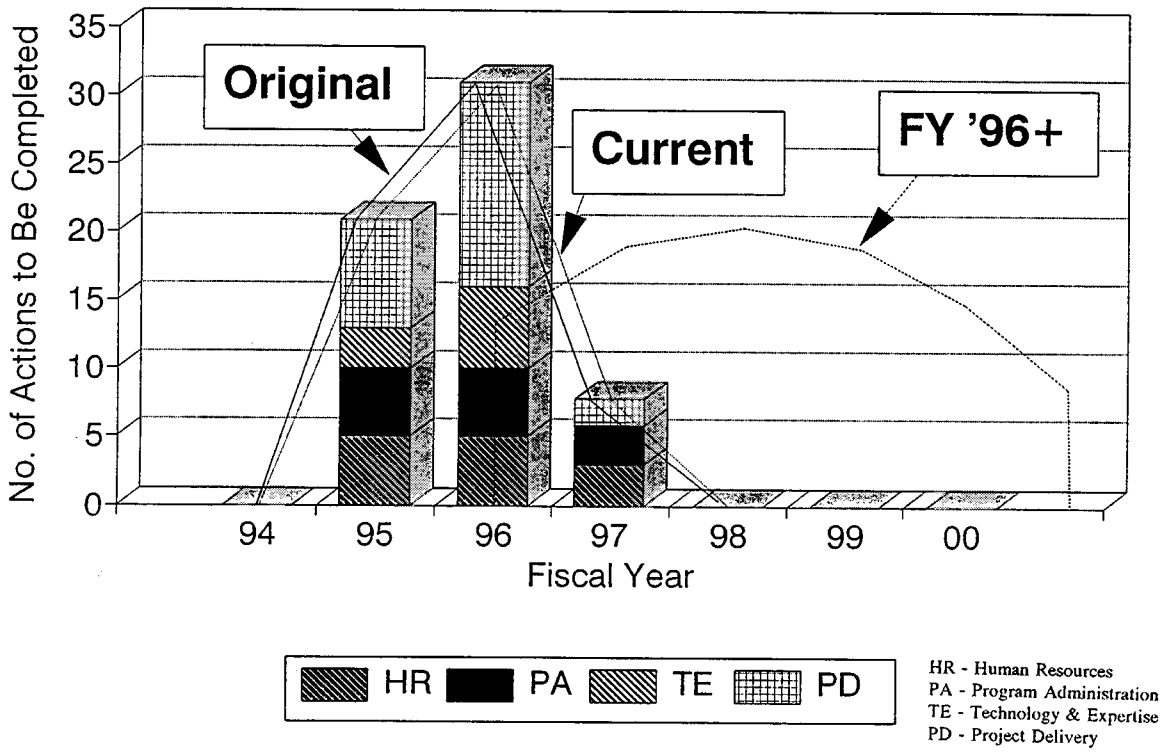
- **Employees and executives get together in a formal "listening" session once a year as necessary to see and interact with each other. Lists of things that are working well and things that need improvement are generated at these sessions and considered in developing the SBP.**

- **Elements from the FHWA National Plan along with the Secretary's and Administrator's performance plans are reviewed for appropriate FLH action.**

- In March the Program Administrator, Division Engineers/Chiefs and most of those who report directly to them meet to develop the SBP *for the next 3 to 5 fiscal-year period*. The agenda calls for

FLH FY '95 - '97 SBP Status

Improvement Goals as of March 1995



a review of the input described above, direction from the Program Administrator and other leaders, review and adjustment of the Strategic Plan, and development of the Business/Performance Plan with initial estimates of resource requirements (both workyears and money).

- A draft SBP document is prepared following the March meeting and Divisions begin immediately preparing their Division Action Plans with more detailed resource estimates.

- The SBP and Division Action Plans are developed through the Spring and Summer and are approved by the beginning of the Fiscal year.

Strategic Business Planning in FLH

What it is NOT

The previous article tells what the FLH Strategic Plan IS. This one tells what it is NOT.

- The FLH Strategic Business Plan (SBP) is not just a document published at the beginning of a fiscal year showing the work to be accomplished.

- The SBP is not an individual action plan. The SBP is not the detailed day-to-day activity schedule each of us are responsible to carry out.

- The SBP is not TQM. The principles of customer focus, employee involvement, and continuous improvement are used in the development and in carrying out the SBP. The SBP also incorporates elements of the TQM implementation plan as strategies for change. However, the SBP does not take the place of TQM. If the SBP is like the long term goals of the athletic department along with the game plan to carry it out, TQM is similar to the team's philosophy of playing the game and knowing what it will take to improve.

- The SBP is not dispensible. FLH leaders do not have the desire or the option to not do strategic planning -- not only is it good business, it is mandated by Federal law.

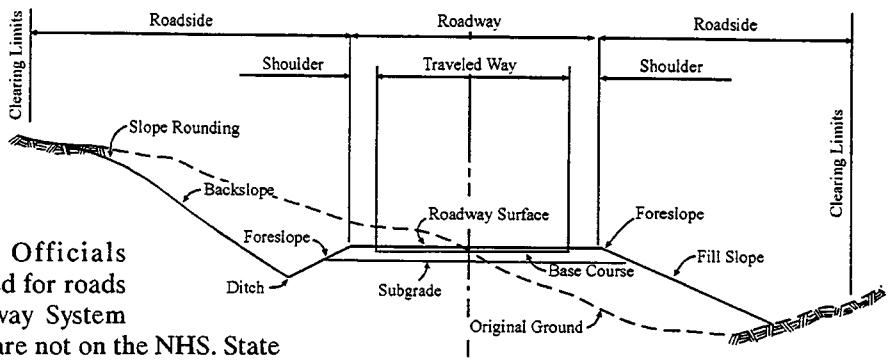
- The SBP is not complex. After several years of experience, FLH has focused the strategic plan on only four primary goals. These four goals cover the FLH missions which include all the work that FLH does. Although there are a number of objectives, strategies, and actions; and there are ways the plan could be made easier to understand -- it is not a complicated document.

Schematics of the process and the plan are shown on pages 14 and 15.

Using Teams to Determine Design Standards

by Tony Welch, Headquarters Program Development Engineer

Under the Intermodal Surface Transportation and Efficiency Act (ISTEA) of 1991, standards other than those approved by the American Association of State Highway and Transportation Officials (AASHTO) may be approved for roads not on the National Highway System (NHS). Most FLH projects are not on the NHS. State highway agencies have shown an interest in the methods the FLH uses to determine standards now that the ISTEA gives States more design flexibility. This paper was originally developed to tell State highway agencies how the FLH arrives at project design standards, especially for the low-volume, low-speed roads more typical of non-NHS routes. For this discussion, low-volume, low-speed roads have less than 2000 vehicles per day and have less than 70 kilometer-per-hour design speed.



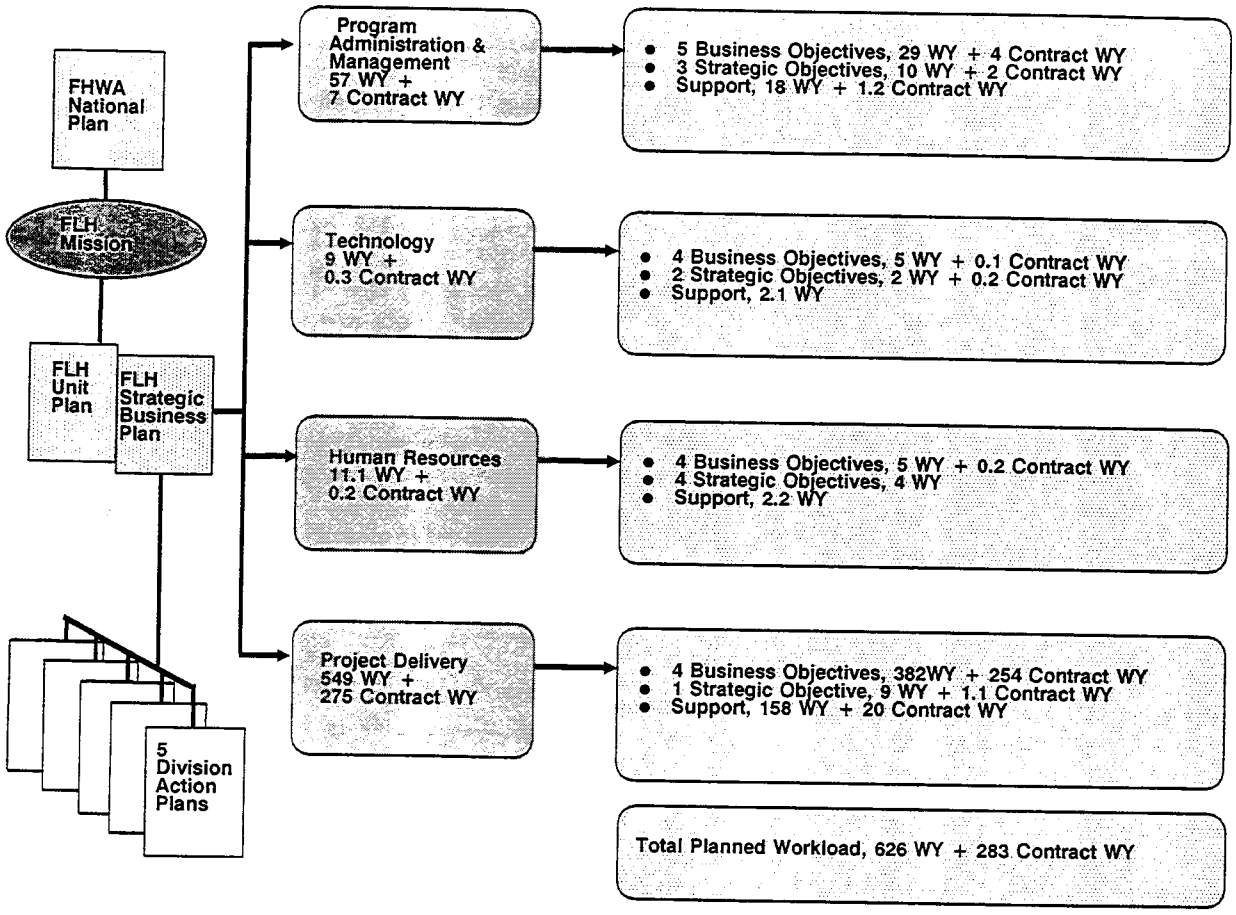
FLH and its partner agencies typically go through a lengthy and complex process to determine design standards on the environmentally sensitive routes. FLH has considered developing lowered design standards which seemed to be more appropriate for the lower-volume, lower-speed roads. Lowered standards should reduce the number of design exceptions. Hopefully, lowered standards would permit faster and less difficult decisions related to specific projects. However, it is likely that no absolute minimum is possible which would significantly provide either of these advantages.

First, we really can't anticipate and provide for all possible situations in developing any design standard. Individual projects still need to be reviewed to determine the need for exceptions -- even if design standards are significantly lowered. Second, any lower standards might set a precedent for groups opposed to improvements. Lowered minimum design standards would make adoption of project standards from the higher end of the range more difficult. This would be true even on projects where higher design standards are economically and environmentally possible and desirable.

Because of all this, FLH takes the position that development of new design standards is not needed or desirable. Current AASHTO standards have flexibility enough to meet most project needs. FLH projects funded under Federal Lands Highway Programs (FLHP) use AASHTO standards as the basis for

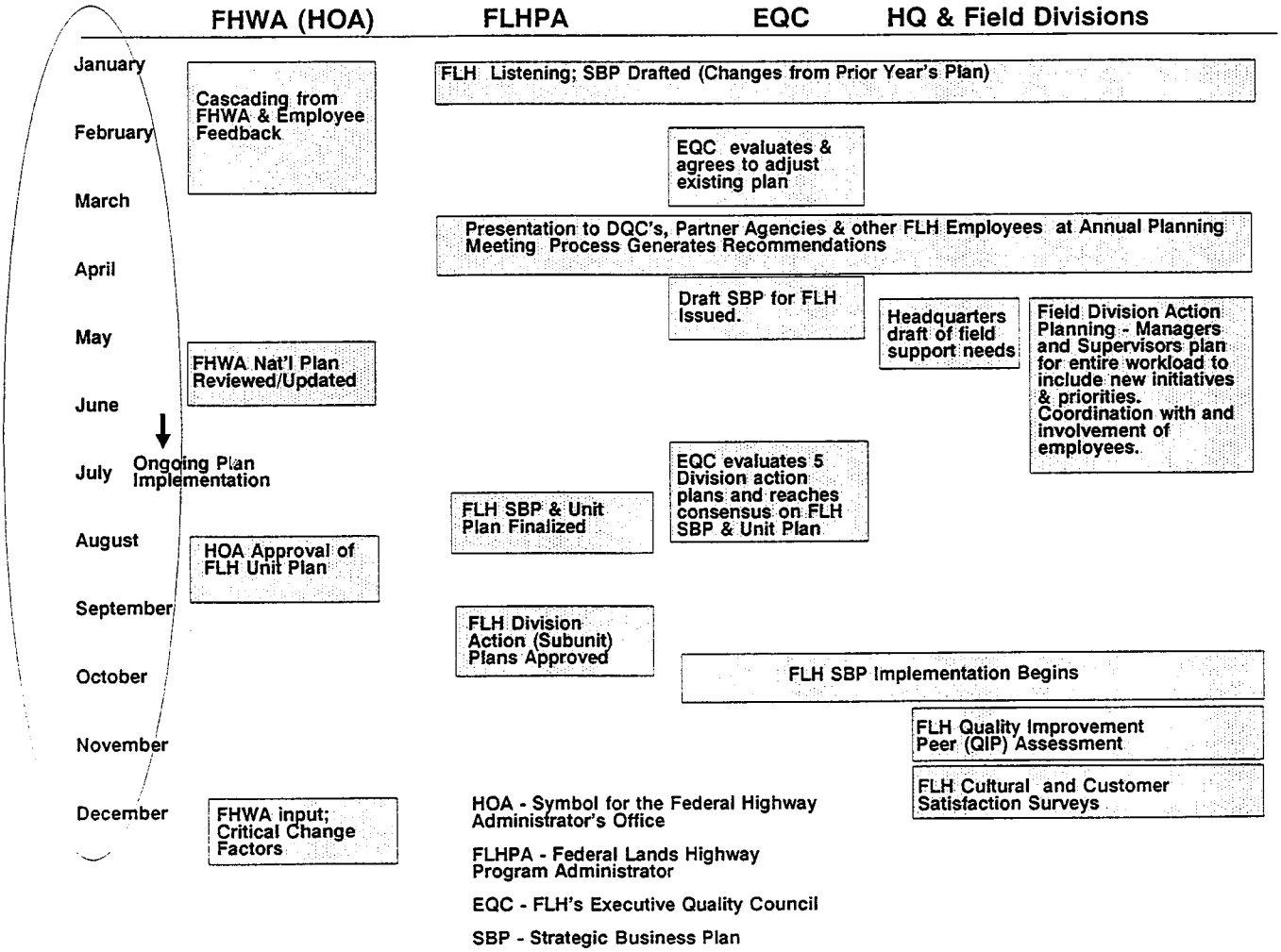
(Continued on p. 16)

1995 FLH Strategic Business Plan



WY - Work Years

FLH Strategic Business Planning Process



(Design Standards, from p. 13)

design. Experience has shown that the best way to decide on individual project standards and any need for design exceptions is through a **team process.** These **interdisciplinary teams** may consist of engineers, landscape architects, foresters, biologists, historians, water resource specialists, and archaeologists from the land owning and cooperating agencies. FLH engineers make design recommendations and make sure the land owning agency knows the associated risks resulting from various choices. Teams have had difficulty communicating the safety consequences of not meeting full AASHTO standards. This communication can be improved with the help of a technique relatively new to the FLH called **design risk analysis.** Risk analysis permits comparison of the typical accident rates and accident reduction factors for different design features. To help with this, FLH has a *Design Risk Analysis Users Manual* for use on lower-volume, lower-speed roads.

