CHANGE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

8400.10 CHG 11

3/13/97

SUBJ: AIR TRANSPORTATION OPERATIONS INSPECTOR'S HANDBOOK

1. PURPOSE. This change transmits new and revised sections of the handbook and includes repagination and typesetting of some sections that have minor editorial changes.

2. DISTRIBUTION. This change is distributed to all addressees on the special distribution list ZFS-840.

3. EXPLANATION OF CHANGES. Significant areas of new direction, guidance, and policy included in this change are as follows:

a. Volume 1, chapter 1, section 5 contains an updated acronym list. Chapter 4, section 8, Public Aircraft Operations, has been added.

b. Volume 2, chapter 1, section 1, includes a revised Air Carrier Certification Job Aid and section 2, contains a new paragraph regarding Economic Authority and DOT Certificates and Exemption. Chapter 2, section 1, 2, 3, and 4 contains new paragraphs concerning the certification process for Title 14 of the Code of the Federal Regulations (14 CFR) parts 121 and 135. Chapter 2, section 5 contains a new Certificate Phases and Gates flow chart.

c. Volume 3, chapter 1, section 7, includes revised information regarding operations specifications: a subparagraph concerning emergency amendment of operations specifications. Chapter 2, section 6, includes revised information on recurrent and qualification line-oriented flight training and 14 CFR part 121 requalification flight training. Chapter 3, sections 1, 2, and 3, includes new and revised information on check airman, instructor, and supervisor programs. Chapter 6, section 5, contains two revised subparagraphs regarding IFR operations. Chapter 10, section 2, has a revised full-scale demonstration table and a new note concerning flightcrew activities during demonstration. Chapter 10, section 7, includes a new aircraft in figure 3.10.7.1. Chapter 11, section 3, contains new information on recurrent ground training. Chapter 15, section 3, contains corrected advisory circular numbers.

d. Volume 4, chapter 1, section 1, contains general guidance for the use of global positioning systems (GPS). Chapter 1 also contains recodified 14 CFR part 91 section numbers. Section 2 contains a new paragraph containing information for approval of GPS equipment and a new table concerning GPS classes/categories. Section 5 contains revised information regarding operations in sensitive international areas. Chapter 2, section 2, contains two new paragraphs regarding GPS approach procedures. Chapter 5 contains new and revised information regarding air ambulance operations.

e. Volume 5, chapter 5, section 1 and 2 contains new and revised information concerning air carrier designated examiners. Chapter 6, sections 1, 2, and 3, contains new and revised information concerning the Aircrew Designated Examiner Program. Chapter 8, School Designated Examiner Program, has been withdrawn. Chapter 7, Aircraft Navigator Certificates, is now chapter 8.

f. Volume 7, chapter 1, section 3, Investigation of Oceanic Gross Navigation and Other Errors, a new section has been added.

g. This change incorporates and cancels the following electronically published Flight Standards handbook bulletins:

(1) HBAT 93-11, Landing Currency Requirements for Aircrew Program Managers (APM).

(2) HBAT 95-14, Application of a Gate Concept to FAR Part 121 and FAR Part 135 Initial Certification.

4. DISPOSITION OF TRANSMITTAL. This transmittal is to be RETAINED AND FILED IN THE BACK OF THIS HANDBOOK until it is superseded by a new basic order.

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39. GENERAL. Many acronyms and abbreviations for both old as well as new aviation terms are used throughout this handbook. Inspectors can refer to the following alphabetical listing of frequently used acronyms and abbreviations and their meanings when using this handbook.

AC	Advisory Circular
ACARS	Air-Ground Passive Communications Systems
ACO	Aircraft Certification Office
ACDE	Air Carrier Designated Examiner
ADE	Aircrew Designated Examiner
ADF	Automatic Direction Finder
ADR	Advisory Route
AEG	Aircraft Evaluation Group
AES	Automated Exemption System
A/FD	Airport/Facility Directory
AFM	Airplane Flight Manual
AFS-1	Director of Flight Standards Service
AFSS	Automated Flight Service Station
AFTN	Aeronautical Fixed Telecommunications Network
AGC	Office of the Chief Counsel
AGL	Above Ground Level
AH	Alert Height for Category III Operations
AIA	Office of International Aviation
AIM	Airman's Information Manual
AIP	Aeronautical Information Publication
AIRMET	Airman's Meteorological Information
ALPA	Air Line Pilots Association Intl.
AOPA	Aircraft Owners and Pilots Association
APD	Aircrew Program Designee
APM	Aircrew Program Manager
APU	Auxiliary Power Unit
AQP	Advanced Qualification Program
AR	Airborne Radar
ARA	Airborne Radar Approach
ASAS	Aviation Safety Analysis System (Data Automation)
ASDE	Airport Surface Detection Equipment
ASI	Aviation Safety Inspector
ASR	Airport Surveillance Radar
ATA	Air Transport Association of America
ATC	Air Traffic Control
ATD	Advanced Training Device
ATIS	Automatic Terminal Information Service
ATP	Airline Transport Pilot
AVN	Aviation Standards National Field Office
AVR-1	Associate Administrator for Regulation and Certification
AVS-1	Associate Administrator for Aviation Standards
AVSIG	Aviation Forum
AWOS	Automated Weather Observing System
AWTA	All Weather Terminal Area Operation
AXR-1	Executive Director for Standards and Compliance
BBS	Bulletin Board Service
CAA	Civil Aeronautics Administration
CAB	Civil Aeronautics Board
CAM	Civil Aviation Manual
CAR	Civil Aviation Regulation
CASFO	Civil Aviation Security Field Office
CBI	Computer-Based Instruction
CCO	Cockpit-Cutoff-Angle
CDL	Configuration Deviation List
CEPAC	Central East Pacific (Airspace)
CFI	Certificated Flight Instructor
CFM	Company Flight Manual
CFR	Code of Federal Regulations
CG	Center of Gravity
CHDO	Certificate-Holding District Office
CIG	Component Inoperative Guide
CMO	Certificate Management Office
CPM	Certification Project Manager
CRM	Crew Resource Management
CVFP	Charted Visual Flight Procedures
DA	Density Altitude
DBA	Doing Business As
DGPS	Differential Global Positioning System
DH	Decision Height
DME	Distance Measuring Equipment
DNL	Decibel Noise Level
DOT	Department of Transportation
DPA	Decision Point Altitude
DR	Dead Reckoning
DUAT	Direct User Access Terminal
DWFAF	Downwind Final Approach Position
EA	Environmental Assessment
EPR	Exhaust Pressure Ratio
ER-OPS	Extended-Range Operations
ETA	Estimated Time of Arrival
ETE	Estimated Time En Route
ETOPS	Extended-Range Operations with Two-Engine Airplanes
F/A	Flight Attendant
FA	Forecasts Area

FAA	Federal Aviation Administration
FA Act	Federal Aviation Act of 1958
FAF	Final Approach Fix
FAR	Federal Aviation Regulations
FBO	Fixed-Base Operator
FD	Flight Director
FE	Flight Engineer
FIFO	Flight Inspection Field Office
FIR	Flight Information Region
FL	Flight Level
FMRB	Flight Manual Review Board
FMS	Flight Management System
FOD	Foreign Object Damage
FOEB	Flight Operations Evaluation Board
FOIA	Freedom of Information Act
FONSI	Finding Of No Significant Impact
FOPM	Flight Operations Policy Manual
FSAS	Flight Standards Automation System
FSB	Flight Standardization Board
FSDO	Flight Standards District Office
FSIS	Flight Standards Information System
FSNFO	Flight Standards National Field Office
FSS	Flight Service Station
FT	Forecast Terminal
FTD	Flight Training Device
FTE	Flight Technical Error
GMM	General Maintenance Manual
GNSS	Global Navigation Satellite System
GOM	General Operations Manual
GPS	Global Positioning System
GS	Groundspeed
GS GC	Ground School Graduation Certificate
GTD	Ground Training Device
HAA	Height Above Airport (Non-precision approach)
HAT	Height Above Touchdown (Precision approach)
HAZMAT	Hazardous Materials
HEDA	Helicopter En Route Descent Area
HF	High Frequency
HIRL	High Intensity Runway Light
HMR	Hazardous Materials Regulation
HUD	Heads-Up Display
IAP	Instrument Approach Procedure
IAS	Indicated Airspeed
IATA	International Airport Transport Association
IAW	In Accordance With
ICAO	International Civil Aviation Organization
IF	Intermediate Approach Fix
IFO	International Field Office
IFR	Instrument Flight Rules
ILS	Instrument Landing System
IM	Inner Marker
IMC	Instrument Meteorological Conditions
IMLS	Instrument Microwave Landing System
INM	Integrated Noise Model
INS	Inertial Navigation System
IOC	Initial Operating Capability
IOE	Initial Operating Experience
IRA	Instrument Rating Airplane
IRS	Inertial Reference System
ISARP	International Standards and Recommended Practice
ISIS	Integrated Safety Information System
JAD	Job Aid Disk
JTA	Job Task Analysis
KM	Kilometer
LAN	Local Area Network
LDA	Localizer-Type Directional Aid
LF	Low Frequency
LIRL	Low Intensity Runway Light
LLWS	Low-Level Windshear
LOA	Letter of Authorization
LOE	Line-Operational Evaluation
LOFT	Line-Oriented Flight Training
LOP	Line of Position
LORAN	Long-Range Navigation
LOS	Line-Operational Simulation
LRA	Lowest Radar Altitude
MAP	Missed Approach Point
MCT	Maximum Continuous Thrust
MDA	Minimum Descent Altitude (non-precision approach)
MDPR	Master Differences Program Requirement
MEL	Minimum Equipment List
MF	Medium Frequency
MHz	Megahertz
MID	Mid Runway Rollout
MIRL	Medium Intensity Runway Light
MLS	Microwave Landing System
MMEL	Master Minimum Equipment List
MNPS	Minimum Navigation Performance Specification
MOU	Memorandum of Understanding
MRB	Maintenance Review Board
MSG	Maintenance Steering Group
MSL	Mean Sea Level
MTOW	Maximum Takeoff Weight
NAS	National Airspace System
NASA	National Aeronautics and Space Administration
NAT	North Atlantic Track
NATA	National Air Transportation Association
NAVAID	Navigational Aid
NDB	Nondirectional Beacon
NFDC	National Flight Data Center
NFDD	National Flight Data Digest
NM	Nautical Mile
NOAA	National Oceanic and Atmospheric Administration
NOPAC	North Pacific
NOS	National Ocean Service
NOTAM	Notice to Airmen
NPRM	Notice of Proposed Rule-Making
NSPM	National Simulator Program Manager
NST	National Standardization Team
NTSB	National Transportation Safety Board
NWS	National Weather Service

OAT	Outside Air Temperature
OC	Obstruction Chart
OCA	Obstacle Clearance Altitude
OCH	Obstacle Clearance Height
OCL	Obstacle Clearance Limit
OE	Operating Experience
OPSS	Operations Specifications Subsystem
OSAP	Offshore Standard Approach Procedure
OTNA	Operational Training Needs Assessment
PAI	Principal Avionics Inspector
PANS-OPS	Procedures for Air Navigation Services Aircraft Operations
PAR	Precision Approach Radar
PASI	Preapplication Statement of Intent
PASS	Professional Airways Systems Specialists
PATCO	Professional Air Traffic Controllers Organization
PATWAS	Pilots Automatic Telephone Weather Answering Service
PCB	Production Certification Board
PIC	Pilot-in-Command
PIREP	Pilot Weather Report
PF	Pilot-Flying
PMI	Principal Maintenance Inspector
PNF	Pilot-Not-Flying
POI	Principal Operations Inspector
POM	Pilot Operating Manual
PPM	Partial Program Manager
PTRS	Program Tracking and Reporting Subsystem
PTS	Practical Test Standards
RAA	Regional Airline Association
RAIM	Reciever Autonomous Integrity Monitoring
RFM	Rotorcraft Flight Manual
RFSD	Regional Flight Standards Division
RMA	Radar Minimum Altitude
RNAV	Area Navigation System
RTCA	Radio Technical Commission for Aeronautics
RVO	Runway Visibility by Observer
RVR	Runway Visual Range
RVV	Runway Visibility Value
SAFE	Aviation Safety Analysis and Functional Evaluation
SARA	Special Airport/Route Authorization
SAWRS	Supplementary Aviation Weather Reporting Station
SFAR	Special Federal Aviation Regulations
SIAP	Standard Instrument Approach Procedure
SIC	Second-in-Command
SID	Standard Instrument Departure
SIGMET	Significant Meteorological Information
SIM	Flight Simulator
SM	Statute Mile
SOE	Supervised Operating Experience
SPAS	Safety Performance Analysis System
SPO	Supporting Proficiency Objectives
SPOT	Special Purpose Operational Training
STAR	Standard Terminal Arrival
STC	Supplemental Type Certificate
STOL	Short Takeoff and Landing
SVT	Single-Visit Training
SYSOP	Systems Operator
TACAN	Tactical Air Navigational Aid
TAS	True Airspeed
TBD	To Be Developed
TCAS	Traffic Alert and Collision Avoidance System
TCE	Training Center Evaluator
TCH	Threshold Crossing Height
TCO	Training Course Outline
TCPM	Training Center Program Manager
TDZ	Touchdown Zone
TERPS	Terminal Instrument Procedures
TPO	Terminal Proficiency Objectives
TSO	Technical Standard Order
TWEB	Transcribed Weather Broadcast
UHF	Ultra High Frequency
UNICOM	Aeronautical Advisory Station
USC	United States Code
USNOF	United States NOTAM Office
UTC	Coordinated Universal Time
VASI	Visual Approach Slope Indicator
VERTOL	Vertical Takeoff and Landing
VFR	Visual Flight Rules
VHF	Very High Frequency
VIS	Vital Information Subsystem
VLF	Very Low Frequency
VMC	Visual Meteorological Conditions
VOR	VHF Omnidirectional Range Station
VOR/DME	VHF Omnidirectional Range Station/ Distance Measuring Equipment
VORTAC	VHF Omnidirectional Range Station/ Tactical Air Navigation
VSI	Vertical Speed Indicator
WPMS	Work Program Management System

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CHAPTER 4. GENERAL DIRECTION, GUIDANCE, AND PROCEDURES

SECTION 8. PUBLIC AIRCRAFT OPERATIONS

239. GENERAL. In recent years, there has been a growing concern about the safety of public aircraft, which are statutorily exempt from Federal Aviation Administration (FAA) regulation. Some private operators claim that state and local governments have been competing with them unfairly under the public aircraft exemption.

NOTE: For further information regarding governmental aircraft operations see Advisory Circular (AC) 00-1.1.

A. Intergovernmental reimbursement for operations flown has led to a great deal of controversy. Some state and local governments enter into agreements with each other whereby one government reimburses the other for flying firefighting, rescue, or other missions for it. The longstanding interpretation has been that where there is an exchange of money, an operation is "for commercial purposes" and does not have public aircraft status. Many government operators have objected that this interpretation made it impossible to carry out their missions because it is too costly to change many of these aircraft to meet FAA requirements for civil aircraft.

B. On October 25, 1994 The President signed the Independent Safety Board Act Amendments of 1994, which contained a major change in the definition of "public aircraft." Under the new law, where intergovernmental reimbursement occurs, the aircraft will be civil aircraft unless the appropriate unit of government certifies "that the operation was necessary to respond to a significant and imminent threat to life or property," and "that no service by a private operator was reasonably available to meet the threat."

(1) Congress wanted to ensure that passengers are not transported on airplanes of questionable safety. Under previous law, public use aircraft were not subject to the Federal Aviation Act of 1958 (FA ACT) safety regulations to the extent imposed on civil aircraft. Under the Independent Safety Board Act Amendments of 1994, FAA safety regulations, directives, and orders issued for civil aircraft are applicable to all government-owned, nonmilitary aircraft engaged in military transport. The Administrator is allowed to waive FAA requirements for public aircraft provided that an equivalent level of safety has been established by the governmental entity responsible for the aircraft.

(2) Additionally, during emergency situations, local governments were frustrated because all available resources could not be utilized. Emergency or not, it was prohibited for public agencies to reimburse one another for the use of aircraft. The Independent Safety Board Act Amendments of 1994, gives authority to local governments to ensure that when an emergency breaks out, all aircraft—public and private—will be available to respond without delay. In certain cases, where an imminent threat is looming and private operators are not readily available, public agencies will be allowed to use each other's aircraft.

241. PUBLIC AIRCRAFT.

A. Aircraft used only for the United States Government shall be designated public aircraft. Aircraft that is owned and operated or exclusively leased (except for commercial purposes) for at least 90 continuous days by the government of a state, a territory or possession of the United States, the District of Columbia, or a political subdivision of that government (except the United States Government) shall be designated as public aircraft.

B. Public Aircraft includes a government-owned aircraft transporting (for other than commercial purposes) persons aboard the aircraft if the aircraft is operated by the Armed Forces or an intelligence agency of the United States.

NOTE: An aircraft described in the paragraph 241(B) shall be considered to be a public aircraft without regard to whether the aircraft is operated by a *unit of government* on behalf of another unit of government. As long as the unit of government on whose behalf the operation is conducted certifies to the Administrator of the FAA that the operation was necessary to respond to a *significant and imminent threat to life or property (including natural resources)* and that *no service by a private operator was reasonably available to meet the threat.*

Public aircraft does not include a government-owned aircraft transporting property or passengers *for*

commercial purposes. Exceptions to this rule include persons aboard the aircraft *whose presence is required to perform,* or is *associated with the performance of a governmental function such as*:

- Firefighting
- Search and rescue
- Law enforcement
- Aeronautical research
- Biological or geological resource management

NOTE: See figure 1.4.8.1. for Public Aircraft Determination-Flow Diagram

243. OPERATIONAL NATURE. The status of an aircraft as public aircraft or civil aircraft depends on the type of operation that the aircraft is conducting at the time. Rather than speaking of particular aircraft as public aircraft or civil aircraft, it is more precise to speak of particular operations as public aircraft or civil aircraft in nature.