Before risk analysis procedures were understood, the FLH could do a pretty good job of estimating impacts of proposed design alternates in terms of areas disturbed, volume of earthwork, and construction costs. However, FLH designers could only make vague statements about the consequences of not meeting full AASHTO standards, because they could not quantify safety impacts. The teams and Federal land owning agencies were not able to directly compare the safety risks with the environmental impacts. Now, with design risk analysis, safety impacts can be estimated more accurately. This is done by predicting the change in accident rates and accident costs resulting from the design alternatives and exceptions. These more tangible accident costs can be weighed against the costs of mitigating environmental impacts. We are finding that on many low-volume projects, full standards are not cost-effective due to the low accident rates.

Using a team process permits consideration of a wide variety of concerns, including safety issues, in making the final decisions on project standards. In our efforts to manage by facts, approval of project design standards, including team decisions recommending design exceptions, is easier and more uniform using the justification resulting from risk analysis. When a team design process like this is used, the land owning agencies are in a much better position to defend their design decisions.

For more information on this subject, call Tony at (202) 366-9476

Quality and Productivity Management Association National Conference

"Driving High Performance Outcomes During Turbulent Times."

Orlando, Florida, January 10-13, 1995

by Ken Burns, Central Division

This high energy course described how companies can implement quality initiatives during turbulent times such as downsizing or restructuring. I believe the course was excellent. It was a very timely course considering the present discussions in Congress and the possibility of streamlining in Federal Lands. This conference was attended by employees of companies that are all faced with the task of doing more with less and delivering a better product. Granted, most of these companies were private firms and they do not have some of the Federal regulations, but it was interesting to see how they were addressing these issues.

I learned how to deal with some of the more pressing issues. The theme that really stuck with me was that in each of these companies, management was totally committed to making quality and productivity initiatives work. There were many concurrent sessions on quality and productivity and I chose to attend the sessions that best addressed issues Federal Lands may encounter. Here is a brief description of some of the sessions I attended and the key points.

Changeless Core

This session discussed keeping a changeless core of values in your organization. Effective organizations have common core values that all employees are aware of. Core values must remain constant to effectively utilize quality improvements. It is difficult to improve an organization if the organization is constantly changing. Rather than spend large amounts of time promoting quality efforts, focus on items (known as resistors) that are hindering the effectiveness of the organization. The reason given was simple. People naturally resist

change - that is the more you push change the more it will be resisted. A good example is Newton's third law - for every action there is an equal and opposite reaction. The key to the changeless core is to determine our core values and mission. Why? Because once these core values are known and understood by everyone it becomes easier to make decisions that affect the business. This is what we should strive for in our daily activities.

"The more you push change the more it will be resisted. A good example is Newton's third law - for every action there is an equal and opposite reaction."

Quality and the Space Program - Kennedy Space Center

This was an excellent presentation by Bob Crippen, Director. Crippen stated, "the single most important thing was to make sure your workforce knows what you want it to do." The space center successfully balanced process improvements with its first priority, safety. They were faced with the same government constraints that we are; however, they implemented a successful quality campaign. I was very impressed. The National Aeronautics and Space Administration (NASA) utilized a lot of measurement tools/data to effectively measure their process and evaluate the ultimate goal of reducing cost per flight while maintaining an excellent level of safety. The concept of measuring was a big hurdle for them -- employees worried about what the results would show. NASA carried this out with the familiar constraints on the budget. The NASA effort was so impressive that the National Performance Review used NASA as its example for government reform. One word of caution -- Crippen said to be careful how fast you evoke change. He stated it could be similar to an overdose.

Breaking Down Barriers and Reducing Costs through cross-functional teams - Chevron

Jim O'Brient gave this presentation on cross-functional teams. Chevron is increasingly relying on cross-functional teams instead of functional departments. Using cross-functional teams Chevron has reduced costs since 1991. Jim stressed that you must have management involvement -- employees usually wait on management to become involved (and to follow their example). We are planning to use several pilot cross-functional teams in CFLHD. It is imperative to align the team goals with organizational objectives. This ensures that the teams are working on items that are critical to the organization.

Walt Disney World Quality Tour

This tour was a behind-the-scenes look at the Disney operations. Several items that definitely add to a quality experience are the monorail systems and the underground tunnel systems. At first glance you might say "no big deal," but these two items are critical in keeping traffic out of the park and ensuring actors and supplies can move from stage to stage without being seen by the tourist. The garbage was removed in the underground tunnels so the visitor experience was not compromised. Children would not want to see a half dressed Mickey Mouse rushing to the 3:30 performance! I think you can get the idea behind the quality initiatives at Walt Disney World.

An interesting observation -- our tour guide used a lot of TQM buzzwords explaining how Disney supplied the "quality visitor experience." When asked to give specific details about Disney's quality program he didn't know if they had one. It was obvious that quality had become a way of doing business.

THE DISNEY APPROACH: A MANAGEMENT SEMINAR

"There's really no secret about our approach. We keep moving forward – opening up new doors and doing new things – because we're curious. And curiosity keeps leading us down new paths. We're always exploring and experimenting."

Walt Disney

The Disney Approach -- the Human Side to quality

Walt Disney world does not have a Quality department. Disney has a three-part "formula for success". The three parts are 1) hire the right people, 2) provide a quality guest experience, and 3) pursue Quality business practices. Disney recommends to stop teaching quality in a foreign language. Instead use these four simple steps:

1. *Do it right the first time.*

2. *Strive for zero defects.*

3. *Conform to specifications*; and

4. *The customer is always right.*

The Disney Corporation studied cultural influences on quality. Disney officials showed an entertaining 5-minute cartoon of cultural differences between Americans and the rest of the world. In the first segment, a German child read the instructions to the model car and then constructed it exactly as shown on the container. An American child ripped open the container, threw away the instructions and assembled a vehicle that more resembled a lunar rover than a car (and was happy). In the second segment, a Frenchman delicately cut his chicken and then proceeded to chew it for 2 minutes. Afterward he took a big sip of wine and then sat complacently. The American is shown driving the car, cellular phone in one hand, a Big Mac in the other hand, one foot holding a Diet Coke, and one foot on the steering wheel (does this sound familiar?). In the final segment a Japanese gardener meticulously preens a small bonsai tree. The American is shown with a gas powered weed eater trimming the hedge around the yard.

No doubt we all find that we have more in common with the Americans in these situations than the other cultures. Disney believess these can be simplified into some cultural quality elements. For example, Germans conform to standards. In France things have quality if they are luxurious. In Japan perfection is quality. Americans want things to get the job done. Now you might ask why this is significant but it shows how important Disney believes it is to know your customer and give them what they expect.

Transco Energy Company - Diagnosing Communication Needs During Turbulent Times

This session covered methods for diagnosing the communication needs in a company undergoing great change (downsizing, restructuring, changes in senior management, etc.). The diagnosis of Transco was performed through a customer survey. Some interesting findings - 20 percent negative responses on a question is a red flag! You should develop action items indicated by the questions with 20 percent negative responses. Transco found there was a strong correlation between external customer satisfaction and employee satisfaction.

Survey utilization was very important in assessing the climate of a changing workplace. Once the survey is

completed and the results known, the report to management should not be a "data dump." Management can respond quickly and effectively if the information is presented in a usable format. How the results of the survey are presented to employees is critical. Management should be trained on presenting the data before the presentation is made.

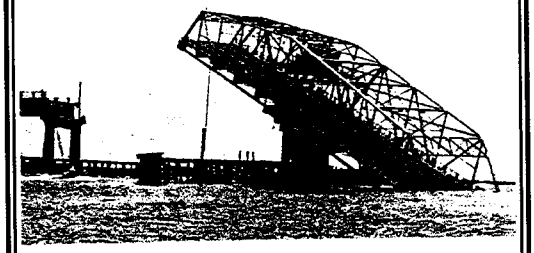
ALWAYS communicate actions that resulted due to the survey. It is important to have very quick turnaround between surveys and action. This ensures the employees that management has taken the survey seriously. In all, the surveys and resulting actions should be completed in 4 months -- for more complicated surveys a six-month time frame is more realistic. If the turnaround time is kept short employee reaction to surveys are usually good.

The Stuff That Drives High Performance Change -- Archetype Studies

This presentation was by Dr. G. Cloitare Rapaille. Rapaille discussed archetypes, that is, how Americans think and why we need change. Americans learn by making mistakes.

An archetype study is a process that brings into awareness the unconscious dimension of a product, service, or corporate culture. It gives vital information about people's attitudes, behavior, and motivation. Each organization has a unique culture. To understand a corporate culture is not just to determine "the way we do things around here," but to reveal unconscious values and beliefs, the special way the organization deals with problems and makes decisions, i.e. the organization's archetype.

First impressions are very important -- you never get a second chance to make a first impression. His first impression of an American was the soldier in the tank that drove the Germans out of his town in France during World War II. The soldier saw him and gave him a candy bar. He remembered saying to himself, "I want to be one of those guys." This is probably why he sought to become an American citizen. The emotional energy created during your first experience with a given product determines a pattern of behavior to be used throughout your entire life in relation to this product. These experiences combine to form an archetype. If we can understand the archetype we can meet people's unspoken needs. When expressing needs, people often give you coded information. The code can be broken by analyzing the material collected from selected groups of people, known as imprinting groups. Basically, people often say one thing and do another. Companies communicate rationally, often creatively within their markets but people respond emotionally and unpredictably. Before discovering the archetype we may be at a loss having to solely rely on statistics, surveys, focus groups and questionnaires. It seems we are just skimming the surface not quite sure if answering the right needs and not knowing precisely what to look for. If we understand archetypes then we can successfully communicate at all times.



"Americans learn by making mistakes."

MONSANTO Transforming hierarchy -- creating the organization of the future.

The total time it took to flatten the hierarchal structure of Monsanto was about 10 years. After the transition to teams in the workplace, a hierarchal organization inhibits productivity improvement. Plant manager Lee Hebert discussed how "flattening the organization" freed his company from the strangle holds that hierarchy placed on them. Hebert created three business groups (teams) that reported to him. He was more of a facilitator than a boss. One of his unique observations was that hierarchy doesn't lend itself to trust.

Monsanto doesn't have performance evaluations -- instead it uses open appraisals. During the appraisals teams evaluate team leaders and teams evaluate individual members. The evaluation sessions last between 1 and 1-1/2-hours in length. They ask the question "if it were your business, what would you have done differently?" This is sometimes risky because people have trouble talking to one another. Hebert stressed to strive to create an organization that will work for you -- get rid of the command and control structure. One last very important point -- NEVER lie to employees -- if you don't know something, you don't know something.

Thunderbolt thinking -- Moving to Action Now

This was a presentation on how to think. We need to unlearn habits that have kept us frozen in "this is how we always do it around here" thinking. The instructor used several interesting props to reinforce this point.

Some of the more interesting points regarding positive thinking presented were:

- 75 percent of sickness is caused by stress,
- Avoid endless loop questions,
- Focus on flexibility, which is another name for change,
- Shift constantly,
- Have a flexible focus, and
- Go for excellence and not perfection.

If you do things the same way you always have, you will get the same results you always have.

Conclusion

I'm sure we can all find FLH parallels in the quality and productivity initiatives presented at this conference. Sure, some of the items would be difficult to carry out but most have a direct application to Federal Lands. As you read through the summaries, I bet you began to get a good idea how Federal Lands can deal with some of the important issues facing us today. I recommend attending a QPMA conference should the opportunity present itself.

NEWS FLASH!

Thanks to Greg May in the Central Division, a videotape of the six-hour presentation on March 16 by Anna Versteeg of Competitive Solutions is available to FLH employees. Each Division has a copy. If you want to know about state-of-the-art self-managed teams, watch this video.

Recommended Reading

Libraries

Each Federal Lands Highway Division and Headquarters maintains a library of books, pamphlets, conference proceedings, video tapes, audio tapes, and other materials related to quality. See your coordinator for information.

Books

Quality Function Deployment, Integrating Customer Requirements into Product Design, Yoji Akao, Productivity Press, 1990

Handbook for Productivity Measurement and Improvement, William F. Christopher, ed., Carl G. Thor, ed., Productivy Press, 1993.

Empowered Teams - Creating Self-directed Work Groups that Improve Quality, Productivity, and Participation, Wellins, Byham, and Wilson, Jossey-Bass Publishers, 1991

Information Sources

Federal Quality Institute

The Federal Quality Institute, P.O. Box 99, Washington, DC 20044-0099 provides quality management services to all Federal Agencies. Subscribe to the Federal Quality News by FAX 202-376-3765.

Conferences

The Quality and Productivity Management Association, QPMA, hosts two major quality conferences each year. Contact your Quality Coordinator for dates and registration information. FLH is a Sponsor of QPMA. If you're not in FLH, call QPMA at (708)619-2909.

Miscellaneous

Brochure

TQM in FLH, an attractive brochure describes our Vision, Mission, Guiding Principles as well as our organization. Your FLH Division Office has copies.

Team Guidelines

The popular book, **Federal Lands Highway Team Manual** is available from the Division Quality Coordinator. Additional copies may be obtained by calling Headquarters, 366-9492.

Training Opportunities

Training in all aspects of TQM is available from many sources, internal and external. See your Quality Coordinator for ideas and to help you make arrangements.

Performance Management

FLH measures overall performance, surveys employees and obtains feedback from customers to let them drive the organization. If you would like to receive information about how this is done, contact your Division Quality Coordinator or the Headquarters office at 1-202-366-9494.

Strategic Business Planning

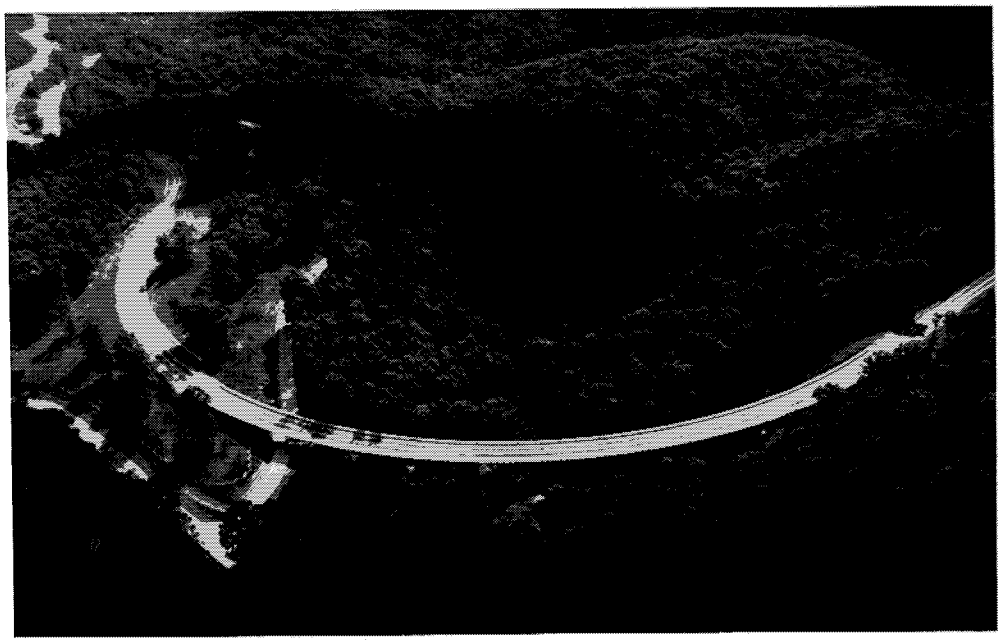
Integrating quality and strategic business planning is HARD work. Federal Lands Highway has direct experience to share. Contact Mark Chatfield, HFL-1, 202-366-9492.

Volume VI Issue 3 Federal Lands Highway Summer 1995

FLH QUALITY NEWS

U.S. Department of Transportation
Federal Highway Administration

400 7th St., SW Washington, DC 20590 (202)366-9492



Bridge over Forehand Hollow, Natchez Trace Parkway

Bottom-Line Quality

Corporations show results of their quality efforts by looking at their profits as the "bottom line." Since Government does not operate on a profit basis, its bottom line is performance. What is produced with the tax revenues allotted? The results of Federal Lands Highway (FLH) work to provide quality products and services can be seen in the examples which follow. The recognition FLH receives is consistent with its vision, "To be recognized as the best highway engineering organization through people dedicated to excellence."