> Example: An aircraft owned by a state government is used in the morning for a search and rescue mission that meets the statutory definition of public aircraft in all respects. For the search and rescue operation, the aircraft is a public aircraft. Later that same day, however, when the aircraft is used to fly the governor of the state from one meeting to another, the aircraft loses its public aircraft status and is instead a civil aircraft.

245. DEFINITION OF KEY TERMS. The following are various words, phrases, and clauses used in the FAA definition of a Public Aircraft.

A. *"For Commercial Purposes."* This term means for compensation or hire. The test for determining whether a particular operation is "for compensation or hire" is whether the operator receives direct or indirect compensation for the operation. It is not necessary that a flight be conducted for profit to constitute an operation for "compensation or hire," the term may be applicable even where there is no intent or ability to make a profit from the flight. Furthermore, no profit need be made; an operation may be "for compensation or hire" even if the operator takes a loss. When the operator is a governmental entity, payment from a party not sharing a common treasury with the governmental entity makes the operation "for commercial purposes."

B. *"Whose Presence Is Required to Perform."* This phrase means either a crewmember or a non-crewmember who will participate in carrying out the governmental function.

C. *"Associated with the Performance of...."* This clause connotes a non-crewmember support person who, while not essential to performance of the governmental function, is expected to contribute to the effectiveness of those whose presence is required to perform the function.

D. *"A Governmental Function such as...."* Not all activities conducted by government agencies are considered "governmental functions" within the meaning of the new definition. The accepted functions include "firefighting, search and rescue, law enforcement, aeronautical research, or biological or geological resource management" or other comparable functions. In each instance, the use of an aircraft must be necessary to perform the function. In some cases, training flights may be considered acceptable, where the training is being performed aboard the aircraft and the aircraft is necessary for the performance of the training. The FAA will permit a government function that involves transportation of passengers to fall within the exemption only if it is "indispensable to the timely execution of a government function." The following are examples of governmental functions:

(1) *Firefighting.* This term includes the drop of fire retardants, water, and smoke jumpers. It also includes the transport of firefighters and equipment to a fire or to a base camp from which they would be dispersed to conduct the firefighting activities.

(2) *Search and Rescue.* Search and rescue is a term of art meaning aircraft operations that are flown to locate people who cannot be located from the ground. The term includes operations where the aircraft is indispensable to the search, or is the only feasible means of reaching the victim. Victims would be considered to be "associated with" the search and rescue operation. The term "search and rescue" does not include routine medical evacuation of persons due to traffic accidents and other similar incidents.

(3) *Law Enforcement.* Law enforcement operations that employ hovering helicopters with searchlights and law enforcement personnel ready for immediate on-the-spot deployment are public aircraft operations. As long as reimbursement is from a common treasury, the transportation of prisoners falls within the category "law enforcement" and is a public aircraft operation.

(4) *Aeronautical Research.* Aeronautical research (conducting flights to determine aircraft performance in various operating environments) that requires the presence on board the research aircraft

of engineers and technicians who are not part of the crew is a public aircraft operation.

(5) *Biological & Geological Resource Management.* This term means biological and geological resource management that requires the presence of scientific and technical passengers to gather information that can only be gathered by direct observation from the air.

E. *Cost Reimbursement Agreement.* This term means an agreement, either verbal or written, between two separate units of government, whereby one unit operates an aircraft on the others behalf and is reimbursed by the other for the cost of the operation. If the two agencies share a common treasury, the operation is not "for commercial purposes."

F. *Unit of Government.* This term means a government. The singular characteristic of a unit of government in this context is its common treasury. This interpretation permits Economy Act reimbursement among federal agencies without the need for compliance with Federal Aviation Regulations (FAR) Part 121, FAR Part 125, or FAR Part 135. However, should federal agencies ever receive reimbursement from outside the federal government, they would need to ensure that they are in compliance with either FAR Parts 121, 125, or 135, depending on the type of aircraft operation.

G. *Significant and Imminent Threat.* "Significant and imminent threat to life or property (including natural resources)," means a situation in which the authority responsible for responding to the threat has determined that serious injury, death, or significant damage to property may occur before land- or waterborne assistance can be deployed to counter the threat effectively. It is not expected that FAA inspectors will challenge significant and imminent threat determinations made by units of government.

H. *No Service by a Private Operator Reasonably Available.* "No service by a private operator was reasonably available to meet the threat," means that no private operator is able to deliver an aircraft capable of performing the minimum tasks by the latest time at which such aircraft would provide an effective response, as determined by the authority charged to respond to the threat. It is not expected that FAA inspectors will challenge determinations made by units of government that no private operator was reasonably available to meet the threat.

I. *Aviation Safety Program.* The Administrator or the Administrator's delegate may not grant an exemption to a unit of government without certifying that the aviation safety program of the unit of government is "effective and appropriate to ensure safe operations of the type of aircraft operated by the unit of government."

247. BRINGING OPERATIONS INTO COMPLIANCE

A. *FAR Part 91.* The pilot-in-command (PIC) of an aircraft is directly responsible for, and is the final authority as to the operation of that aircraft. In case of an in-flight emergency the PIC is authorized to deviate from any rule in FAR Part 91 to the extent necessary to meet the emergency. However, any PIC that deviates from a rule in FAR Part 91 will be required, upon the request of the Administrator, to send a written report of that deviation to the Administrator. FAR Part 91 prohibits a pilot from operating a civil aircraft unless it is in an airworthy condition. The PIC is responsible for determining whether the aircraft is in condition for safe flight. The PIC is required to terminate the flight when unairworthy mechanical, electrical, or structural conditions occur. In addition, the PIC may not operate the aircraft without complying with the operating limitations specified in the approved airplane flight manual (AFM) or rotorcraft flight manual (RFM), markings, and placards, or as otherwise prescribed by the certificating authority of the country of registry.

B. *Determining FAR Part 125 Eligibility.* If the operator uses an airplane with seating capacity (configuration) for 20 or more passenger seats or a maximum payload capacity of 6,000 pounds or more and if the operator is not engaged in "common carriage," as described below, then FAR Part 125 applies. If, however, the operator is engaged in "common carriage," then either FAR Part 121 or FAR Part 135 will apply. FAR Part 125 is only applicable to large airplane operations in other than common carriage. A person is considered to be engaged in "common carriage" when "holding out" to the general public or to a segment of the public as willing to furnish transportation within the limits of its facilities to any person who wants it. FAR § 125.11(b) prohibits FAR Part 125 certificate holders from conducting any operation which results directly or indirectly from holding out to the general public. Further information regarding common carriage vs. private carriage can be found in AC 120–12. Examples of holding out are as follows:

- Advertising through telephone yellow pages
- Billboards
- Television
- Radio
- Individual ticketing

NOTE: An operator could reconfigure an airplane with more than 20 seats by removing some of its seats so that it has a passenger seating capacity of 19 or less. FAR Part 125 would not be applicable, unless the calculated maximum payload capacity is 6,000 pounds or more. Maximum payload capacity is defined in FAR § 125.9. If, through calculations in accordance with this definition, the maximum payload is determined to be 6,000 pounds or more, FAR Part 125 is applicable regardless of the number of seats.

249. FAR PARTS 121 OR 135.

A. *Government-owned Aircraft.* When a government-owned aircraft is operated "for commercial purposes," the requirements contained in either FAR Part 121 or FAR Part 135, depending on the type of operation, must be met. Generally, FAR Part 121 applies to domestic, flag, and supplemental air carriers and commercial operators of large aircraft, while FAR Part 135 applies to air taxi operators and commercial operators. An operator should consult the applicability provisions of each part (FAR §§ 121.1 and 135.1) to determine whether it is FAR Parts 121 or 135 that applies to a particular operation. The regulations in FAR Parts 121 and 135 provide the government operator with the certification, training, and qualification requirements necessary for the development of an acceptable aviation safety program. The government operator should contact the nearest FAA flight standards district office (FSDO) for assistance and guidance on the certification process. The FSDO manager will assign an FAA aviation safety inspector to assist the government operator during the certification process. Initial inquiries about certification or requests for applications should be in writing or by personal visit to the FSDO. The FSDO will provide the applicant with a videotape on certification and a copy of FAA AC 120-49, "Certification of Air Carriers." Once the videotape and the advisory circular have been reviewed, the applicant will complete FAA Form 8400-6, "Preapplication Statement of Intent," and the FSDO manager will assign a certification team to assist the applicant through each phase of the certification process.

B. *Economic Authority.* On April 17, 1995, the Department of Transportation (DOT) issued Order 95-4-28 pertaining to the matter of Government Aircraft Owners and Operators exemption from Title 49 of the United States Code (U.S.C.) § 41102. The Order states that "we grant an exemption from the requirements of 49 U.S.C § 41102 to the extent necessary to allow all owners and operators of government aircraft to provide not-for-hire, cost reimbursable transportation incidental to official government business." As a result Government aircraft operators are not required to receive or apply for DOT economic authority.