The Spring 1995 issue of Public Roads magazine featured the spectacular Western Federal Lands project in Wyoming's Grand Teton National Park. The

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Publication No. FHWA-FLP 95-012

FLH QUALITY NEWS
Volume VI, Issue 3
Summer 1995
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The FLH QUALITY NEWS is an official publication of the Federal Lands Highway Office, Federal Highway Adinistration, U.S. Department of Transportation. It is published several times a year for educational purposes to promote quality principles among FLH's and other organizations' employees, managers, and supervisors.

Other topics may include information about programs, policies, projects, and administration. Contents of this publication may be used without permission. However, courtesy credit is appreciated.

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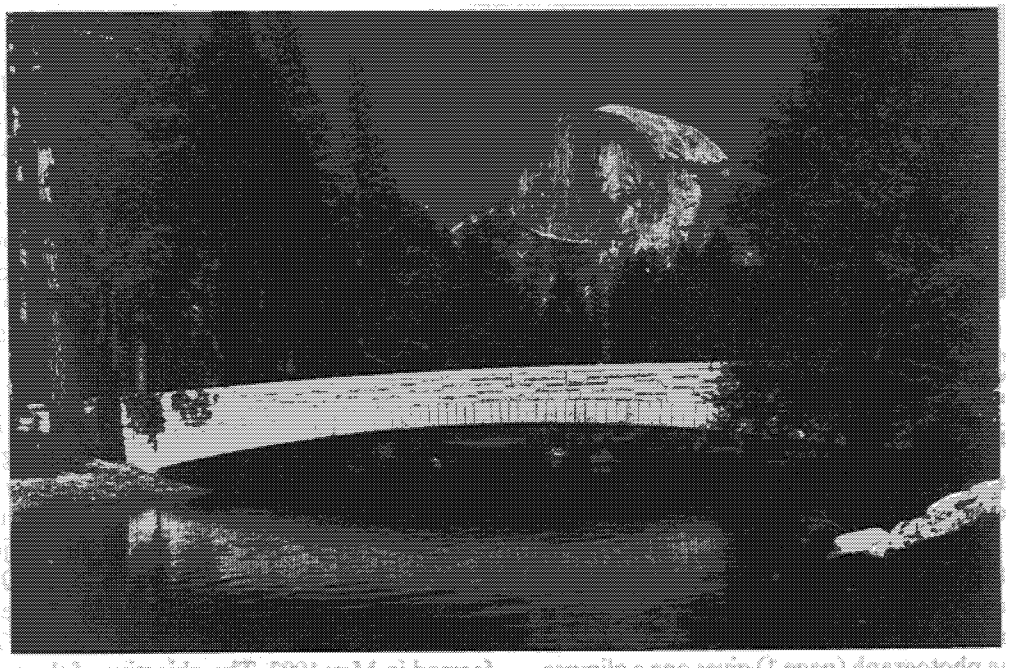
wonderful photographs and the excellent article were provided by Gary Hunter, Western's project engineer. The same issue also included photos of Eastern's projects on the Blue Ridge Parkway in Virginia and North Carolina. A major article with more pictures recognized Central's General Hitchcock Highway in Arizona.

Earlier this year, Biennial Design Awards were given to three Federal Lands Highway projects. Eastern's Forehand Hollow Bridge on the Natchez Trace Parkway near Nashville, Tennessee won the Award of Excellence, the highest award for improvements on Federal, State, or other publicly owned land. The Central Division's Sentinel Bridge in Yosemite National Park and Mt. Carmel Highway in Zion National Park received awards of merit.

The description which accompanied the winning entry for the Biennial Design Award shows how Federal Lands Highway works with partners and suppliers to provide a facility that meets or exceeds the customers' needs:

"The Natchez Trace Parkway is one of the most historic routes in America. The 450-mile long trail was carved out of the wilderness by the Choctaw and Chickasaw Indians. The Parkway is owned and maintained by the National Park Service and the Eastern Federal Lands Highway Division is responsible for the design and construction of the Parkway and its structures. The terminus of the Parkway is Natchez, Mississippi, on the southern end, and Nashville, Tennessee, on the northern end. Just twenty miles south of Nashville, the Natchez Trace Parkway traverses Forehand Hollow and affords a view of the landscape as Andrew Jackson's militia may have found it as they marched home on this route from their victory at the battle of New Orleans. A tall deciduous forest covers the hills and hollows. The Forehand Hollow Bridge spans nearly 1,000 feet and was designed to blend in with the surrounding setting to provide a panoramic view for the Parkway traveler. The bridge rises 100 feet above the basin floor. Trees line both sides of the bridge and project gracefully through the inside sweep of a long 8-degree curve which fades into the woodlands. The Forehand Hollow Bridge also provides a striking appearance when viewed from the Waddell Hollow Road below. The segmentally constructed concrete box girder was cast-it-place span by span. As one span was cast and held in place by post-tensioning steel reinforcement, the falsework was removed and reused to cast another span of the bridge, resulting in a reduction in time and money. This structure has three middle spans of 200 feet each in length. The end spans are 165 feet in



Sentinal Bridge, Yosemite National Park

Mt. Carmel Highway, Zion National Park

Sentinel Bridge Award Presentation in Lakewood, Colorado From left to right, Dan Wenk,NPS; Jim Roller, FLH; Howard Wagner, NPS; Charles Clapper, NPS; Larry Henry, FLH; Caleb Cooper, NPS; Larry Corbell, FLH(hidden); Larry Smith, FLH; Charlie Houser, FLH; Jim Keeley, FLH; and John Penzien, FLH

length. The abutments are accented with grassy slopes and rail fences which are traditional to this country-like setting. The superstructure with its decorative railing rests on four single column piers. The piers' unique geometric shape begins as a clipped hexagon that gently widens at their shadowed connections to the superstructure. The photograph (page 1) gives one a glimpse of the engineering ingenuity and expertise employed in the design and construction of this bridge; the sensitivity to the preservation of the area; and the ultimate goal of affording the traveler a safe, scenic, and pleasing traveling experience."

Are Leaders Made or Born?

By Gina Sexton and Phyllis Chun

Are leaders made or born? Here at Western Federal Lands Highway Division, we believe leaders are made. In fact, we have just spent the last 9 months "making" them!

Before you read on, I should define what we mean by the term "leadership." We believe that leadership can come from <u>any</u> person regardless of grade, title, age, sex, or any other criteria you want to tack on. And we <u>want</u> leadership to occur throughout our division - we want to encourage **all employees** to think, challenge, act, coach, speak out -- LEAD. We believed this whole heartedly and spent the last two years planning a program to make it happen!

What exactly did we do? How did this all start? The idea was born in 1993. While analyzing the 1992 Cultural Survey summary, the Division Quality Council (DQC) discovered that one of our lowest scoring areas was "MANAGERS SET EXAMPLES OF QUALITY PERFORMANCE." This particular rating scored low in 1990 and continued to drop steadily the following years. What was this saying about our division? What could we do about it? After quite a lengthy discussion, we came up empty handed. We could not get a handle on the root cause of this issue, so we decided to drop it from our list of items to work on that year. End of story ... Or so we thought.

One DQC member, Jerry Johnson, had a different idea. He thought this *was* a big issue that needed to be worked on and took the bull by the horns. During the next week, Jerry went on a crusade and convinced several key people in the office to join a team to tackle this issue. He went back to the DQC and got permission to proceed. The Western Federal Lands Highway Division (WFLHD) Leadership Team was formed in May 1993. The objective of the team was to find out what was behind the perception that WFLHD is deficient in leadership, and to develop and implement an action plan to address any deficiencies. The WFLHD Leadership Team members are shown in the photograph below from left to right: Mary Ann Spurlock, Jerry Johnson, Roger Steel, Gina Sexton, Nancie Pruitt, Julee McTaggert, Phyllis Chun, Brad Neitzke, and consultant facilitator Kylene Quinn. Not pictured are: Paul Rettinger, Jodi Chew, and Glen Bedell.

The team spent the first few months doing an in-depth analysis of the data in the 1989-92 Cultural Survey. We used almost every Total Quality Management (TQM) tool in the book - even the dreaded fishbone (cause/ef-

fect) diagram! With this data in hand, we developed our vision of leadership in Federal Lands Highway.

FLH Leadership Vision:

- To have visionary, forward-thinking leadership that can create a synergistic work place;
- To be leaders within the Public sector;
- To be known for our efficiency and quality;
- To be known for our responsible public service;
- To attract, seek out and retain quality employees;
- To nurture and develop employees; and
- To actively involve employees in agency leadership.

COACHING FOR EXCELLENCE

Leadership Program

With this vision in mind, we set out to create a training program that would provide many, if not all, of the skills needed by leaders. We knew that there were many leadership training programs already on the market. We also knew that many of our leaders had been to those training programs, and we were still perceived as lacking in leadership. We apparently needed something more, so we rolled up our sleeves and developed our own program. The existing programs seemed to lack a few critical items. First, they were one shot deals, where people went to training, then went back to work and promptly forgot to practice what they had learned. Second, the training was not tailored to meet our employees needs, or use real life examples of work situations that were relevant to our employees. We made sure that we included these considerations in the program we developed.

Here are the vital statistics about our Coaching for Excellence Leadership Program:

- The course was 9 months long so that participants had time to learn and practice key skills and concepts. Classes were held once per month.
- Classes were held on alternating Fridays and Saturdays each month. Course participants volunteered their time on four Saturdays to attend class.
- All employees were encouraged to apply for the program. The primary criterion for selection was to have a class that represented the diversity of the office, including grade level, type of job/work performed, branch, sex, and age. The class size was limited to 30. More than 60 employees applied for the program. Employees selected for the first class ranged from GS-4 to GS-14.

The following topics were covered during the nine months: accountability; agreement creation, conflict resolution, leadership and communication styles and skills, goals and commitments, win/win, stress reduction, comfort zones, team building, innovation and creative thinking, media skills and public speaking, negotiation, delegation and empowerment, and balance in life.

Each 8-hour (Friday/Saturday) session consisted of:

- A WFLHD spotlight speaker. The Spotlight speakers were employees in WFLHD that were considered to be leaders in their areas. They spoke to the group about how they got to where they are today, who their mentors were, and what obstacles they had encountered and overcome in their lives. These Spotlight Speakers ranged from GS-4 to GS-15.
- A 2-hour training session presented by a professional trainer on the topic(s) of the day.
- Practical exercises that reinforced the concepts learned. The exercises were developed by the Leadership Team and used real-life situations that WFLHD employees face today.

As the course progressed, small support groups were formed. These groups met between sessions and discussed problems and provided support to each other.

The first Coaching for Excellence class graduated June 2, 1995. Did the program accomplish what we hoped for? We think so. See the next article written by one of the recent graduates. Is this program perfect? Absolutely not. If we had it to do over again, would we? Absolutely yes. In fact, plans are currently underway for recruiting the second leadership class, called Coaching for Excellence II.

My Experience in "Coaching for Excellence"

by Wendy K. Haney

It all started in May 1994. I walked into work and found balloons spread throughout the building and a packet sitting on my desk announcing a kick-off meeting for the new leadership program called Coaching for Excellence. At the time, I was not interested in joining any more teams or anything that required sitting in more meetings than necessary. However, I was impressed with the effort that my peers had put forth to pique my curiosity, so I attended. By the time I left, I had an application in hand and was headed to my desk to fill it out. Yes, we had to fill out an application. I can remember thinking I did not have much of a chance of being accepted, since there were probably a few GS-12's and people who held much more status in the office than I did who would apply. But, they asked everyone to apply so I did. I received a letter saying that I had been accepted and that's where the journey began.

When I applied for Coaching for Excellence Leadership Program I knew I committed myself to 72 hours of training. That is a lot of time! It was a lot of time to constantly push myself to new limits and get out of my comfort zone. For me, it was a hands-on workshop where I got to practice new skills every month. We had speakers on various topics. Then, we practiced what we had learned using real WFLHD problems. During the practice sessions, we had the opportunity to work with people in our office that we wouldn't normally get the chance to work with. They say that practice makes perfect. I don't know if any of us are quite perfect (yet) but we are that much closer now than when we started the program.

We had 30 people in our group. We had a great cross-section of the office, and an even greater variety of personality styles. We learned about our own personality types, and we learned how to work better with other personality types in our office. I believe that this awareness helps us function and communicate better. What's more, now I have contacts with other parts of the office and am able to seek out more information when I need it. We now have some tools to function more effectively with people who are different from us, either in work type or personality style.

A few people have asked me, "What exactly did you produce in Coaching for Excellence?" My answer is this. We didn't produce something tangible where we could say, "This is what our Coaching for Excellence group did; we hope you all enjoy it." The end product is not something you can put your hands on. Rather it is within us. We spent nine months working on tools that helped us bring synergy to our work place, be more accountable, have vision, and be developed, well-rounded employees.

There is too often a tendency to overlook the human element of our work. Coaching for Excellence has given me the tools and means necessary to function in the mixed environment of technical, political, and interactive demands that we face today.

Just one more note -- This program was not for everyone. We had people who got a lot out of it and it showed; and we had people who didn't care for it at all. This course constantly pushed my comfort zone. We had some tough times to get through and some times that were very uncomfortable. Looking back I think that one of the goals of this leadership course was to help us become forward-thinking, and we learned that through the process of struggling.

What can we do today to make our future better? At the eighth month, our class voted on whether we felt we got enough out of the program to have another one next year. Our group overwhelmingly voted to continue the class in 95/96.

I volunteered to be on the new leadership committee to plan the next program. In fact, the new leadership committee consists of graduates from the first Coaching for Excellence Program. We're looking forward to applying some of the skills we learned in the first program and starting a new journey with 30 new people.

WFLHD/Region 10 Geotechnical Resource Sharing

The Western FLH office in Vancouver, Washington and the Federal Highway Administration (FHWA) Region 10 office in Portland, Oregon are participating in a pilot program on Geotechnical Resource Sharing. This "Geopilot" is scheduled to run from December 1994 through September 30, 1995 and is an extension of the Western Regions' (Federa-aid Regions 6-10) geotechnical resource sharing pilot program. The

WFLHD/Region 10 combined "Geoteam" is comprised of the following individuals: WFLHD Geotech team members Al Kilian, Rich Barrows, Kerry Cook, Craig Dewey, Dave Lofgren, Bob Beck and Jeri Sooter; and Region 10 member Ron Chassie.

The WFLHD/Region 10 Geopilot has been undertaken to assess the feasibility and benefits of technical cross-sharing between FLH and Federal-aid offices. While Ron has informally assisted the WFLHD geotechnical engineers (Geotechs, for short) on numerous projects during the past 20 years, the Geopilot has placed increased emphasis on geotechnical cross-sharing between the two offices, to include WFLHD Geotechs providing technical assistance on Federal-aid projects.

During the first half of the pilot, the Team has accomplished an impressive amount of technical exchange, in spite of the heavy work loads of the team members. The technical exchange was accomplished by doing cross sharing on short-time-frame (e.g., one day to one week) technical assistance requests such as project peer reviews and geotechnical design assistance, and by working together on technology development/technology transfer activities.

Examples of cross-sharing to date include: (1) WFLHD Geoteam members assisting Ron on the FHWA Soil Nail Demonstration Project, DP103, and responding to technical assistance requests on Federal-aid projects; (2) Rich substituting for Ron on DP103 technical assistance to North Carolina and on a "Geogrid" (TM) foundation reinforcement design to repair a embankment foundation failure on Idaho project; (3) Dave providing technical assistance on Rockfall mitigation projects in Washington and Arizona; (4) Ron providing assistance on the design of soil nail walls on two WFL and one CFL projects; (5) Ron becoming a member of the WFL Technology Development Team; (6) Al providing technical assistance to Washington DOT on drilled shafts and to the National Park Service on tieback wall design; (7) Craig and Rich making presentations to graduate student class at Portland State University; (8) Al and Ron making presentations at the Region 10 Engineers Conference; (9) Dave and Ron making presentations at the Southwest Geotechnical Conference; (10) Craig and Ron working together organizing agenda for upcoming Northwest Geotechnical Workshop; and (11) The undertaking of a major technology development effort to implement the use of Micropiles on FLH and Federal-aid Projects through the formation of a nationwide, 15-member joint Federal Lands/Federal-aid implementation team. Kerry is team leader and Al and Ron are team members.