251. PILOT CERTIFICATION. All civil aircraft are required to be operated by pilots certificated under FAR Part 61. FAR Part 61 prescribes the requirements for issuing pilot certificates and ratings, the conditions under which those certificates and ratings are necessary, and the privileges and limitations of those certificates and ratings.

A. *Domestic Aircraft.* Pilots operating civil aircraft of U.S. registry are required to have in their personal possession a current pilot certificate issued to them under FAR Part 61. U.S.-registered aircraft may be operated in a foreign country with a pilot license issued by that country.

B. *Foreign Aircraft.* Foreign aircraft may be operated in the U.S. by pilots who have in their personal possession current pilot certificates issued under FAR Part 61 or a pilot license issued to them or validated for them by the country in which the aircraft is registered.

253. AIRCRAFT CERTIFICATION. Government aircraft operations that are no longer eligible for public aircraft status must meet civil airworthiness standards for certification of civil aircraft. This includes the aircraft's engines and propellers as well as the aircraft as a whole. All civil aircraft must have a current airworthiness certificate to operate in the national airspace system (NAS). All civil aircraft must meet the following requirements:

A. The aircraft must have an effective U.S. registration certificate on board during all operations as required by FAR § 91.203

B. An appropriate and current airworthiness certificate must be displayed in accordance with FAR § 91.203(b). An airworthiness certificate is effective as long as the maintenance, preventative maintenance, and alterations are performed in accordance with FAR Parts 21, 43, and 91, as appropriate, and the aircraft is registered in the United States.

C. The aircraft must have been inspected in accordance with FAR § 91.409 within the preceding 12 months.

(1) If the government agency plans to use a progressive inspection program, it must submit a written request to the FAA. The request must be sent to the FSDO having jurisdiction over the area in which the applicant is located and the applicant must be able to meet the requirements identified in FAR § 91.409(d).

(2) Large airplanes, turbojet multi-engine airplanes, turbopropeller-powered multiengine airplanes, and turbine-powered rotorcraft must have a program approved that meets the requirements of FAR § 91.409(e).

D. FAR Part 43 prescribes the rules governing the maintenance, preventative maintenance, rebuilding, and alteration of civil U.S.-registered aircraft. All maintenance and required inspections must have been completed by a person authorized under FAR §§ 43.3 and 43.7. Additionally, the maintenance and inspections performed must be recorded in accordance with FAR §§ 43.9 and 43.11.

E. Any alterations to the aircraft must have been accomplished and returned to service by an appropriately certified and authorized person under FAR Part 43.

F. Aircraft operations used for compensation or hire must be performed in accordance with the appropriate Air Carrier Certificate.

G. Government agencies may conduct both public and civil aircraft operations with the same aircraft. Aircraft which hold airworthiness certificates should be handled as follows:

(1) If the operation is a public aircraft operation and no modifications are made to the aircraft, the airworthiness certificate may be displayed in the aircraft as required by FAR § 91.203(b).

(2) When the public aircraft operation involves altering the aircraft temporarily, it is not necessary for the operator to surrender the airworthiness certificate or remove it from the aircraft. However, an inspection and log book entry will be required prior to the aircraft operating as a civil aircraft. For example, when the public aircraft operations requires the removal of a door during the "Public Aircraft" operation, the door installation and return to service must be performed by an authorized individual before the aircraft is operated as a civil aircraft.

(3) Where the modification is substantial, and involves more than the simple removal and/or installation of equipment, the operator should obtain the required FAA-approval before conducting civil aircraft operations. Where the modification is such that it permanently invalidates the airworthiness certificate of the aircraft, the FSDO should seek the voluntary surrender of the certificate. If the aircraft owner refuses to surrender the certificate, the FSDO should follow the procedures in FAA Order 2150.3A, Compliance and Enforcement Program.

(4) The FAA has allowed a certificate holder who also conducts public aircraft operations to retain the aircraft on its operations specifications when certain requirements provide that permanent installations and modifications are approved by the FAA. Temporary alterations must be corrected and the appropriate inspection and maintain entries must be made before the aircraft is returned to service.

NOTE: An operator of an aircraft operated in public aircraft status for any period of time cannot obtain a standard airworthiness certificate without showing that the aircraft meets all the criteria for that airworthiness certificate as prescribed by the regulations. Making such a determination may be difficult when the aircraft has not been maintained, altered, or inspected in accordance with the regulations. To facilitate receiving a standard airworthiness certificate, the aircraft records should indicate, among other requirements, that the aircraft has been maintained according to the manufacturer's instructions, and that any modifications to the aircraft either were removed or approved by the FAA.

255. TYPE–CERTIFICATION. Prior to airworthiness certification, the type design must be certificated by the FAA. Title 49 United States Code (U.S.C), § 44705 (formerly § 603(c) of the FA Act of 1958) makes a type–certificate a prerequisite for issuance of airworthiness certificates. Each government operator who wishes to determine the eligibility of its aircraft for civil operations must contact the responsible geographic aircraft certification office (ACO) for assistance in seeking either:

- Design approval for aircraft that has been type–certificated in the past
- Type–certification approval of aircraft that has been operated in the past under public aircraft status without a type–certificate

257. AIRCRAFT PREVIOUSLY TYPE–CERTIFICATED. If the aircraft was originally built to an FAA type–certificate, it will be necessary for the ACO to review the type–certificate data and make a comparison of the aircraft's current design and condition. The applicant will provide the FAA ACO with technical information necessary to assist in the following:

- Review of type design for any engineering changes or modifications
- Listing of replacement parts and technical data on the replacement parts
- Review of Airworthiness Directives (AD) that have applied
- Review of previous operating regimes

- An application of later regulatory amendments or special conditions for any changes found necessary to establish current airworthiness standards for safe design (if applicable)

NOTE: It is important that the applicant provide accurate records of any major and or minor changes necessary to establish the current design. The applicant should update all maintenance manuals as necessary. If there has been a substantial change in the type design, e.g., in the configuration, power, power limitations, speed limitations, or weight that have proven so extensive that a substantially complete investigation of compliance with the applicable regulations is required, the owner will be required to apply for a new type–certificate.

259. AIRCRAFT WITH NO PRIOR CERTIFICATION. It is unlikely that the FAA will be able to grant exemptions from type–certification and airworthiness requirements for aircraft that have no history of civil certification. However, if a government operator still wishes to apply, it should file an application for type–certificate on FAA Form 8110.12. The applicant must submit for approval all type design data for the aircraft, including the aircraft's engines and propellers, to the ACO in its geographic area. The application must be accompanied by a three-view drawing and available basic data so that a preliminary regulatory certification basis may be established. The applicable airworthiness certification regulations, FAR Parts 23, 25, 27, 33, 35, etc., will be those that are in effect on the date of application for the certificate, unless otherwise noted in the regulations. The applicant must make all inspections and tests available to allow the FAA to conduct a complete certification compliance program, including all flight and ground tests, inspections, and test analyses necessary to determine compliance with the applicable requirements of the FAR's.

261. AIRWORTHINESS CERTIFICATION. Before a standard airworthiness certificate can be issued, the applicant must show that:

- The aircraft conforms to its approved type design and is in condition for safe operation
- Any alterations were accomplished in accordance with an approved Supplemental Type–certificate (STC) or other FAA-approved data, such as a field approval as reflected by the issuance of an FAA Form 337, "Major Repair or Alteration"
- All applicable AD's have been complied with concerning the aircraft in question
- If altered while in another category, the aircraft continues to meet, or has been returned to, its approved type design configuration and is in a condition for safe operation

263. PROCEDURES FOR OBTAINING AN AIRWORTHINESS CERTIFICATE. Applicants interested in obtaining an airworthiness certificate must follow the following procedures.

A. Applicants are required to submit a properly executed "Application for Airworthiness," FAA Form 8130-6, and any other documents called for in FAR Parts 21 and 45 for certification. An applicant may obtain an FAA Form 8130-6 from the local manufacturing inspection district office (MIDO) or FSDO. The applicant must have completed and signed the appropriate sections prior to submitting it to the FAA.

B. The applicant is required to make available for inspection and review the aircraft, aircraft records, and any other data necessary to establish conformity to its type design.

C. The applicant must properly register the aircraft in accordance with FAR Part 47, "Aircraft Registration."

D. The applicant is also required to show that the aircraft complies with the noise standards of FAR §§ 21.93(b), 21.183(e), FAR Part 36, or FAR Part 91, as appropriate. This may be demonstrated through the use of data. Also, the applicant is required to show that the aircraft's fuel venting and exhaust emission systems comply with the requirements of FAR Part 34. In addition, the applicant must show the aircraft meets the applicable passenger emergency exit requirements of FAR § 21.183(f) and Special Federal Aviation Regulation (SFAR) 41.