During May 1995, the WFL Geotech team (including Ron Chassie) became one of five groups within WFLHD that are piloting self-managed teams. To date, a vision statement and roles and responsibilities for the team have been defined. The next two or three monthly work sessions will define mission statements and performance measures.

At this time, it appears that the geotechnical resource sharing pilot program between Region 10 and the Geotechs of WFLHD is at least "Successful", as evidenced by the above list of technical cross-sharing activities which have been accomplished in just the last six months. WFLHD has a group of talented, experienced geotechnical personnel who have much to offer. As word of the partnership between Ron and the WFLHD gets out to the States, the demand for WFLHD's geotechnical services will increase. The challenge ahead will be to strike the proper balance between time demands and available resources. A final decision on whether or not to continue the Geopilot will be made at the end of the pilot period, September 1995.

Tell Me More About SMT'S

Prepared by EFLHD (Location's SELF-MANAGED TEAM members) Richard E. McDaniel, John Seabrook, Bob Beucler

There may be many interpretations about what a Self-Managed Team (SMT) is, but there can be no doubt that it has to focus on the organization's Vision, Mission, and Values.

As team members, we established the team's guidelines. These guidelines were set up so the team understands what each member's responsibilities are as a Project Leader and also as a team member. Listed below are the SMT guidelines for the Location SMT.

Paul Schneider, Location Engineer is the supervisor and coach. As such, he:

- Assigns projects to the team,
- Approves all leave,
- Relays scoping field trip information to entire team,
- Completes performance ratings for individual work (with Greg Dolson, Project Development Engineer signing off as second level supervisor), and

- Completes team performance ratings using input from the Project Managers (with the Project Development Engineer signing off as the second level supervisor.

Each team member will serve as a Project Leader and will:

- Be responsible for the Program Resource and Monitoring System and Cost Tracking,
- Coordinate projects with consensus from team members,

The team itself will:

- Reach consensus on conceptual and technical issues,
- Meet project schedules,
- Discuss projects and schedules at weekly SMT meetings, and
- Keep the Location Engineer updated for monthly status meetings.

With the guidelines established and reviewed on a regular basis, the team has set a format in which it is to function. We would like to note that there are two areas that are particularly important: 1) The team is responsible for the project schedules and cost tracking, and 2) the team reaches consensus to resolve any design issues.

Measurement of the teams performance includes comparison of actual and planned cost and time.

During weekly team meetings the team discusses technical problems and or scheduling concerns. This takes on new meaning since the team itself is responsible for project schedules. At the end of our team meetings, which last about 1 to 2 hours, we open the meeting to any comments on how the team members believe the team is functioning. The comments are discussed and recorded in our meeting minutes. A copy of the meeting minutes go to the Location Engineer. Here are some recent comments from our team:

We like the weekly meetings. We feel that a once a week team meeting is a proper spacing at this time.

We think the meetings run long but that all the information is necessary. Next week the team will individually prepare what they want to discuss before we start our meeting.

Team review of projects has been beneficial to focus direction of work and improve plan quality and completeness.

Design alternative discussion on projects including all team members has resulted in a good plan to solve a critical design requirement.

The team needs to review the team charter to determine if its up to date and valid.

It was noted in the challenge of meeting imposed scheduling, having additional self-managed team responsibilities (like typing this team meeting minutes) takes up valuable design time and interrupts design train of thought.

PRMS is time consuming to the team but it seems to be the only way to do this. It is important that the project leader know the PRMS process and his or her schedule. We suggest that we meet with the location Engineer just after we complete our updates to present and discuss our recommendations.

The team needs to be focused on the project schedules.

We hope you have found this article to be informative. Just think, soon you too may be part of a SMT.

Customer Service vs Customer Satisfaction

by Phyllis Chun, WFL

Why is Customer *Satisfaction* better than Customer *Service*? Think of your response this way -- if a waiter walked to your restaurant table and announced, "You had a great dinner!" You would probably be a little surprised because you expect a waiter ask, "How was your dinner?" As a customer, you expect the service provider to let you decide how satisfied you are, rather than tell you what he or she thinks.

What, then, is the difference between customer service and customer satisfaction? Customer service is provider-defined (the person providing the service determines what is needed). Customer satisfaction is customer-defined (the person receiving the service determines whether it was great) (from *Customer Satisfaction: The Other Half of Your Job* by Dru Scott, Ph.D.)

Don't stop at customer service (your opinion of what is good service). Go beyond service to customer satisfaction (your customers' opinion of what is great service).

One of the biggest reasons that people do not provide customer satisfaction is that they do not have adequate information about what the customer really wants.

One solution is to get feedback from the customer.

How does one go about getting customer feedback? One method is through customer surveys.

Customer Surveys

There are many definitions of "quality", but most of them include in some form the concept of meeting customer needs and expectations. It is important to find out what the customer really wants. The most obvious, and the best way to get this information is to ask the customer.

Whenever you solicit information from a customer, you are conducting a customer survey. There are many ways to conduct customer surveys:

Customer Satisfaction Survey Results

The final report on customer satisfaction for FY 1994 completed projects shows that the National Park Service and the U.S. Forest Service are extremely pleased with FLH design and construction work. Overall, 97% of the respondents indicated they would use FLH again for project development and 94% indicated that FLH met their overall quality expectations for completed construction projects.

[Yes, customers do have a choice! Customers use FLH because they know it has a unique perspective coupled with a level of excellence which cannot be found in private architect/engineer firms.]

Informal surveys - This may mean just asking customers at every reasonable opportunity for feedback and suggestions. This type of survey may provide useful information, but cannot be depended upon as the sole source of information because the customers you have the opportunity to talk to may not be representative of all of your customers. In addition, since questions asked are not planned in advance, they may be unintentionally biased, or may not provide complete information. Finally, some people do not like to be critical in face to face meetings, so the results may not reflect actual perceptions.

Haphazard surveys This is where the customer chooses to be sampled. Haphazard surveys might consist of comment cards or unsolicited letters or phone calls from customers. This kind of feedback should not be ignored, but it may not be representative of all customers. People who take the initiative to contact a service provider usually have strong feelings -- either positive or negative. People with negative opinions are far more likely to speak up than those who are satisfied with the service.

Formal surveys - These are important so that customers' opinions are obtained in an orderly way and we get a representative sample of our customers' opinions on the most important issues. When using

formal surveys, the people to be surveyed are selected according to a definite plan, and the questions that are asked are developed in advance and are carefully worded to avoid bias and ambiguity.

Planning the Survey - There are several factors to consider before writing the questions in the survey. Questions like the ones listed below should be considered.

- What is the purpose of the survey?
- What question(s) are we trying to obtain answers to?
- What data needs to be collected to answer the question?
- Who will use the data we collect, and how?

Keep these questions in mind when developing your survey. Don't ask questions whose answers are interesting but not necessary to the primary purpose of the survey.

Is the information needed already available? Make sure the information you ask for has not already be collected in some other form. Check previous surveys and other information that is readily available before asking people to answer questions.

How will the information be obtained? Two common methods are face to face interviews, and written questionnaires. Each method has advantages and disadvantages. Face to face interviews often provide a higher percentage of returns and more detailed answers, but they take more time and the interviewer may inadvertently distort the responses or record data inaccurately. Written questionnaires have relatively low cost, can assure anonymity, and give the respondent more time to consider their answer. They also have a lower return rate and answers tend to be brief and superficial.

Either of these procedures may be appropriate, depending on the kind information you are trying to obtain and the resources (e.g. time and money) that you have available at the time.

Developing the Survey and Selecting the Right Questions

There are basically two types of questions in a survey -- **open ended questions** which require a narrative response (e.g. "What do you think of ..., or "How can we improve..., etc.), and questions where respondents have **multiple choices** (e.g. "yes/no", or a five part scale such as "strongly agree/tend to agree/neither agree nor disagree; tend to disagree; and strongly disagree", etc.)

Open ended questions give respondents latitude in making their responses and often yield information the survey designer has not thought of. Multiple choice questions are easier and faster to complete. It is usually good to include both kinds of questions.

Consider also the following aspects when developing questions:

Length of survey - The percentage of questionnaires returned decreases as the number of pages increases from 1 to 10. Keep the questionnaire as short as possible to obtain the needed information.

Define key terms - Use language that the respondents will understand. Do not assume people answering the questions will understand the question in your intended frame of reference. There should not be too many definitions, and the definitions should not be long or complicated. The definitions can be grouped together at the beginning of the questionnaire, or close to the questions they apply to.

Designing the questionnaire - Remember the purpose of the survey. Ask only questions that provide data you need.

- Use simple words
- Use <u>underline</u> or **boldface** type for emphasis
- Make questions concise and unambiguous
- Cover only one point per question
- Avoid wording questions in such a way as to suggest the answers
- Avoid words such as "always" or "any", "about" or "near", "possible" and "should"
- Keep asking "What am I assuming or taking for granted by this question?"

Put the questions in logical order. Start with a question that can be answered easily (if the first question is too difficult, respondents may not continue the questionnaire). Group questions that logically go together. Consider the order of questions at three levels: 1) topics covered by the questionnaire; 2) questions under each topic; and 3) questions that require similar types of responses/use the same scale. Once a train of thought has been established, try not to break that sequence.

Pre-test the questions on several people who were not involved in preparing them.

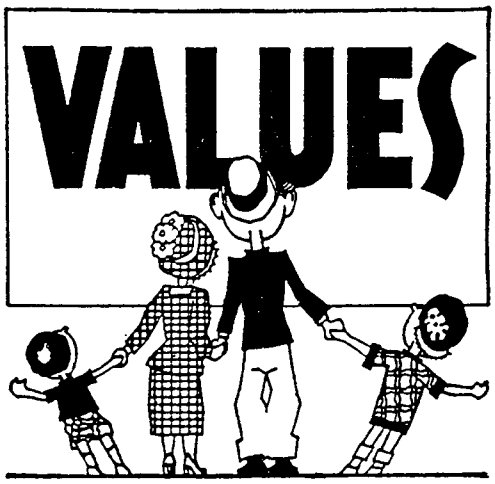
Make the questionnaire attractive. Consider pictures, spacing and type. It should look easy to complete by requiring little writing by the respondent and/or arranging the questions so that the questionnaire does not appear crowded. Yellow and pink paper have the highest percentage of returns; dark colored questionnaires usually are not effective.

Obtaining the Information for the Survey

Information can be obtained by personal interviews or through written questionnaires. Regardless of which method you choose, it is helpful to consider the following:

Choose an opportune time for getting the information. Be aware of peak workload periods, holidays, etc. Choose the time you have the best chance of getting a good response.

- Explain the purpose of the survey and how the information obtained will be used (e.g. to improve processes, for performance appraisal purposes, to evaluate the effect of change, etc.)
- Consider making survey results available to respondents.
- Thank the respondent for providing feedback.



by Mark Chatfield

The highest scoring category on the Federal Lands Highway annual cultural survey is "Values and Ethics." Employees see and appreciate their organization's values. Officially, the FLH values are documented as "Guiding Principles" published by the Program Administrator in a February 10, 1992 memorandum to all employees as part of the plan for implementing total quality management. There are six of them:

- Customer Satisfaction,
- Teamwork,
- Employee Commitment,
- Communication,
- Excellence, and
- Integrity.

Each one of these values can be thought of as a check point for the decisions you and I make. We can use the list to see how much of our day-to-day work meets these guiding principles.

The official policy of Federal Lands Highway regarding these values has been transformed into a self-assessment on the next page. Make copies of the page. Use it to rate yourself and track progress over several months. Try rating a project, decision, or the last work period. If you are a supervisor or team coach, consider how your employees or team members would rate.

FLH Values Assessment

Scoring (0 to 10): 0 - Never or None; 10 - Absolutely all the time or Completely [Leave it blank if it does not apply to a particular situation]

This assessment applies to (select one):

__ Area of Work _____

__ Myself __ My Team __ My Branch

__ My Division __ Other: _____

To what degree do I(we) ...

CUSTOMER SATISFACTION

- ☐ Know the customers, internal and external.
- ☐ Understand customer needs and expectations.
- ☐ Respond to customers in a thoughtful, courteous, professional, and timely manner.
- ☐ Contribute to the success of customers.
- ☐ Monitor and evaluate performance against customer standards and expectations.

EMPLOYEE COMMITMENT

- ☐ Attract and retain capable, loyal, and dedicated people.
- ☐ Have concern for the work environment.
- ☐ Provide the opportunity for development and advancement of a highly skilled and trained work force.
- ☐ Recognize employee achievement.
- ☐ Respect employees' opinions and ideas.

TEAMWORK

- ☐ Foster teamwork.
- ☐ Consider everyone's contribution important.
- ☐ Treat others with trust and respect.
- ☐ Support open and participatory involvement.

EXCELLENCE

- ☐ Constantly look for ways to solve problems, prevent errors, and make improvements.
- ☐ Accept change as inevitable and meet the challenge of change with innovation and positive action.
- ☐ Use and promote state-of-the-art technology in our processes and products.
- ☐ Strive for quality at every level in all facets of our work.
- ☐ Do the right thing right the first time.
- ☐ Avoid problems through early and continuous planning.
- ☐ Willingly take calculated risks.

COMMUNICATION

- ☐ Anticipate and initiate communication to achieve early understanding.
- ☐ Clearly communicate goals and objectives.
- ☐ Clearly identify responsibilities.
- ☐ Develop effective feedback systems to evaluate performance.
- ☐ Publicize accomplishments and stewardship.

INTEGRITY

- ☐ Conduct business with honesty, trust and respect.
- ☐ Conform to social, economic, and environmental laws, policies, and regulations.
- ☐ Avoid even the perception of misconduct or conflict of interest.

_____ **Total**

Scoring key:

[240 - 290 A 190 - 239 B 140 - 189 C 90 - 139 D]

Workplace 2000

Jim Hall's Streamlining Taskforce is referencing the book, *Workplace 2000*. For those who don't have ready access to it, here are some highlights:

Pages 239-249 on self-managed teams:

- Adopt work-unit teams or something between work-unit teams and self-managed teams as the first step.
- Be on the lookout for "supervisory depression" where supervisors say, "that's the team's problem, not my problem."
- Plan on "evolving" to self-managed teams. If there ever was a need to plan ahead and train managers, leaders, and team members, it is now -- before jumping into 100% self-managed teams.

Starting on page 144 discussing leadership:

- Managing is a minor part of what leaders do.
- Managers have employees. Leaders have followers.
- Managers are analytical and convergent. Leaders are intuitive and divergent.
- Managers emphasize the rational and tangible. Leaders emphasize intangibles such as vision, values, motivation.
- Leaders not only have a deeply motivating vision, but they also are apt to communicate it.
- Leaders build trust.

Chapter 2 on structure and culture:

- The size of an organization influences its agility and customer responsiveness.
- Technology is rapidly depreciating the effect of geographic boundaries.
- Micro-businesses and profit centers can enhance overall performance.
- Performance related to results and accomplishment will be of more importance than levels of activity or behavior.

Excellence in Assisting International Programs

FLH Program Administrator Tom Edick wrote a memo dated June 12, 1995 to Eastern Division Engineer Gary Klinedinst:

"On June 8, Greg Dolson assisted the International Programs Office by coordinating and providing information and briefings to two Russian Federal Highway Department project managers. On behalf of the Russian delegation and International Programs Division, I would like to thank EFL for all the efforts that went into coordinating the briefings, and for the excellent preparation and presentations by EFL staff.

"The Russian delegation, Mr. Boris Nekrassov and Oleg Matveenko, was pleased to have visited the EFL Sterling facilities and to be hosted by the EFL staff. They personally expressed their appreciation to me for the briefings, discussions, and information.

"I would like to personally thank Greg Dolson for coordinating and providing the introduction to EFL's organization and staffing, Alan Teikari for his remarks on the functions and processes of the Planning and Coordination branch, Dan VanGilder for coordinating A/V demonstrations and introduction to the EFL mapping, CADD and bidding/estimating programs, and Walter Juras for translation and personal assistance during the briefings. The briefings lasted until after 5:00 p.m. Lastly, I wish to thank you and others for making EFL available and for assisting with this opportunity."

What's It Worth To Implement A Team-Based Organization?

by Mark Chatfield

What is it that keeps me coming back after 50 years of ups and downs, successes and failures, praise and abuse?

After more than a few moments of reflection, I've discovered that a primary motivating force in my life is *improvement*. When I begin thinking that things are going to get worse or just stay the same ... if I don't think that somehow things are going to be better, I lapse into depression, introspection, idleness, bitterness, and ultimately poor health.

Its more than a "TQM" thing. Its more than a "learning organization" philosophy. *Improvement*, I believe, is a life force.

If that is true, and I accept it as so, then the key to my ability to perform at work, at play, in my family, or even spiritually is to have some indication that I'm getting better.

So you can tell me, Honorable Congressman, that my organization must have performance measures before you will give it any money. You can tell me, Mr. President, that FLH must have a customer service plan by September 1. You can tell me, Executive Quality Council, that FLH will move to a team-based organization. I believe all these are good ideas, but until I have a way to tell if things are getting better, I will lack a very basic motivation.

How can I have a way of telling if things are getting better?

- Identify what's important.
- Figure out a way to measure it or at least guess at it.
- Predict what it would be if nothing changed.
- Change things.
- See if the predicted measure was improved upon.

This is not rocket science. I suppose it is classic TQM -- it looks sort of like the Deming wheel or the Shewhart cycle of Plan-Do-Check-Act. Maybe it is just natural common sense. Lindsey, my 8-month old granddaughter is doing it when she surprises herself by turning over and finding herself closer to Zowie, her favorite stuffed toy. Mark Sr., my 84 year-old father is doing it by adjusting his insulin injections to optimize the way he feels after eating and exercising.

Now FLH is getting a consultant to help it move more toward a team-based organization. In one of my frequent tactless moments, I told my boss that we shouldn't do things just because it seems like a good idea -- we should document what we expect to see improve. Not a "cost-benefit" analysis, per se; but at least a narrative discussion of what should improve. If possible, we should have an auditable way to see if there really was a payoff for undertaking this new and somewhat costly initiative.

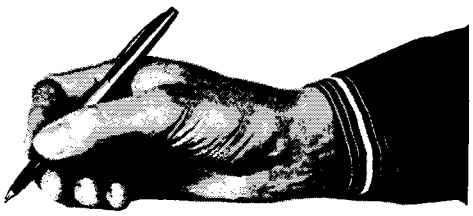
With a few reasonable assumptions, I developed an analysis of costs, return value, and the time involved in recovering the costs through benefits. Costs include money, employees' time, and loss of productivity during the transition over an 18-month implementation period. Return value includes reduction in re-work and improvements in delivery time. These improvements should add up quickly once the teams are in place and operating. For example, every day we can save delivering projects to FLH customers is worth at least $600,000. There should be auditable results showing that the cost of moving to business-oriented self-managed teams will be offset by benefits within two years after full implementation.

That may not be sufficient to show me that my whole life or career is worthwhile, but it sure gives me the motivation to pursue something that has documented improvement potential. A team-based organization has that.

TQM for Saudi Arabia

The Office of the Secretary of Transportation has asked Federal Lands Highway to help develop and present a Total Quality Management (TQM)-focused program for professionals from the Saudi Ministry of Communications. Headquarters and the Eastern Division will be providing training and on-the-job exposure to quality-related efforts in FLH during August and

September. The visiting officials will receive a one-day overview on the subject from the FLH perspective. They will also be invited to any team meetings, action planning sessions, process action team or quality action team meetings, partnering sessions, or other business which would help them understand how to take the philosophy and put it into action.



Customer Feedback - The Positive Kind

FLH Program Administrator Tom Edick recently shared one example of the positive customer feedback the agency received. In a note to Federal Highway Administrator Rodney Slater, Deputy Administrator Jane Garvey, and Executive Director Tony Kane, he said, "Frequently we get expressions of appreciation from our partners. To counter some of the more recent negatives, I thought it would be okay to share some positive news. Attached is a recent letter of appreciation from the Zion National Park Superintendent to the Central Federal Lands Highway Division for its responsive assistance in restoring the only access to the park after a major catastrophic event. The communities reported they were losing up to $1 million for each day the road was closed. The "day" was saved thanks to the Central Division.

A similar situation is facing Glacier National Park after storm damage closed off every major road on the eastern side of the park over the June 10-11 weekend. The Western Federal Lands Division had engineers on sight over the same weekend even before the storm subsided, and had contractors performing emergency work within a couple of days. They continue to work almost around the clock to restore traffic so the park can reopen." The text of the May 23 letter from the National Park Service follows:

"I can hardly believe it! The night of April 12, 1995 I was informed a major landslide had blocked the North Fork of the Virgin River in Zion Canyon. Arriving on site, I realized the immensity of this landslide. The river channel had been completely filled in and the flow downstream of the slide had been stopped completely.

"While we were involved in emergency evacuation of the campgrounds and notification of others who might be impacted by a sudden flood, the river was quickly backing up behind the slide. Instead of a flash flood, the impounded water flowed along the road, destroying approximately 200 yards of roadway and the buried water, sewer, power, and telephone lines, stranding some 450 people at the lodge and isolating the water supply serving the park headquarters complex and the Town of Springdale.

"Among the first to arrive the next day was a Federal Highway Engineer Dick Gillette -- who assisted in providing a quick engineering assessment. It wasn't long after that other Federal Highway support staff arrived. Emergency Relief Coordinator Kay Hymas, Design Team Leader Eric Worrell, and Construction Coordinator Bill Dixon arranged for immediate consulting assistance and helped initiate the phase I construction work.

"Since this park plays such a key role in tourism, the economic impacts of the surrounding region by the closure of this road are profound. Accordingly, a very short time frame was established to effect repairs to allow the upper canyon to be opened for visitor use. We initially established a date of May 30, 1995 for this road to be opened and later adjusted it to May 27, 1995 in order to meet the Memorial Day weekend time frame.

"As the finishing touches are being placed on this Phase I project, I can now believe the road will be open as requested. This could not have happened without the superior efforts of your team. In addition to those already mentioned, I want to especially commend the contractor, Mendez Excavating and your on-site representative Denny Bowes who guided this effort to such a successful completion.

"Your efforts have truly been exemplary, and we look forward to working with you as we design and complete the Phase II work. Keep up the great work.

Sincerely,

Donald A. Falvey,

Superintendent"

Customer Service Plan

President Clinton signed an executive order on September 11, 1993 which called for Government departments and agencies to develop customer service standards, surveys, and plans. Although FLH has been operating under a formal policy which calls for customer focus and has been making significant progress on several fronts survey and plan for customer service, until recently there has been no formal documented "customer service plan."

The draft FLH Customer Service Plan brochure has been through several drafts and is now being printed. There will be an attractive photo and slots to include a personal business card on the cover of a tri-fold, two-color brochure. The text will provide some overview information about the FLH organization, its mission, customers, products, services, and achievements. This will be followed by a customer service commitment which is to state:

"This customer service plan is a commitment by the Federal Lands Highway organization. The commitment is to serve customers. It applies to every person, team, or other organizational element that represents Federal Lands Highway offices, from the Program Administrator to all Government and contract employees. The service standard is defined by the customer, not by the Federal Lands Highway Office.

"The Federal Lands Highway organization guarantees exceptional service to its customers. If any customer does not receive what they consider to be acceptable service, upon notification of an FLH representative, will receive:

1. prompt attention to identify and mitigate the problem,

2. an explanation of the changes which will be made to correct the problem,

3. a commitment to better future service.

"Any customer who still believes service has not met their expectations may contact the appropriate Division Engineer or Division Chief. The Division Engineer/Chief or designee will contact the customer immediately to acknowledge receipt of the concern. Appropriate corrective action will be taken within an agreed time frame. Any customer who is not satisfied after this may contact the Federal Lands Highway Program Administrator for final resolution."

Recommended Reading

Libraries

Each Federal Lands Highway Division and Headquarters maintains a library of books, pamphlets, conference proceedings, video tapes, audio tapes, and other materials related to quality. See your coordinator for information.

Books

Workplace 2000-The Revolution Reshaping American Business, Joseph H. Boyett and Henry P. Conn, First Plume Printing, May 1992

Handbook for Productivity Measurement and Improvement, William F. Christopher, ed., Carl G. Thor, ed., Productivy Press, 1993.

Empowered Teams - Creating Self-directed Work Groups that Improve Quality, Productivity, and Participation, Wellins, Byham, and Wilson, Jossey-Bass Publishers, 1991

Information Sources

Federal Quality Institute

The Federal Quality Institute, P.O. Box 99, Washington, DC 20044-0099 provides quality management services to all Federal Agencies. Subscribe to the Federal Quality News by FAX 202-376-3765.

Conferences and Courses

The American Society of Quality Control (ASQC) may be reached at (800)248-1946. The Total Employee Involvement (TEI) Institute may be reached at (800)966-5423. The Association for Quality and Productivity may be reached at (800)733-3310. All three have superior conference and training courses.

Miscellaneous

Brochure

TQM in FLH, an attractive brochure describes our Vision, Mission, Guiding Principles as well as our organization. Your FLH Division Office has copies.

Team Guidelines

The popular book, **Federal Lands Highway Team Manual** is available from the Division Quality Coordinator. Additional copies may be obtained by calling Headquarters, 366-9492.

Training Opportunities

Training in all aspects of TQM is available from many sources, internal and external. See your Quality Coordinator for ideas and to help you make arrangements.

Performance Management

FLH measures overall performance, surveys employees and obtains feedback from customers to let them drive the organization. If you would like to receive information about how this is done, contact your Division Quality Coordinator.

Strategic Business Planning

Integrating quality and strategic business planning is HARD work. Federal Lands Highway has direct experience to share. Contact Mark Chatfield, HFL-1, 202-366-9492.

Volume VI Issue 4 Federal Lands Highway Fall 1995

FLH QUALITY NEWS

U.S. Department of Transportation
Federal Highway Administration

400 7th St., SW Washington, DC 20590 (202)366-9492

Are Process Management Teams Worth the Cost and Effort?

by: George A. Parson

Surveys and Mapping Coordinator, Western Federal Lands Highway Division (WFLHD)

WFLHD's Survey and Mapping Process Management Team completed its last session on May 11, 1993. That wasn't the end -- it was more like the beginning. The team had identified lists of:

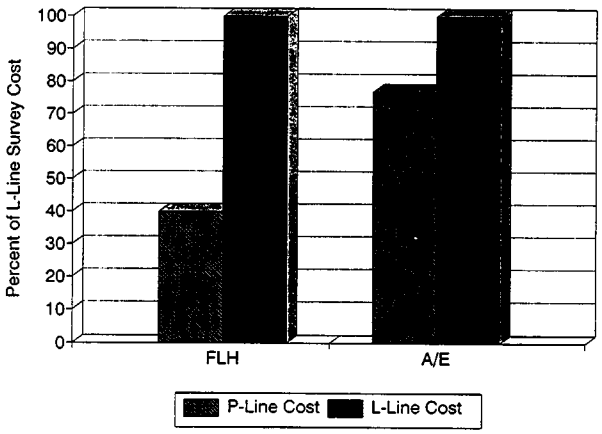
- Short Term Improvements,
- Long Term Improvements, and
- Key Process Measures.

Since then, Survey and Mapping employees have implemented the Short and Long Term Improvements. They also have been collecting data for the measures. The data is graphically plotted, analyzed, and summarized quarterly. This all is supplemented by customer feedback using a formal yearly customer survey.

When analyzing the data, one thing particularly stood out. The Architect/Engineer (A/E) contract costs per mile for preliminary line (P-line) and design line (L-line) surveys were out of proportion when compared to the similar costs for WFLHD crews. WFLHD's P-line cost was 60% less than its L-line cost. The A/E contract P-line cost was only 23% less than its L-line cost. The team had found significant variation; and where there is variation, there is waste.

> *"The team had found significant variation; and where there is variation, there is waste."*

Survey Cost Variation



In order to focus on and minimize this variation, we went to work with the A/E contractors and our own crews to develop a modified single pass survey. Without getting too much into the details, let's just say we have been able to use this method on some projects where there are no alignment changes or just minor changes

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Publication No. FHWA-FLP 96-002

FLH QUALITY NEWS
Volume VI, Issue 4
Fall 1995
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The FLH QUALITY NEWS is an official publication of the Federal Lands Highway Office, Federal Highway Administration, U.S. Department of Transportation. It is published several times a year for educational purposes to promote quality principles among FLH's and other organizations' employees, managers, and supervisors.

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from the existing road. We are able to compute the curvilinear alignment that fits the road using ties to the existing roadway and Computer Aided Design and Drafting (CADD) software. Then, without any other steps, the final design line is staked right after the Project Manager approves it. This eliminates one entry (the P-line) for the survey crew on the project.

Eliminating the extra work saves time and money. Based on the data collected for the A/E contract and WFLHD's cost, this computes to a savings of $588,000 for four projects in the last two years. This means that these funds are available to help alleviate other critical FLH Program needs. One of the overall FLH organizational performance targets is to increase the percentage of FLH funds which result in actual roadway on the ground. This team's work contributes directly to that overall target.

As an added benefit, a customer survey is helping FLH to produce products and services that better meet our customers' needs and expectations. We picked the three lowest scores in order to focus improvement efforts: property ties, culture, and right-of-way.

The next customer survey showed that we successfully improved all three areas. The combined score for the thirteen questions on the customer survey also showed an overall 3% improvement. This means that we are improving customer satisfaction while making our processes more efficient.

I'm confident that, as we continue to collect data, we will find other areas where we can reduce cost and improve our customer satisfaction in our Survey and Mapping services. WFLHD's Survey and Mapping Process Management Team definitely has helped the Survey and Mapping Unit in its continuous improvement toward excellence.

The cost and effort are worth it!

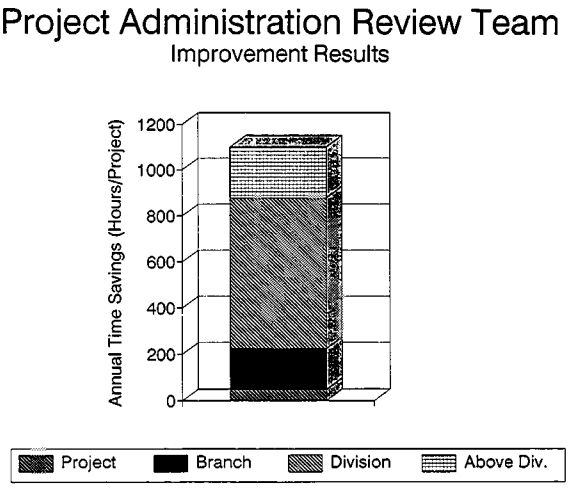
Project Administration Review Team (PART)

by: Elaine M. Davis

A Project Administration Review Team (PART) was formed in the Western Federal Lands Construction Branch in February 1995. The team's sponsor was Tom Hildreth, Construction Engineer. The objective in forming the team was to reduce the amount of field construction project administration paperwork, so the

staff could spend more time on the project itself. Tom asked the team to do three things:

- look at all the project administration tasks which occur on a construction project from beginning to end,
- determine why the task is performed and who/what requires it, and
- decide if the task could be eliminated or streamlined.



The team members were Bob Miller and Dale Lewis, Project Engineers, and Elaine Davis, Staff Assistant. Fortunately, we were able to take advantage of work performed previously by the Construction Process Management Team (PMT). The PMT already had outlined the construction activities from beginning to end. We used its chart to develop our list of tasks. After we had identified all the tasks, we identified what action needed to be taken by the project staff. Then we asked, "Why?" If we could not come up with a good reason for doing a specific task, then we recommended eliminating it or streamlining it. We had a total of 144 tasks and 45 recommendations. Some recommendations applied to more than one task.

Here are some examples of the recommendations which the team made:

- **Use an Approved stamp on contractor submittal of schedules, accident prevention plans, etc., instead of writing a letter.**
- **Revise the current random number program and put a random number subroutine in the next version of QL-PAY (project accounting software).**
- **Keep project diaries in the field and send them in at completion of the project instead of making copies to send in continuously throughout the project.**
- **Eliminate or reduce the number of material certifications required for projects.**
- **Eliminate the overtime authorization form, since a signature on the payroll already indicates approval of those hours.**
- **Purchase mail meters for the field offices.**

After coming up with the list of recommendations, we broke them down into four categories. The first group of changes could be implemented by project staff immediately. The second group included changes which could be implemented by the Construction Branch. Third were changes that could be made at the Division level. Finally, the fourth category included changes which needed to be made above the Division level.