E. During the course of the certification process the FAA will review records and documentation to the extent necessary to establish that:

- All of the required records and documentation are provided for the aircraft; i.e., an up-to-date approved flight manual, a current weight and balance report, equipment list, maintenance records, FAA-accepted Instructions for Continued Airworthiness (ICAW) and/or FAA-acceptance maintenance manual(s) (MM), and any other manuals required by FAR §§ 21.31, 21.50, 23.1529, 25.1529, 27.1529, 29.1529, 33.4 and 35.4. These documents must be in the English language
- The applicant should ensure that the appropriate markings are present in accordance with FAR Part 45. The applicant should make available the Type–certificated Data Sheets

(TCDS), aircraft specification, or aircraft listing that is applicable

- The inspection records and technical data should reflect that the aircraft conforms to the type design, and all required inspections, including those provided for in FAR § 21.183(d)(2), which provides for a 100 hour inspection, as described in FAR § 43.15 and Appendix D. The applicant must also show that the tests the aircraft has been subjected to have been satisfactorily completed, the records completed, and reflect no unapproved design changes

- The aircraft has been flight tested, if required. If it has not been flight tested, the FAA may issue a special airworthiness certificate as provided for in FAR §§ 21.35 and 21.191(b). The flight test must be recorded in the aircraft records in accordance with FAR § 91.417(a)(2)(i) as time in service as defined in FAR Part 1. Aircraft assembled by a person other than the manufacturer (e.g., a dealer or distributor) must have been assembled and, when applicable, flight tested in accordance with the manufacturer's FAA-approved procedures

- Large airplanes, turbojet, or turbopropeller multiengine airplanes must comply with the inspection program requirements of FAR § 91.409(f) or other FAR's referenced therein. A supplemental structural inspection program is also required for certain large transport category airplanes. Reference AC 91-56, "Supplemental Structural Inspection Program for Large Transport Category Airplanes"

F. *Inspection of the Aircraft.* Aircraft submitted by the applicant for inspection will be inspected, by an airworthiness inspector for the following:

- The nationality and registration marks and identification plate should be displayed and marked in accordance with FAR Part 45. The information presented should agree with the application for airworthiness certification

- All equipment, both required and optional, should be properly installed and listed in the aircraft equipment list

- Instruments and placards should be located in the appropriate places, installed, and properly marked in the English language

- All applicable AD's must have been complied with and appropriately recorded

- The aircraft should conform to its approved U.S. type–certificate and should be in a condition for safe operation

- All aircraft systems should have been satisfactorily checked for proper operation. The operation of the engine(s) and propeller(s) should be checked in accordance with the aircraft manufacturer's instructions

G. If it is determined that the aircraft meets the requirements for the certification requested, the FAA airworthiness inspector or authorized designee will:

- Make an aircraft log book entry per paragraph 237 (a) of FAA Order 8130.2C entitled "Airworthiness Certification of Aircraft and Related Products"

- Issue FAA Form 8100-2, "Standard Airworthiness Certificate"

- Complete sections V and VIII of FAA Form 8130-6, as appropriate

- Examine, review, and route the certification files as appropriate

H. If the aircraft does not meet the requirements for the certification requested and the Airworthiness Certificate is denied, the applicant will receive a letter stating the reason(s) for denying the certificate. A copy of the denial letter will be attached to the application and forwarded to the FAA Aircraft Registry to be made a part of the aircraft record.

265. EXEMPTIONS. The FAA Administrator has the authority, in accordance with FAR Part 11, to grant exemptions to units of government, whose aircraft operations have lost their public aircraft status, if certain requirements are met. Exemptions will be granted only if it is clearly in the public interest. The Administrator may issue an exemption, to a unit of government, only if:

A. The Administrator certifies that the aviation safety program of the unit of government is effective and appropriate to ensure safe operations of the type of aircraft operated by the unit of government.

B. The Administrator finds that granting the exemption is necessary to prevent an undue economic burden on the unit of government. To show undue economic burden, the petitioner for exemption should submit the following information with their petition for exemption:

- The purpose and duration of the aircraft operations for which exemption is sought

- The estimated cost of bringing the petitioner's aircraft operations into compliance with civil aircraft requirements
- The estimated cost of obtaining the same aircraft operations from a private operator.

The petitioner should also submit certification of the following types of information, as appropriate:

- That the petitioner has made a reasonable search and solicitation for services that would meet the petitioner's needs and that no such services were available
- That the petitioner lacks the resources to pay for the required services
- That the petitioner, by acquiring the services of a private operator, would incur additional expenses resulting from existing aircraft lease payments, mortgages, prorated cost sharing agreements, or other financial obligations
- That adequate service by private operators was unavailable at less than 110 percent of reasonable rates. Reasonable rates are those that are normally available and paid by the petitioner when doing business with private operators
- That unique circumstances, such as remote operations, are present which require special aircraft or pilot skills that are not available except at costs exceeding 110 percent of the costs the petitioner would incur when engaging in a similar operation in the area

NOTE: In the interest of administrative efficiency, the Administrator's authority to grant exemptions to units of government has been delegated to the Director, Flight Standards Service, and the Director, Aircraft Certification Service.

267. GOVERNMENT AIRCRAFT OPERATOR SURVEILLANCE. Government aircraft operators, holding any type of FAA certification, will be included in the normal surveillance activities such as, spot inspections of the aircraft and aircraft records. This includes any aircraft exclusively leased to the Federal government. Any aircraft or operation certificated by the FAA is subject to this surveillance regardless of whether they are operating as "public" or "civil." For example, if an operator's operation is considered "public" or "private" and the hold an airworthiness certificate, their maintenance records are eligible for review. If you encounter an operator who states they are operating under the "public" status and you have questions concerning that operation, contact your regional public aircraft coordinator for assistance.

NOTE: Government-owned aircraft operators who are conducting public aircraft operations must be included in the FSDO's annual planned surveillance activities to ensure that their status remains unchanged.

268.–276. RESERVED

FIGURE 1.4.8.1.