The number of changes recommended in each category and the estimated savings of hours per project and annual work years are shown below:

Level	Savings(Hrs/Proj)	Ann. Wk Yrs
Project	47	0.56
Branch	178	2.14
Division	657	7.90
Above Division	224	2.69
Total	1,106	13.29

The team finished the report at the end of March 1995. The next step was to implement the recommended changes. The project and Branch changes were implemented through revisions to the Construction Manual. Changes at and above Division level were forwarded from the Construction Engineer to the Division Engineer and the appropriate Branch for action. The Construction Engineer is tracking the items which have been completed and following up on pending issues.

As of early August, 28 changes have been implemented for a savings of 306 hours per project or 3.7 work years annually. Three more recommendations currently are being worked on with an estimated savings of 549 hours per project or 6.6 work years annually. Ten more

recommendations currently are pending and have a good chance of being implemented. Only three recommendations have been deemed unacceptable, but those three amount to only 35 hours per project or less than 0.5 annual work years. After all recommendations are implemented, we expect to save approximately 11 annual work years in project administration and construction management. This is time that can be devoted to assuring that other actions are done with greater effectiveness.

Partnering Update

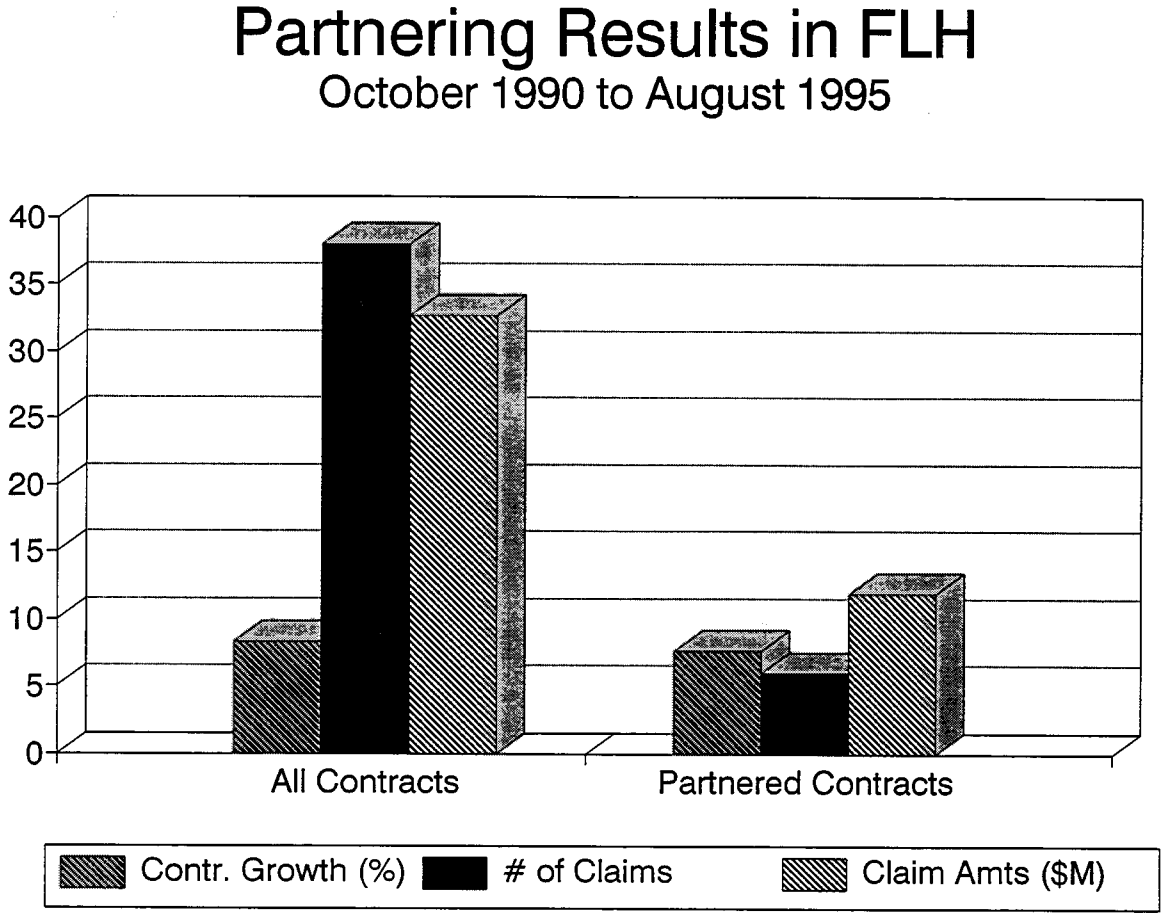
How Team-Based Construction Improves Efficiency

by: Bill Cross, HFL-22

In 1996 Federal Lands will reach a major kilometer stone. We will have initiated partnering agreements on more than $500 million worth of construction contracts. It seems hard to believe how successful this team-based program has been. The first two contracts partnered that began in the winter of 1991 perhaps were not disasters, but certainly were nothing to brag about. One ended up with a $6 million contract overrun and the other with a dysfunctional partnering team and a claim.

Since that ominous start we have initiated construction partnering on more than 70 contracts totaling more than $430 million. Fiscal Year 1995 has been the biggest year yet with (as of August 1) 24 new contracts totaling $149 million. Central Federal Lands has led the way with 14 of those contracts.

Federal Lands has received nationwide, even international recognition for its partnering program. In February Larry Smith was invited to co-present a paper on partnering at the International Conference on Productivity and Quality Research. In 1994 Tom Edick elicited gasps from the crowd at an Office of Management and Budget pledge ceremony on Alternative Disputes Resolution (ADR) when he pledged Federal Lands' entire Fiscal Year 1994 construction program for partnering. As a result of that pledge, Federal Lands was invited to send a representative to a Department of Defense conference on ADR at the Air University at Maxwell Air Force Base in the summer of 1994. Previous articles in the FLH Quality News (Summer 1994 and Spring 1995) continue to precipitate calls and inquiries from all over the country.



Partnering is using the principles of team building to jointly solve problems and resolve differences. But partnering is a special kind of team effort because the "partners" are traditional adversaries. In most contracts, including U.S. Government contracts as defined by the Federal Acquisition Regulation (FAR), each side has certain rights and responsibilities. As the contract progresses, interpreting and enforcing those rights and responsibilities often gives rise to differences in opinion which ultimately can result in disputes or even law suits. When a problem arises in a traditional contract, the Federal Acquisition Regulation (FAR) implies that it is either the Contractor's problem or the Government's problem. Partnering changes all that, not by overruling the FAR or Federal contract law, but by providing a framework within those legal constraints that permits a team-based framework for resolving the differences. Partners look at problems not as the responsibility of one or the other, but as the team's responsibility to be solved jointly. Partners have empathy for each other's hopes, fears, and objectives. Energy is directed at the successful completion of the project, rather than at posturing and disputes. In the end there is a synergy where the team is stronger and more productive than the cumulative strength of all of its members.

The results of partnering to date are very encouraging. In the nearly five year period since Fiscal Year 1991, Federal Lands received 38 claims on construction contracts, but only six of these claims were on partnered contracts, although more that half the work (in terms of dollars) was being partnered. Except for one very large claim on a Cumberland Gap contract which started out being partnered, claim amounts have been modest as compared to non-partnered contracts. As for contract growth, the Department of Defense reports this statistic as about the same on partnered and non-partnered contracts. But for Federal Lands contracts cost growth has, so far, been about 15 percent less on partnered vs. non-partnered contracts. This statistic suggests current savings of more than $1 million per year, with projected savings of nearly double that if we partner all "difficult" contracts. Two million dollars plowed back into asphalt, concrete, and other tangible program delivery items is nothing to sneeze at.

Partnering is a success story. But it also has been a precursor to Federal Lands' overall move to a team-based organization. Like other team-based concepts, partnering requires skills, training, and even attitudes which go beyond the technical skills many of us expected to be the foundation of our careers. Especially we ancient technical types never expected that "people" based skills like partnering would come to so dominate our lives. Certainly a salute is deserved by all of the construction and other personnel who have worked so hard to make partnering succeed.

Partnered vs. All Construction Contracts (as of 8/95)

Contract Awards FY91 to FY94	$674.4 million
Partnering Initiated Since FY91	$430.9 million
Percent Comparison*	64 percent
Contract Earnings FY91 to FY94	$612.4 million
Earnings on Partnered Contracts Since FY91	$323.8 million
Percent Comparison*	53 percent
Contract Growth (%) FY91 to FY94	8.3 percent
Contract Growth (%) on Partnered Contracts Since FY91	7.6 percent
Percent Comparison*	92 percent
Number of Claims since FY91	38 claims
Number of Claims on Partnered Contracts Since FY91	6 claims
Percent Comparison*	16 percent
Amount of Claims since FY91	$ 32.7 million
Amount of Claims on Partnered Contracts Since FY91	$ 11.9 million
Percent Comparison*	36 percent

* Partnered as a Percentage of All Construction Contracts

Baldrige Examiner Training

by: Mark Chatfield

Having friends is nice -- especially when they do you favors.

Rosalie Wilson used to be the Director of the Office of Personnel and Training in the Federal Highway Administration. Several years ago she took the opportunity to go on loan to the Federal Quality Institute (FQI).

She has been a tireless asset to FQI and has taken the additional initiative to become an Examiner for the

Malcolm Baldrige National Quality Award (MBNQA). Federal Lands Highway has learned a great deal through FQI and, more specifically, from Rosalie. She did me a personal favor by inviting me to take a two-day course for MBNQA Examiners. I accepted without realizing what I was getting into.

It's difficult to overstate the importance and prestige associated with the MBNQA. Organizations spend massive resources to institute quality and become more successful. The crowning achievement is to apply for and receive the MBNQA -- not to "win" an award, but to confirm their own accomplishment, learn to do even better, and, yes, to achieve a marketing advantage. By the way, you can tell whether a consultant is qualified by the way they spell "Malcolm Baldrige." Don't ever buy the services of anyone who misspells it as "Malcomb" or "Baldridge!"

The course was taught by one of the 45 Senior Baldrige Examiners, Ms. Tina Sung. Tina is a marvelous instructor with exceptional depth of understanding. It was only a few minutes into the session when I realized I was in a postgraduate level course. This was not TQM 101. It was more like Advanced Organizational Performance 795 for PhD candidates only. When the introductions were complete, I really knew I was in trouble. Not only had I spent a mere 20 hours in preparation where 40 uninterrupted hours were needed, but the people attending the course obviously had spent much more time and had more experience. It was humbling and frustrating to know that I was that far behind. The only two things that kept me there were the patience of the instructor and my fellow classmates and the fact that I knew this was going to be a premier learning experience for me.

Here are the top lessons learned, which can be applied in FLH:

- The MBNQA originally was set up for only the private sector. However, it has matured and become so widely respected that there is an intense effort to adapt it for the public sector. This means that, sooner or later, the President's Award for Quality will become more and more patterned after the MBNQA and it would behoove FLH to move in that direction soon.

- The American Society for Quality Control, with which each FLH Division and Headquarters has a sponsoring membership, is the prime contractor for administering the MBNQA.

- There are 9 MBNQA Judges, about 45 Senior Examiners, and about 210 Examiners. Of these, only five are Federal employees -- one of them is an Army General. When FLH Coordinators apply to become examiners, it cannot be taken lightly. It is a high-exposure, time consuming, intense effort to be trained and then to actually conduct examinations of applicants. Anyone who is accepted must dedicate four to six weeks entirely to this work.

- The MBNQA criterion has seven business-focused categories made up of 24 items in 54 areas. It is not "TQM" oriented but is "business-focussed" (the "TQM" term has become denigrated from misuse). FLH has tried to marry business and quality for years. We will increasingly focus on business and improvement more generically in order to avoid the misconception that we are pursuing a fad.

- Fifty percent of the emphasis is in two of the seven categories -- Customers and Business Results. Nine percent deals with the "driver" -- Leadership. Forty-one percent is related to the "system" -- Process Management, Human Resources, Strategic Planning, and Information and Analysis. We are not talking about implementing TQM in FLH. We are talking about improving work (business) and customer focus.

- Key characteristics of a mature organization include: prevention, not reaction; systematic, not anecdotal; multiple improvement cycles, not one-time projects; information, not data; employee involvement, not coercion; innovation, not stagnant procedures. For FLH, I believe our best maturing characteristics lie in the areas of information and having successful improvement cycles. The weaker areas include our inability to prevent problems and preclude waste.

- Themes of the MBNQA which were strengthened in 1995 were consistent with current emphasis areas in FLH -- Strategic Planning, Business Results, and High Performance Work Organizations.

If you have a chance to take Baldrige Examiner training, I would encourage it. It is not for the fainthearted, however. I did not have any idea how much I didn't know. My feelings of inadequacy were only overcome by the knowledge that I was learning more than anyone else in the class!

The Right Stuff

Measurements from a Performance Perspective

by: Jim Amenta, Eastern Division

The anxiety button in everyone goes off when you mention either measurement or performance at the work place. Mention both at the same time and employees tense up and their blood pressure goes into orbit.

Traditionally, employees associate the word "measurement" with monitoring work levels by management and the word "performance" with reward or punishment. For years management typically would set quotas and deadlines for the employees and then monitor their progress or deficiency. Then management either would reward them for meeting the quotas and deadlines or punish them for falling short.

In the administration of the FHWA's Federal Lands Highway Program, Eastern Federal Lands provides transportation engineering services to Federal agencies. We coordinate the design and construction of the projects based on schedules.

In 1992, Federal Lands Highway decided to review its existing processes and make improvements. This effort required teams within the division to evaluate the processes currently in place. These teams are called Process Action Teams (PATs). The teams are responsible for the following:

- displaying the existing process on a block diagram,
- identifying internal and external customers,
- locating problem areas in the process that are out of control,
- listing improvements to the process for the out of control areas, and
- identifying measurements that are associated with the improvements and tracking them to determine if improvements actually made a difference.

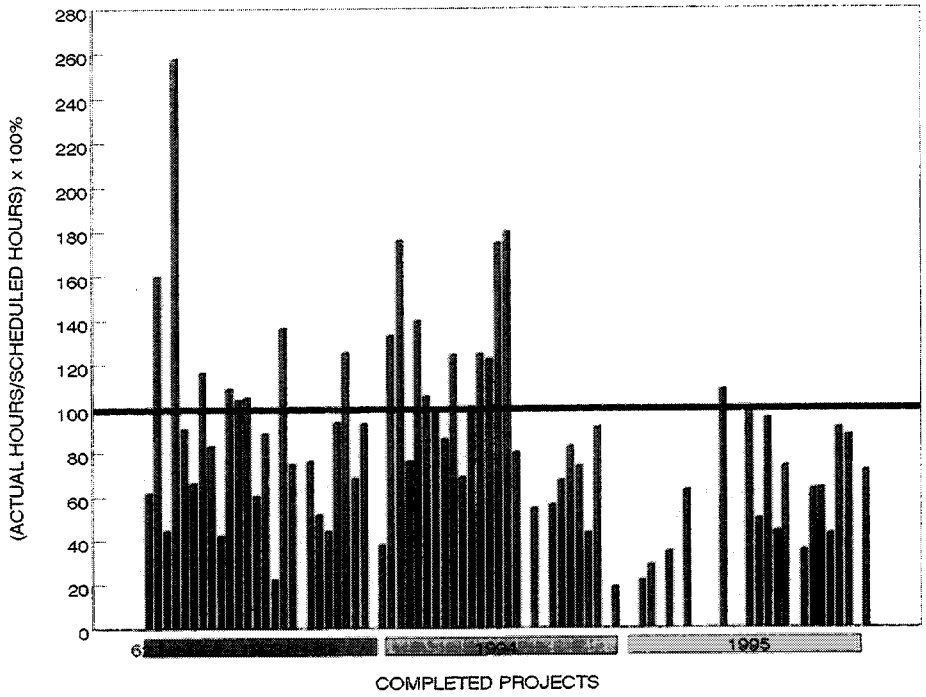
One of the first processes to be reviewed was the Location section (Location PAT) in Project Development. This group is responsible for the preliminary engineering phase of the roadway design. The Location section performs surveys to obtain design data needed to prepare topographic maps and establish highway alignment.

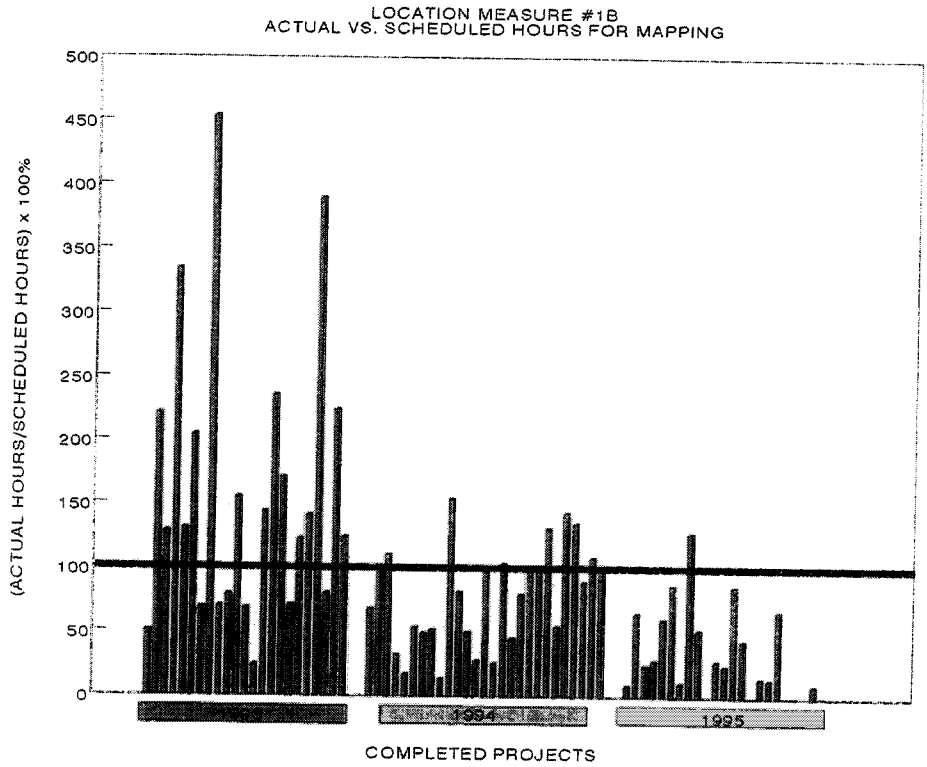
The Location PAT identified 22 improvements and 8 measurements as part of the implementation plan when the PAT was completed in June 1993. The implementation plan is the monitoring and improvement phase of the PAT process where quarterly reports track the measurements.

The Location PAT was the first process review at Eastern Federal Lands and it was a learning experience. After completing the review, we realized that not all of the measurements were directly related to the specific improvements identified in the implementation plan. The measurements were broad-based, covering several improvement initiatives.

In an effort to show tangible results, we have selected two measurements that provide a measure of performance. The first of these provides an indication of how well we are doing our preliminary resource estimates for surveying and mapping. This measurement is split out into #1A for surveying and #1B for mapping since

LOCATION MEASURE #1A
ACTUAL VS. SCHEDULED HOURS FOR SURVEYS



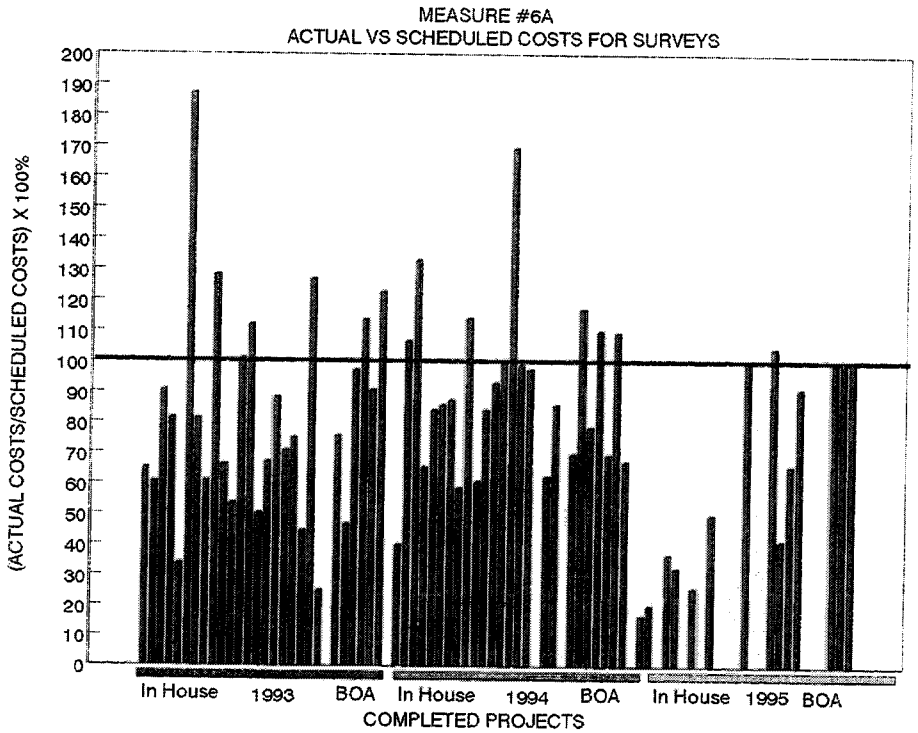


they are two separate functions. The second measure compares the estimated Preliminary Engineering (PE) costs to the actual PE costs after the design is complete. The costs are also is split into two functions and designated #6A and #6B for surveying and mapping, respectively.

The Location section provides preliminary estimates of work hours required to complete the activities related to the surveying function for all scheduled projects. Once the project is complete, the location engineer compares the estimated hours to the actual hours required to complete the surveying.

The data collection began with projects in FY 93. The graph below shows the heavy baseline of 100%. The 100% indicates that the estimated scheduled hours to perform surveying (e.g., 500 hrs) equals the actual hours required to complete the surveying (e.g., 500 hrs). The location goal is to have better time and cost estimates for improved resource planning and scheduling. This graph also indicates that in FY 93, before many of the PAT improvements were implemented, some estimates were off by as much as 260%. After implementation of many of the recommended improvements in FY 94, the percentages still were spiking up near 180%. In FY 95, of the projects completed so far, there is only one project where the actual hours exceeded the estimated scheduled hours. Except for this one project, all the surveying has been completed within the scheduled hours.

The measurements show trends that indicate improved accuracy in planning and scheduling activities for surveying. This is a critical element in overall project delivery.



Measurement #1B is a comparison of scheduled hours vs. actual hours required to perform the mapping function.

Data comparisons began with completed FY 93 projects. The graph shows the 100% baseline in a heavy line indicating the target percentage. In FY 93, 65% of the projects mapped were over the target 100% level. Two projects were above 400%. In other words, a project estimated that mapping would require 100 hours to com-

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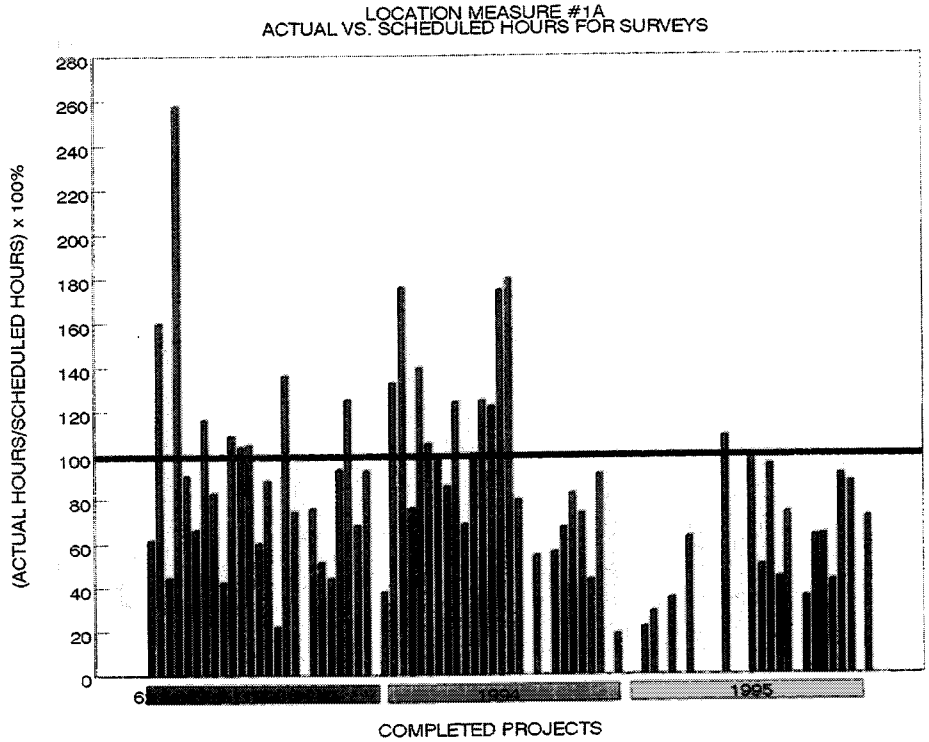


The FLH Construction Quality Improvement Survey

Measuring Real World Successes and Failures

by: Bill Cross, HFL-22*

The FLH Construction Quality Improvement Survey (CQIS) is one of our quality success stories -- at least for its brevity. In just seven questions it elicits as much useful information as many other surveys several times as long. The CQIS is a customer survey sent to construction contractors at the conclusion of each construction contract. Typically we think of the cooperating agency as the "customer" and the contractor as the "supplier". But it is not that simple. Without satisfied contractors we can't get competition and the competitive bid prices necessary to build the most with limited budgets.

The CQIS has been around since FY 91. Originally the survey was targeted at cooperating agencies and other third parties (e.g., utilities), as well as the construction contractor. In FY 93, when we decided to institute a separate Completed Project Survey for primary customers, we decided simultaneously to revise the QIS to make it focus more specifically on the construction contractor. The revision process went slower than anticipated, extending into FY 94. By the end of FY 94 WFLHD had been very aggressive in implementing the new survey. So the rest of this article is mostly about their experiences and plans for the future.

In FY93 and FY 94 WFLHD sent out 21 surveys and received 15 replies for a return rate of 71 percent.

The following are the seven questions, summaries of responses (5 is the highest possible rating, 0 is the lowest), and relevant comments:

Question 1. The construction plans and contractual requirements were presented in a clear and concise manner which facilitated estimating, bidding and contract performance.

High - 5 Low - 0.7 Mean - 3.6

Comments: One response was very complimentary of the plans and specifications. There were several complaints but most dealt with method of payment and other risk assignment issues more related to Question 2.

Question 2. Contractual risks were equitable, with the contractor assuming risks for matters under its control.

High - 5 Low - 0 Mean - 3.5

Comments: Several risk issues were mentioned including traffic control (volumes) and use of onsite and local materials (the contractor assumed they could be used and was disappointed).

Question 3. The contract specified the desired results, with equipment and procedures, to the extent practical, selected by the contractor.

High - 5 Low - 0 Mean - 3.7

Comments: There were few comments on this question.

Question 4. The materials, specifications, and design requirements were practical and cost effective considering the desired results.

High - 5 Low - 0 Mean - 2.9

Comments: This had the lowest rating of any question and more negative comments than any other question. Most of the comments related to or implied frustration at not being able to use locally available materials or to produce materials similar to those being furnished other agencies.

Question 5. The Project Engineer and other FLH personnel were accessible, responsive, and objective in addressing contractual issues you presented to the Government.

High - 5 Low - 1.5 Mean - 4.7

Comments: This was the highest rating of any question. More than half the responses contained narrative comments complimenting the quality of onsite FLH personnel. There was only one negative comment.

Question 6. Contractual problems affecting your operations or work were resolved in a timely manner.

High - 5 Low - 0 Mean - 4.3

Comments: This had relatively high scores. Of the fifteen responses, five were National Park Service (NPS) projects. Of those five, three responses complained of intervention by NPS which the contractor believed adversely impacted their ability to perform, and precipitated tension between FLH and the Contractor. This is a chronic problem which the NPS would doubtless see very differently.

Question 7. If the project was partnered, the partnering process was successful and facilitated the achievement of the objectives you had in entering into that process.

High - 5 Low - 1 Mean - 4.3

Comments: Six of the fifteen projects were partnered, and all but one of the responses was a "5." It should be noted that nearly all of the low responses come from a single contractor, which has a large claim against the Government for interference in its ability to secure a materials source.

The following are some of the future actions which seem indicated by the responses to the survey:

- Comments relative to the quality of FLH field personnel suggest that we should place higher value on that resource; and recognize that quality highway construction will continue to depend on knowledgeable, dedicated and responsive on-site personnel.
- The number of complaints related to materials and materials specification suggest that (1) we encourage more value engineering type proposals, and (2) we should look harder at our unique requirements to ascertain if the extra cost is worthwhile.
- Complaints relative to payment and risk assignment suggest that we may be able to do better at describing the onsite conditions and Government furnished materials so that bidders do not have to bid contingencies to cover those unknowns.
- The positive responses to partnering suggest that program is successful and should be continued and even expanded.
- Complaints relative to the NPS role in contracts within National Parks, suggest that more could be done to clarify that role, and convey that role to prospective bidders.

To address the results of this survey, WFLHD has a process management team for making long-term improvements in the construction process. The team owners receive a copy of these survey results and use them to make recommendations for improvement to construction processes. In future years, they will be able to use the survey to determine whether improvements made are working.

* Based largely on data and information prepared by the WFLHD Construction staff.

Personal Commitment

by: Bob Lale, Central Division

I recently had the good fortune to attend the President's Quality Award presentations in Washington, D.C. and had the honor of hearing the Vice President speak. In his speech, he talked about the phrase "good enough for government work." He addressed the fact that it used to be synonymous with "made in Japan," and that now it is coming into line with what "made in Japan" means today -- high quality, leaders in the field, etc. At this conference, I also learned much about what the winning organizations do and what we need to do to make that final leap and truly become a quality organization.

There were only two areas where we were different from the organizations that were the finalists and the winner of the President's Quality Award this year:

- Quantifiable results matched to improvement initiatives.
- Individual personal commitment, at every level, to the organization and its vision.

Each organization that was a finalist was able to produce documentation showing that its quality improvement efforts had produced tangible benefits. The

finalists also were able to show their relative progress toward their long range goals. Not all of their goals had been reached yet, but you could clearly see where they were. Not all of the results were dollar savings, and not all were time savings. They had evidence of increased customer satisfaction, reduced amounts of rework, and other softer measures, but they all indicated an improvement, and all improvements were attributable to one or more of their quality initiatives.

This is an area where we need to improve. While some measures have been established, we seem to lack set targets or performance goals. Additionally, we do not take care of these measurement systems as well as we could. It would not take much effort to prop up our data gathering and our measurement systems and show what our improvement initiatives are doing to our progress toward our business objectives.

This is a critical part of total quality management philosophy, to identify a problem, propose and implement a solution, and check to see if what you did had any effect.

The second area where we were different was personal commitment.

As I listened to the individuals from the winning organizations, and there were representatives from many different levels, one thing stood out -- they really cared about where they worked and the people that they worked with. You could see it in their eyes and hear it in their voices. They truly had personally committed to the organization and had a personal stake in its success.

I feel that we have a lot of committed people, but I question whether or not we have a majority. Max DePree in his book *Leadership is an Art* states, "This company can never become something that we are not." Only when everyone (because it cannot be a partial thing) personally commits to becoming the best that they can be, and to making FLH the best that it can be, can we achieve what our leaders want, because it will be what we want.

Our senior executives have established a vision and missions for this organization. We need that direction and those primary missions clearly and repeatedly communicated in such a way that people understand and can relate their daily work to it. Our senior executives and managers need to coach and lead us toward our goals, both personally and organizationally. This is their personal commitment.