PUBLIC AIRCRAFT DETERMINATION—FLOW DIAGRAM

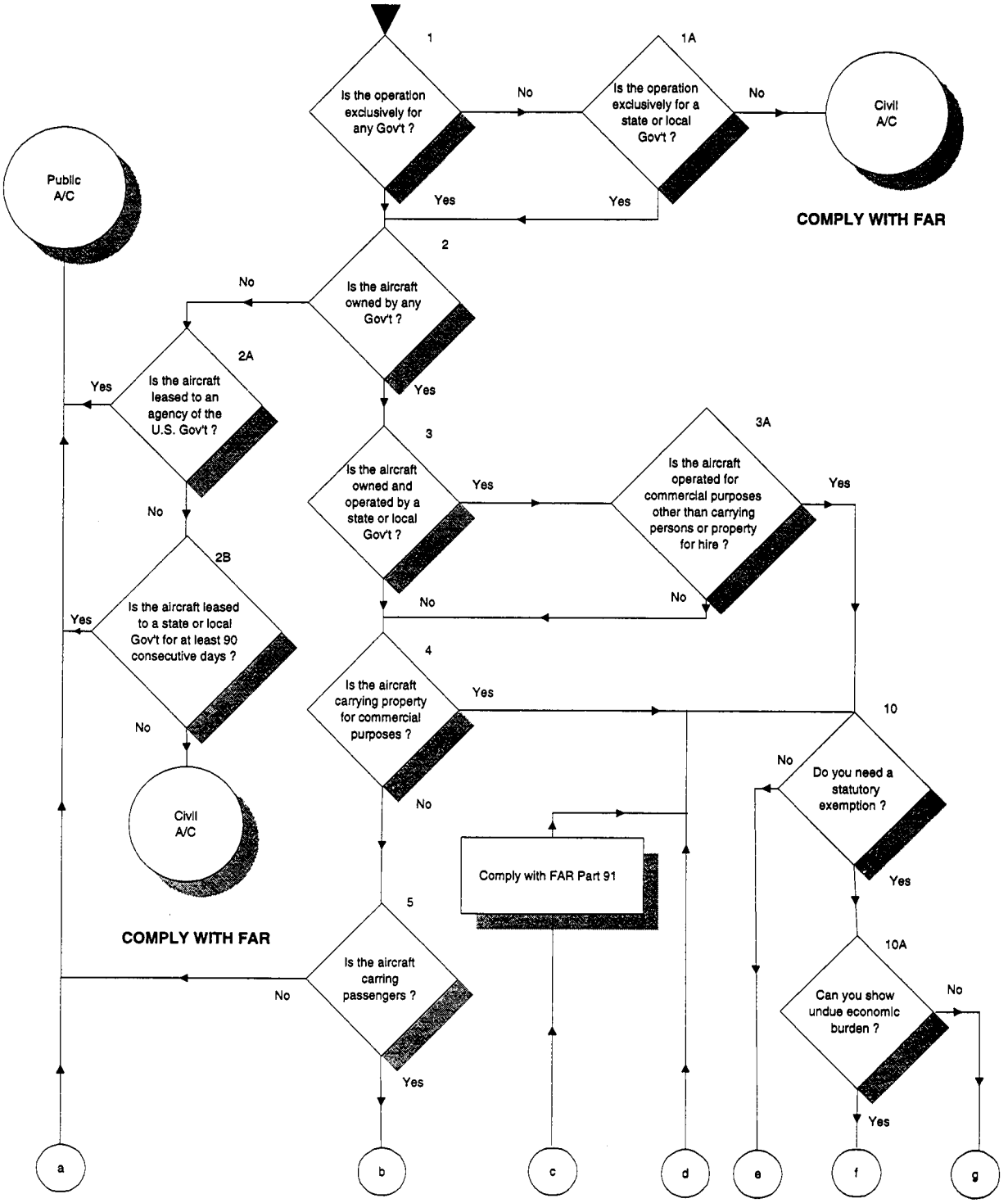
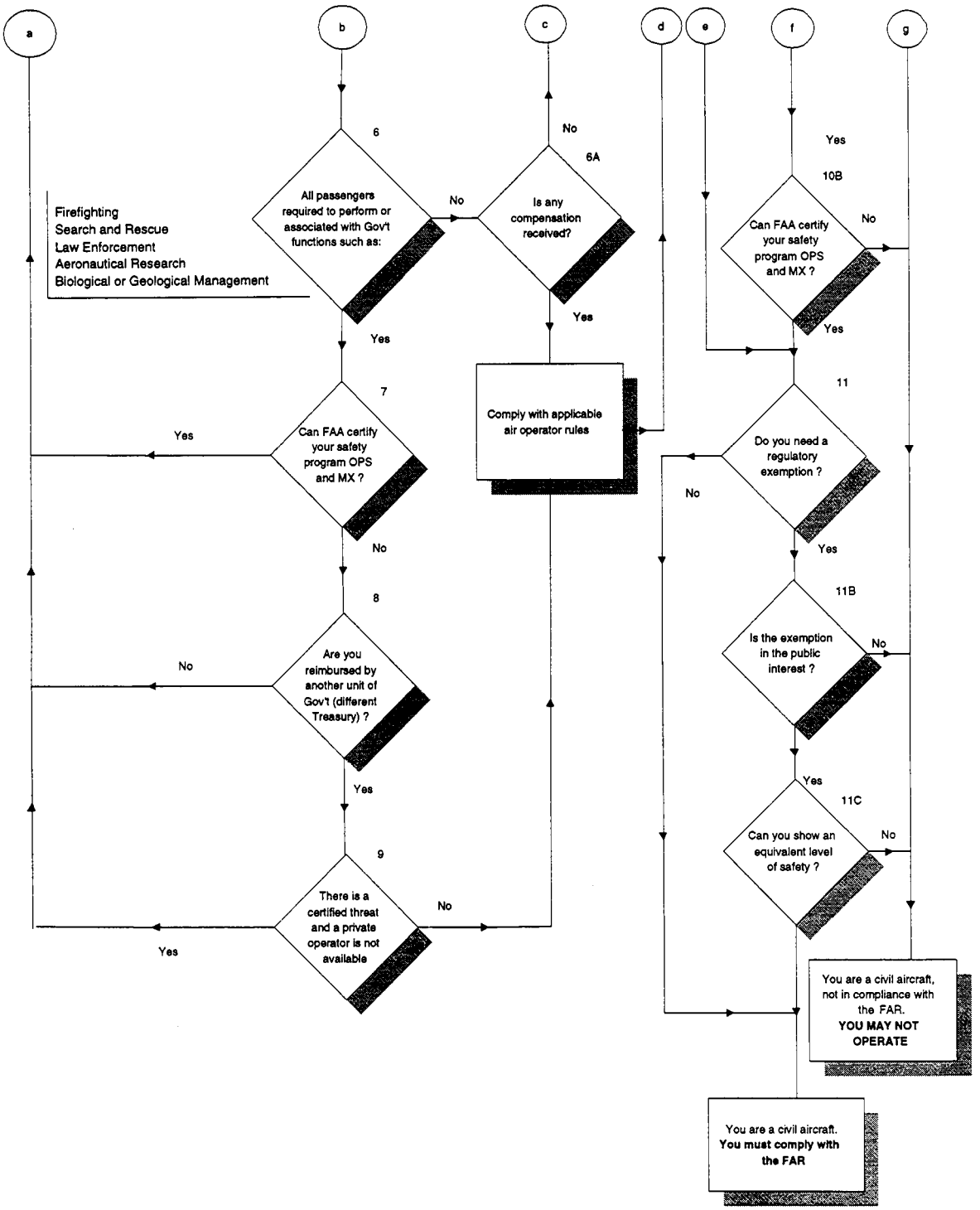


FIGURE 1.4.8.1.–Continued

PUBLIC AIRCRAFT DETERMINATION—FLOW DIAGRAM



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VOLUME 2. AIR OPERATOR CERTIFICATION

CHAPTER 1. GENERAL

SECTION 1. GENERAL INFORMATION

1. PURPOSE.

A. This volume provides direction and guidance for the certification of organizations certificated under Special Federal Aviation Regulations (SFAR) 38-2 and required to operate in accordance with Federal Aviation Regulations (FAR) Parts 121 and/or 135. FAR 121 and 135 require that an applicant for an air carrier certificate or operating certificate must submit an application in a ''form and manner'' prescribed by the Administrator, and contain any information required by the Administrator. Chapters 2 and 3 describe the ''form and manner'' and kind of information that must be submitted for the application to be considered acceptable.

B. Section 2 provides information on various types of air operator certificates. Section 3 provides direction and guidance on the assignment of certificate responsibilities and certification projects. Section 4 provides direction on obtaining precertification numbers, final certificate numbers, and background information on certificate number construction.

3. THE CERTIFICATION PROCESS.

A. Chapter 2 describes the process which both the applicant and Federal Aviation Administration (FAA) must undergo to ensure the applicant complies with all certification and operational requirements before certificate issuance. The certification process provides for interaction between the applicant and the FAA from initial inquiry to certificate issuance or denial. This process is designed to ensure that an applicant's programs, systems, and intended methods of compliance are thoroughly reviewed, evaluated, and tested. The process, once completed, provides reasonable assurance that the applicant's infrastructure (programs, methods, and systems) will result in continued compliance after certification. The certification process consists of the following five phases which are individually described in chapter 2. (see figure 2.1.1.3.)

- Preapplication
- Formal Application
- Document Compliance
- Demonstration and Inspection
- Certification

B. The descriptions in chapter 2 of the Document Compliance Phase and the Demonstration and Inspection Phase do not provide detailed discussions of what constitutes acceptable or approvable programs, systems, or methods. Instead, these discussions present the types of activities that take place during these phases and emphasize planning required work functions. Detailed discussions on specific subject matter such as manuals, record keeping systems, training programs, proving tests, are in volumes 3, 4, 5, and 6.

C. The flow chart at the end of chapter 2 provides an overview of the certification process. This chart is designed to be unfolded and referred to while reading the narrative description of the five phases of the certification process. Such simultaneous reference will assist the inspector in understanding the process. The flow chart should also be referred to at various stages during the certification project. The chart is particularly useful in determining whether the ''Schedule of Events'' is reasonable in terms of sequence, timeliness, and inspector resource availability. It also provides a perspective on how a particular event affects other events and is an important reference for planning various activities during the certification project.

D. There are two basic organizational certification job aids available on the district office job aid disc (JAD) which should be used to assist in planning work functions during a certification project and as a checklist for items or events as they are accomplished. The job aids also reference where detailed discussions on major subject areas can be found in this handbook. The job aids (figures 2.1.1.1. and 2.1.1.2.) are tailored to the following types of operations:

- FAR Part 121 and FAR Part 135 operations
- FAR Part 135 single pilot operations and single pilot-in-command (PIC) operations

E. The schedule of events which is also available on the JAD is designed to allow the applicant to pro-

vide his best estimate of when an event or item will occur or be ready for FAA inspection. Space is provided for the FAA to record revisions to the applicant's estimates or to record when the event or item actually occurred.

5. CHAPTER 3, SELECTED PRACTICES. Chapter 3 provides selected information for the certification of organizations when existing situations make it impractical to fully comply with the certification process described in chapter 2. Chapter 3 also provides direction and guidance on the management of other selected situations associated with organizational certification.

The following types of information are discussed in chapter 3:

- FAR Part 135 transitioning to FAR Part 121
- Amendments to certificates, surrender, suspension, revocation, and lost certificates
- Bankruptcies, mergers, and acquisitions of air carrier operational assets
- Certification process for FAR Part 135 single pilot and single PIC operators and basic FAR Part 135 operators

7. CHAPTER 4, FOREIGN AIR CARRIERS. Foreign air carriers are not issued certificates by the FAA. FAR § 129.11, however, requires foreign air carriers operating to the United States to be issued operations specifications. Chapter 4 provides direction and guidance for the management of foreign air carrier operations specifications and contains information on an FAA inspector's authority and responsibilities with respect to foreign air carriers. Chapter 4 is self-contained and most of the information concerning foreign air carriers needed by inspectors will be found in this chapter.

8.–12. RESERVED.