Part of this, of course, is for the supervisor to tell the manager specifically what is expected of him or her in support of those missions and why he or she needs to share that common vision and head toward it. Subsequently, the managers can specifically spell out for their subordinates what is expected of them. Then each individual needs to have her or his evaluation depend on how well she or he is progressing toward those goals.

The employee's commitment comes in the form of an understanding, an interdependent relationship that says if I take care of the organization, it will take care of me. The employee cares about the success of the organization because it will mean personal success. The employee asks daily, "Is what I am doing helping the organization work toward its vision of being recognized as the best highway engineering organization?"

We have come a long way as an organization, and I believe that we will continue to strive toward our goals until we reach them. When we become "the best highway engineering organization through people dedicated to excellence," then people will come to visit us so that they can learn and see what "good enough for government work" really means.

Central FPQAT Keeps on Down the Road

Central's Field Pool Quality Action Team (FPQAT) still is moving on. After five years of existence, they have been through many evolutions, but are still a productive tight knit team. A good part of this is due to solid facilitation from Darrell Harding. Beyond that, the success of this team comes from strong team commitment and buy-in from managers and peers not on the team.

Over the last year project demands have slowed the progress of the team, but they have found the resources to work on two very major projects. The first project is assembling a "Project Engineers' Handbook" for use in the field offices. This manual will include all pertinent information that is used by the field offices on a frequent basis in one convenient location so that a person will not have to scramble all over to look for the right form or procedure. This also will greatly help the junior or new project engineers who frequently have questions

and don't know where to find the answers. It will cover subjects like:

- Vehicles
- Office Rentals
- Per Diem
- Payroll
- Personnel Transfers

It is estimated that this project will save the average Project Engineer at least 2 days of effort every year. With 18-25 active projects each season, this equates to 8 work weeks of effort each year. This does not take into consideration the time of support people needed to correct mistakes and answer questions. This just highlights how a simple procedural aid can have a real impact on productivity.

"This project will save the average Project Engineer at least two days of effort every year."

The second project is the development of a slide presentation showing what CFLHD is all about. This slide presentation will include information about what the different parts of FLH do and will highlight some of our most beautiful and successful projects. The main purpose for this slide presentation will be the recruiting of new employees and co-ops, but it will also serve as a marketing tool. Below is an excerpt from the opening:

"Working under the principles of Continuous Quality Improvement, the Central Division is committed to being recognized as the best highway engineering organization through people dedicated to excellence.

"Federal Lands has four missions:

- **Program Administration**
- **Highway and Transportation Engineering Services**
- **Training and Development of Engineers**
- **Development and Dissemination of Technology**

"Through this effort, we administer the funding of public roads that serve the transportation needs of Federal Lands. Meeting this need is not a State or local government responsibility. These roads serve recreational travel and tourism, protect and enhance natural resources, provide sustained economic development in rural areas, and provide needed transportation for native Americans. Through the administration of the Emergency Relief, Federally Owned (ERFO) program, we provide immediate disaster assistance for Federal roads, including: damage assessment, emergency design, and emergency construction services.

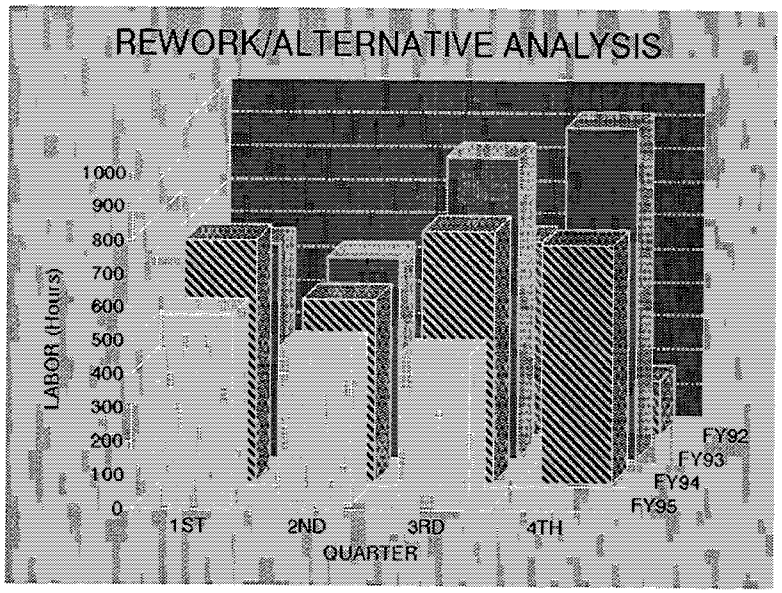
Central Division resources primarily are devoted to the Federal Highway Lands' second mission, transportation engineering services. In 1994 Central Division designed 22 projects with contract amounts totaling approximately 70 million dollars and provided construction oversight for 16 projects at a total award amount of 72 million. Under this mission area, we provide a broad spectrum of products and services including: highway planning, highway and bridge design, hydraulic analysis, geotechnical investigations, environmental investigations; and surveying and mapping services. We also provide cost estimating, road and bridge inventory and ratings, professional construction management, materials testing, and construction quality inspection, among others.

"People are our biggest asset. The Central division employs approximately 190; about 140 are located at the Division Office in Denver, Colorado. The remaining personnel are located on construction projects throughout the Western United States. The Division consists of five engineering units and one administrative unit, all under the supervision of the Division Engineer.

"The makeup of our people is a diverse cross-section of backgrounds, talents, and experience. We feel that this varied background is part of what makes us strong. We have civil engineering technicians, accountants, CADD operators, engineer designers, surveyors and other disciplines within our organization.

"The continued development of our people is one of our most important investments. Professional development and continuing education are encouraged in Federal Lands. Professional Engineering (PE) registration and certification of technicians by the National Institute of Civil Engineering Technicians (NICET) are both desired and recommended for our staff. An in-house training program also is used to give all employees a

well-rounded view of the operations in our organization. Additionally, each individual has a training plan developed for him or her that fits in with the agency goals, and the individual's desires for career development. This plan is reviewed with the supervisor and adjusted as needed.



"Central is committed to developing and implementing innovative engineering technology. Through its Technology Transfer program, the Division shares cutting-edge transportation technology with other agencies and the private sector. Through this program, many new and creative construction materials and techniques are used in the construction of our projects. The information obtained from this technology is valuable for the highway community and provides training experiences for our people."

In addition to these major projects, the FPQAT continues to produce efficiencies throughout the field pool and the organization by its frequent contact with members from the different project sites, as well as their counterparts from Western. Sharing this corporate knowledge throughout the pool produces better project delivery. Also, through coordinated communication, the FPQAT has a stronger voice in the Denver office. Needs and concerns are communicated more efficiently and addressed more rapidly by having one point of contact for field pool needs. Central's FPQAT continues to demonstrate FLH's drive for continuous improvement and pursuit of excellence.

Design PAT Reduces Rework

Central Division

After 3 years of data collection in the Central Division, the trends show that the time spent on alternative studies and rework has been reduced in the Design process from previous years.

The data collected for this measurement system was developed through the hard work of Craig Larson and Charmaine Farrar and used the existing PRMS system to collect and process the information. The existing Time and Attendance (T&A) system also is utilized to gather the necessary information, eliminating the need to develop an additional data collection system.

The primary reason for the reduction in rework appears to be the increased customer accountability for changes. With historical information the designers can inform the customer of delivery impacts caused by late design changes and allow a more informed decision to be made on the value of the changes.

Using Measures

An HFL-20 analysis from the Project Development and Completed Project Surveys

By now, you have seen the report completed in May 1995 containing the FY 93 and FY 94 results of the two customer satisfaction. These reports were compiled for each Division, and as a combined FLH summary, from responses to the Project Development and Completed Projects questionnaires. Managers in all functional areas should have reviewed the questions related to their technical specialties to determine how they rate with their customers.

Potential measures can be developed from the reports. Engineers seem to prefer quality measures that determine accuracy about "nearness to truth;" measures that are tangible and repeatable. Abstract measures such as those provided by the cultural survey and customer satisfaction questionnaires are more difficult to interpret. However, most definitions of quality use "customer satisfaction" and "meeting customer requirements."

The customer satisfaction data summaries were not presented in a way that is easy to compare data. To simplify presenting the data, a single weighted score is used to present the results from each question. This weighted score is the product of each rating scale (1 through 7) and the percentage each rating was given. This results in total points between 1.0 and 7.0 for each question.

In the following two examples, the questions related to highway design in the Project Development and Completed Projects questionnaires were compared. The combined FLH results are presented graphically in Charts 1 and 2, comparing the two fiscal years. Similar breakdowns could be done for each Division. In design, our customers gave all Divisions similar, high ratings.

The Project Development Questionnaire included questions #13 (Effectiveness of Roadway Design), #23A (PS&E for Roadway meets expectations), #25 (Roadway Geometrics meet requirements), #32 (Final Design consistent with Scoping Reports), #34 (Overall Project Development process meets expectations), and #35 (Would you use FLH again) which are related to highway design. The results for the two fiscal years show good agreement. Graphical data in Chart 1 was compared with the total of all weighted scores for each fiscal year. The total score for FY 93 is 110.15 and for FY 94 is 110.20; a change of less than 0.1 percent!

An increased score from FY 93 to FY 94 may seem desirable. However, few PAT improvements that would affect the completed designs were completed before the questionnaires were received. Therefore, the similar results between fiscal years are a good validation of the survey results.

Perhaps the most critical Project Development question is number #35, ". . . would you use FLH services for future projects . . ." This question received between 96 and 100 percent favorable responses in both fiscal years!

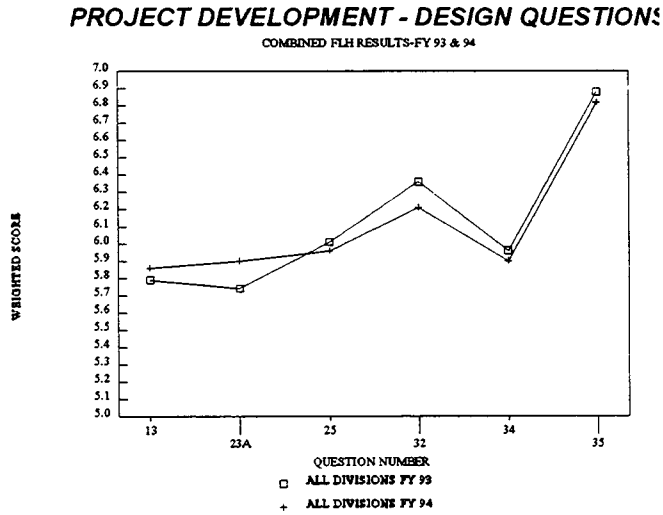


Chart1

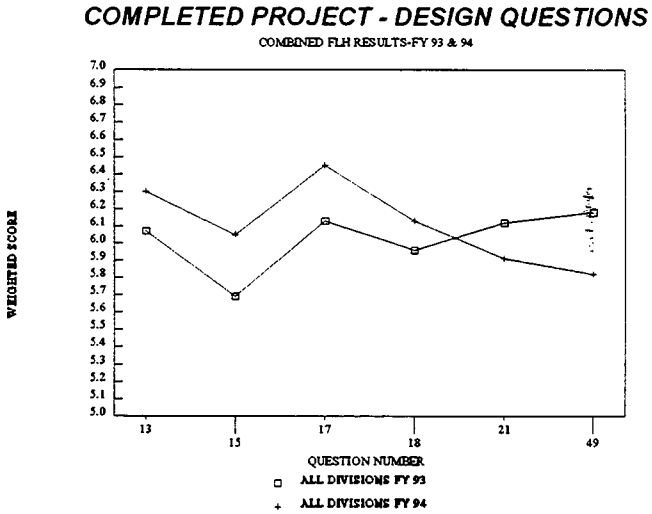


Chart 2

The Completed Project Questionnaire included questions related to meeting the technical requirements: #13 (Striping), #15 (Cut and fill slopes), #17 (Guardrail and safety features), and #18 (Drainage design). It also included question #21 (Final construction consistency with PS&E), and #49 (Meeting overall quality expectations). Again, the results for the two fiscal years show good agreement. The graphical data in Chart 2 was compared with the total weighted score for each fiscal year. The total for FY 93 is 108.36 and for FY 94 is 108.69; a change of 0.3 percent!

In several years, a comparison of the individual project results between the Project Development and Completed Project Questionnaires should prove interesting.

Results

In case you haven't already noticed, the theme for this issue of the FLH Quality News is "Results." According to the criteria for the President's Quality Award Program, the "Business Results" category makes up 20 percent of the score. It is second only to the "Customer Focus" category which amounts to 25 percent.

Four years ago FLH applied for the Quality Improvement Prototype Award only to be told that our efforts at that time were "embryonic." The area most lacking was "Results." It is, typically, the most difficult of the seven categories because only after an organization changes from the inside out and from the downside up do positive results become evident.

In 1996, FLH plans to make a much more serious attempt to compete for the award. In doing so, leaders at all levels will be asked to document their contributions to the seven categories. This newsletter documents some outstanding results from teams. They are examples of what is or should be going on all across FLH. If you know of other similar success stories, think about documenting your results and sharing them with others.

Consider all the categories of the President's Award for Quality:

- Leadership (125 points),
- Information and Analysis (75 points),
- Strategic Planning (60 points),
- Human Resource Development and Management (150 points),
- Process Management (140 points),
- Business Results (200 points), and
- Customer Focus and Satisfaction (250 points).

They are all interrelated and together they constitute the primary focus areas of a top-notch organization. The scoring is tough. Any organization which can score over 800 points out of the 1,000 possible, for instance, is considered "world-class." According to FLH's annual self-assessment, in 1994 we were just over 600.

Recommended Reading

Libraries

Each Federal Lands Highway Division and Headquarters maintains a library of books, pamphlets, conference proceedings, video tapes, audio tapes, and other materials related to quality. See your coordinator for information.

Books

Learning Organizations, Sarita Chawla, ed., John Renesch, ed., Productivity Press, 1995

Handbook for Productivity Measurement and Improvement, William F. Christopher, ed., Carl G. Thor, ed., Productivy Press, 1993.

Empowered Teams - Creating Self-directed Work Groups that Improve Quality, Productivity, and Participation, Wellins, Byham, and Wilson, Jossey-Bass Publishers, 1991

Information Sources

Federal Quality Institute

The Federal Quality Institute, P.O. Box 99, Washington, DC 20044-0099 provides quality management services to all Federal Agencies. Subscribe to the Federal Quality News by FAX 202-376-3765.

Conferences and Courses

The American Society of Quality Control (ASQC) may be reached at (800)248-1946. The Total Employee Involvement (TEI) Institute may be reached at (800)966-5423. The Association for Quality and Productivity may be reached at (800)733-3310. All three have superior conference and training courses.

Miscellaneous

Brochure

TQM in FLH, an attractive brochure describes our Vision, Mission, Guiding Principles as well as our organization. Your FLH Division Office has copies.

Team Guidelines

The popular book, **Federal Lands Highway Team Manual** is available from the Division Quality Coordinator. Additional copies may be obtained by calling Headquarters, 366-9492.

Training Opportunities

Training in all aspects of TQM is available from many sources, internal and external. See your Quality Coordinator for ideas and to help you make arrangements.

Performance Management

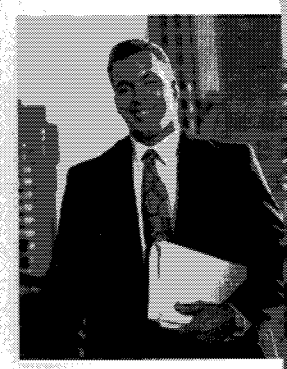
FLH measures overall performance, surveys employees and obtains feedback from customers to let them drive the organization. If you would like to receive information about how this is done, contact your Division Quality Coordinator.

Strategic Business Planning

Integrating quality and strategic business planning is HARD work. Federal Lands Highway has direct experience to share. Contact Mark Chatfield, HFL-1, 202-366-9492.

Comprehensive Index

Six Years of Continuous Improvement in the Federal Lands Highway Organization



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accomplishments (see also awards; peer awards; rewards and recognition)
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Publication No. FHWA-FLP-96-009
HFL-1/2-96(2M)E