FIGURE 2.1.1.1.
AIR CARRIER CERTIFICATION JOB AID AND SCHEDULE OF EVENTS
PART 121 OR PART 135

OFFICIAL NAME OF COMPANY					LOCATION ADDRESS			
MAILING ADDRESS (if different from location)					PRECERTIFICATION NO.			
PTRS CODE	OPS 1201	AWS 3201	AVI 5201		INSP. INITIAL	DATE RECEIVED/ ACCOMPLISHED	DATE RETURNED FOR CHANGES	REF.
	I. PREAPPLICATION PHASE							
	A. INITIAL ORIENTATION: Inspector _____ 1. VIDEO PRESENTATION 2. CERTIFICATION ADVISORY CIRCULAR PROVIDED TO APPLICANT 3. PREAPPLICATION STATEMENT OF INTENT (PASI): a. Forwarded to regional office b. Precertification number _____							
	B. CERTIFICATION TEAM DESIGNATED (at least one operations, one maintenance, and one avionics inspector) Name / Specialty CPM _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____							
	C. CONDUCT PREAPPLICATION MEETING 1. VERIFY PASI INFORMATION 2. OVERVIEW OF CERTIFICATION PROCESS 3. PROVIDE CERTIFICATION PACKAGE a. Certification Job Aid b. Schedule of Events c. Advisory Circular Checklist d. Operations Specifications data sheet e. Other Applicable Publications and Documents 4. EXPLAIN FORMAL APPLICATION SUBMISSIONS							
REMARKS:								

FIGURE 2.1.1.1.
AIR CARRIER CERTIFICATION JOB AID AND SCHEDULE OF EVENTS
PART 121 OR PART 135 (CONTINUED)

PTRS CODE	II. FORMAL APPLICATION PHASE	INSP. INITIAL	DATE RECEIVED/ ACCOMPLISHED	DATE RETURNED FOR CHANGES	REF.
	A. REVIEW APPLICANT'S SUBMISSIONS 1. FORMAL APPLICATION LETTER				
	a. Full and official name (legal)				
	b. Mailing address				
	c. Primary operating location (principal operations base)				
	d. Name and address of applicants agent for service				
	e. Key Management Personnel Names				
	2. FORMAL APPLICATION ATTACHMENTS				
	a. Schedule of events				
	b. Initial compliance statement				
	c. Company general manuals (Operations and Maintenance)				
	d. Initial new hire training curriculums (Crewmembers & Dispatchers) Basic Indoctrination Emergency Training Ground Training Flight Training				
	e. Management qualification resumes				
	f. Doc's of purchase/contract/lease/letters of intent				
	B. EVALUATE FAA RESOURCE CAPABILITY BASED ON SCHEDULE OF EVENTS				
REMARKS:					
	C. FORMAL APPLICATION MEETING 1. SCHEDULE MEETING Date: _____ Time: _____ 2. DISCUSS EACH SUBMISSION 3. RESOLVE DISCREPANCIES/OPEN ITEMS 4. REVIEW CERTIFICATION PROCESS 5. REVIEW IMPACT IF SCHEDULE OF EVENTS NOT MET				
	D. ISSUE LETTER ACCEPTING/REJECTING APPLICATION				
REMARKS:					

FIGURE 2.1.1.1.
AIR CARRIER CERTIFICATION JOB AID AND SCHEDULE OF EVENTS
PART 121 OR PART 135 (CONTINUED)

PTRS CODE	III. DOCUMENT COMPLIANCE PHASE	INSP. INITIAL	DATE RECEIVED/ ACCOMPLISHED	DATE RETURNED FOR CHANGES	REF.
REMARKS:					
	A. EVALUATE APPLICABLE TRAINING PROGRAMS 1. TRAINING CURRICULUMS				
	a. Basic Indoctrination				
	b. Emergency Training				
	c. Ground Training (Handling/Servicing/Deicing)				
	d. Flight Training				
	e. Recurrent Training				
	f. Transition/Upgrade Training				
	g. Differences Training				
	h. Security				
	i. Hazardous Materials				
	j. Check Airmen/Flight Instructor				
	k. Maintenance Personnel				
	l. Inspection Personnel				
	2. DISPATCHER TRAINING				
REMARKS:					
	B. EVALUATE MANAGEMENT QUALIFICATIONS 1. GENERAL MANAGER				
	2. DIRECTOR OF OPERATIONS				
	3. DIRECTOR OF MAINTENANCE				
	4. CHIEF INSPECTOR				
	5. CHIEF PILOT				
	6. REQUEST FOR DEVIATION LETTER (IF APPLICABLE)				
REMARKS:					

FIGURE 2.1.1.1.
AIR CARRIER CERTIFICATION JOB AID AND SCHEDULE OF EVENTS
PART 121 OR PART 135 (CONTINUED)

PTRS CODE	III. DOCUMENT COMPLIANCE PHASE (CONTINUED)	INSP. INITIAL	DATE RECEIVED/ ACCOMPLISHED	DATE RETURNED FOR CHANGES	REF.
	C. EVALUATE APPLICABLE MANUALS 1. COMPLETED GENERAL OPERATIONS MANUAL				
	a. Emergency Exit Plan				
	b. Carry-on Luggage Plan				
	2. COMPLETED GENERAL MAINTENANCE MANUAL				
	3. FAA-APPROVED AIRPLANE FLIGHT MANUAL				
	4. COMPANY AIRCRAFT OPERATIONS MANUAL				
	5. AIRCRAFT CHECKLISTS				
	a. Normal				
	b. Abnormal				
	c. Emergency				
	6. FLIGHT ATTENDANT MANUAL				
	7. DISPATCHER/FLIGHT FOLLOWING/LOCATION				
	8. STATION OPERATIONS				
	9. COMPANY EMERGENCY MANUAL				
	10. AIRPORT DATA & EN ROUTE MANUAL (Charts and plates)				
	11. AIRPORT/RUNWAY ANALYSIS (Performance)				
	12. MINIMUM EQUIPMENT LIST				
	13. CONFIGURATION DEVIATION LIST				
	14. MAINTENANCE TECHNICAL MANUALS:				
	a. Airframe/Powerplant				
	b. Structural Repair				
	c. Parts Catalogue				
	d. Inspection Procedures				
	e. Manufacturer's or Vendor's Manual				
	f. Wiring Manual				
	g. Overhaul Manual				
	15. FUELING/REFUELING/DEFUELING				
	16. GROUND SERVICING MANUAL				
	17. WEIGHT AND BALANCE CONTROL PROGRAM				
	18. HAZARDOUS MATERIAL				
	19. SECURITY				
	20. RELIABILITY PROGRAM				

REMARKS:

FIGURE 2.1.1.1.
AIR CARRIER CERTIFICATION JOB AID AND SCHEDULE OF EVENTS
PART 121 OR PART 135 (CONTINUED)

PTRS CODE	III. DOCUMENT COMPLIANCE PHASE (CONTINUED)	INSP. INITIAL	DATE RECEIVED/ ACCOMPLISHED	DATE RETURNED FOR CHANGES	REF.
	C. EVALUATE APPLICABLE MANUALS (CONTINUED) 21. CONTINUOUS AIRWORTHINESS MAINT. PROG.				
	22. EMERGENCY PLAN/NOTIFICATION				
	23. PASSENGER BRIEFING CARDS				
	D. OTHER EVALUATIONS 1. AIRCRAFT LEASE				
	2. MAINTENANCE CONTRACTS/AGREEMENTS				
	3. SERVICING CONTRACTS/AGREEMENTS				
	4. EXEMPTION/DEVIATION REQUESTS/JUSTIFICATION				
	5. EMERGENCY EVACUATION DEMONSTRATION PLAN				
	6. AIRCRAFT PROVING TEST PLAN				
	7. ENVIRONMENTAL ASSESSMENT				
	8. FINAL COMPLIANCE STATEMENT				
	9. INITIATE OPSPECS PREPARATION DATA SHEET				
	10. TRAINING CONTRACTS				
	11. DEICING/ANTI ICING				
	11. EXIT ROW SEATING				
	11. DRUG PROGRAM				
	11. ALCOHOL MISUSE				
REMARKS:					

FIGURE 2.1.1.1.
AIR CARRIER CERTIFICATION JOB AID AND SCHEDULE OF EVENTS
PART 121 OR PART 135 (CONTINUED)

PTRS CODE	IV. DEMONSTRATION & INSPECTION PHASE	INSP. INITIAL	DATE RECEIVED/ ACCOMPLISHED	DATE RETURNED FOR CHANGES	REF.
	A. EVALUATE APPLICANT CONDUCTING TRAINING 1. TRAINING FACILITIES				
	2. TRAINING SCHEDULES:				
	3. FLIGHT CREWMEMBER TRAINING EVALUATION				
	a. Basic Indoctrination				
	b. Emergency Training				
	c. Ground Training				
	d. Flight Training				
	e. Differences Training				
	4. CHECK AIRMEN/INSTRUCTOR				
	5. CABIN CREW				
	a. Basic Indoctrination				
	b. Emergency Training				
	c. Ground Training				
	6. DISPATCHER/FLIGHT FOLLOWING/LOCATING				
	7. HAZARDOUS MATERIALS				
	8. SECURITY TRAINING				
	9. MAINTENANCE TRAINING:				
	a. Mechanics/Repairmen				
	b. Inspection Personnel				
	c. Ground Handling/Servicing				
	d. Station Personnel				
REMARKS:					
	B. AIRMAN TESTING/CERTIFICATION				
	1. PILOTS				
	2. FLIGHT ENGINEERS				
	3. DISPATCHERS				
	4. FLIGHT ATTENDANT				
REMARKS:					

FIGURE 2.1.1.1.
AIR CARRIER CERTIFICATION JOB AID AND SCHEDULE OF EVENTS
PART 121 OR PART 135 (CONTINUED)

PTRS CODE	IV. DEMONSTRATION & INSPECTION PHASE (CONTINUED)	INSP. INITIAL	DATE RECEIVED/ ACCOMPLISHED	DATE RETURNED FOR CHANGES	REF.
	C. AIRCRAFT CONFORMITY INSPECTION				
	D. MAIN OPERATIONS BASE				
	E. MAIN MAINTENANCE BASE				
	F. LINE/STATION FACILITIES				
	G. DISPATCH/FLIGHT FOLLOWING/FLIGHT LOCATING Facilities				
	H. RECORDKEEPING:				
	1. Crewmember:				
	a. Training				
	b. Flight & Rest Times				
	c. Qualification				
	I. MAINTENANCE:				
	1. Aircraft Records				
	2. Personnel Training				
	3. Inspector Training/Qualification				
	4. Personnel Duty Time Limitations				
	J. FLIGHT/TRIP RECORDS				
	K. EMERGENCY EVACUATION DEMONSTRATION				
	L. DITCHING DEMONSTRATION				
	M. AIRCRAFT PROVING TEST				
	N. PROOF OF DOT ECONOMIC AUTHORITY				

REMARKS:

FIGURE 2.1.1.1.
AIR CARRIER CERTIFICATION JOB AID AND SCHEDULE OF EVENTS
PART 121 OR PART 135 (CONTINUED)

PTRS CODE	IV. DEMONSTRATION & INSPECTION PHASE (CONTINUED)	INSP. INITIAL	DATE RECEIVED/ ACCOMPLISHED	DATE RETURNED FOR CHANGES	REF.
	C. AIRCRAFT CONFORMITY INSPECTION				
	D. MAIN OPERATIONS BASE				
	E. MAIN MAINTENANCE BASE				
	F. LINE/STATION FACILITIES				
	G. DISPATCH/FLIGHT FOLLOWING/FLIGHT LOCATING Facilities				
	H. RECORDKEEPING:				
	1. Crewmember:				
	a. Training				
	b. Flight & Rest Times				
	c. Qualification				
	I. MAINTENANCE:				
	1. Aircraft Records				
	2. Personnel Training				
	3. Inspector Training/Qualification				
	4. Personnel Duty Time Limitations				
	J. FLIGHT/TRIP RECORDS				
	K. EMERGENCY EVACUATION DEMONSTRATION				
	L. DITCHING DEMONSTRATION				
	M. AIRCRAFT PROVING TEST				
	N. PROOF OF DOT ECONOMIC AUTHORITY				

REMARKS:

FIGURE 2.1.1.2
AIR CARRIER CERTIFICATION JOB AID AND SCHEDULE OF EVENTS SINGLE PILOT, SINGLE PILOT-IN-COMMAND, OR BASIC PART 135 OPERATOR

OFFICIAL NAME OF COMPANY					LOCATION ADDRESS			
MAILING ADDRESS (if different from location)					PRECERTIFICATION NO.			
PTRS CODE	OPS	AWS	AVI		INSP. INITIAL	DATE RECEIVED/ ACCOMPLISHED	DATE RETURNED FOR CHANGES	REF.
	I. PREAPPLICATION PHASE							
	A. INITIAL ORIENTATION: Inspector _____ 1. VIDEO PRESENTATION 2. CERTIFICATION ADVISORY CIRCULAR PROVIDED TO APPLICANT 3. PREAPPLICATION STATEMENT OF INTENT (PASI): a. Forwarded to regional office b. Precertification number _____							
	B. CERTIFICATION TEAM DESIGNATED (one operations, one maintenance inspector, an avionics inspector should be available) Name Specialty CPM _____ _____ _____ _____ _____ _____							
	C. CONDUCT PREAPPLICATION MEETING 1. VERIFY PASI INFORMATION 2. OVERVIEW OF CERTIFICATION PROCESS 3. PROVIDE CERTIFICATION PACKAGE a. Certification Job Aid b. Schedule of Events c. Advisory Circular Checklist d. Operations Specifications data sheet e. Other Applicable Publications and Documents 4. EXPLAIN FORMAL APPLICATION SUBMISSIONS							
REMARKS:								

FIGURE 2.1.1.2
AIR CARRIER CERTIFICATION JOB AID AND SCHEDULE OF EVENTS SINGLE PILOT, SINGLE PILOT-IN-COMMAND, OR BASIC PART 135 OPERATOR (CONTINUED)

PTRS CODE	II. FORMAL APPLICATION PHASE	INSP. INITIAL	DATE RECEIVED/ ACCOMPLISHED	DATE RETURNED FOR CHANGES	REF.
	A. REVIEW APPLICANT'S SUBMISSIONS 1. FORMAL APPLICATION LETTER				
	a. Full and official name (legal)				
	b. Mailing address				
	c. Primary operating location (principal operations base)				
	d. Name and address of applicants agent for service				
	e. Key Management Personnel Names				
	2. FORMAL APPLICATION ATTACHMENTS				
	a. Schedule of events				
	b. Initial compliance statement				
	c. Company general manuals (Operations and Maintenance)				
	d. Initial new hire training curriculums (Crewmembers & Dispatchers) Basic Indoctrination Emergency Training Ground Training Flight Training				
	e. Management qualification resumes				
	f. Doc's of purchase/contract/lease/letters of interest				
	B. EVALUATE FAA RESOURCE CAPABILITY BASED ON SCHEDULE OF EVENTS				
REMARKS:					
	C. FORMAL APPLICATION MEETING 1. SCHEDULE MEETING Date: _____ Time: _____ 2. DISCUSS EACH SUBMISSION 3. RESOLVE DISCREPANCIES/OPEN ITEMS 4. REVIEW CERTIFICATION PROCESS 5. REVIEW IMPACT IF SCHEDULE OF EVENTS NOT MET				
	D. ISSUE LETTER ACCEPTING/REJECTING APPLICATION				
REMARKS:					

FIGURE 2.1.1.2
AIR CARRIER CERTIFICATION JOB AID AND SCHEDULE OF EVENTS SINGLE PILOT, SINGLE PILOT-IN-COMMAND, OR BASIC PART 135 OPERATOR (CONTINUED)

PTRS CODE	III. DOCUMENT COMPLIANCE PHASE	INSP. INITIAL	DATE RECEIVED/ ACCOMPLISHED	DATE RETURNED FOR CHANGES	REF.
	A. EVALUATE APPLICABLE TRAINING PROGRAMS 1. TRAINING CURRICULUMS				
	a. Check Airmen				
	b. Flight Instructor				
	c. Recurrent Training				
	d. Transition/Upgrade Training				
	e. Differences Training				
	f. Hazardous Materials				
	g. Security				
	h. Maintenance Personnel				
	i. Inspection Personnel				
	j. Ground Handling/Servicing				
	B. EVALUATE MANAGEMENT QUALIFICATIONS 1. PRINCIPAL OWNER				
	2. PRIN. OPERATIONS OFFICIAL (if applies)				
	C. EVALUATE APPLICABLE MANUALS OR PROCEDURES 1. FAA-APPROVED AIRPLANE FLIGHT MANUAL				
	2. AIRCRAFT CHECKLISTS a. Normal				
	b. Abnormal				
	c. Emergency				
	3. FLIGHT LOCATING PROCEDURES				
	4. AIRPORT/RUNWAY ANALYSIS (turbo jet only)				
	5. MINIMUM EQUIPMENT LIST				
	6. CONFIGURATION DEVIATION LIST (if applies)				
	7. MAINTENANCE TECHNICAL MANUAL AVAILABILITY				
	a. Airframe/Powerplant				
	b. Structural Repair				
	c. Parts Catalogue				
	d. Inspection Procedures				
	e. Manufacturer's or Vendor's Manual				
	f. Wiring Manual				
	g. Overhaul Manual				
	8. Completed General Manuals (Operations and Maintenance)				
	9. Company Aircraft Operations Manual				
	10. Station Operations				
	11. Company Emergency Manual				
	12. Airport Data & En Route Manual (Charts and plates)				

FIGURE 2.1.1.2
AIR CARRIER CERTIFICATION JOB AID AND SCHEDULE OF EVENTS SINGLE PILOT, SINGLE PILOT-IN-COMMAND, OR BASIC PART 135 OPERATOR (CONTINUED)

PTRS CODE	III. DOCUMENT COMPLIANCE PHASE (CONTINUED)	INSP. INITIAL	DATE RECEIVED/ ACCOMPLISHED	DATE RETURNED FOR CHANGES	REF.
	13. FUELING/REFUELING/DEFUELING				
	14. SECURITY				
	15. RELIABILITY PROGRAM				
	16. WEIGHT AND BALANCE CONTROL				
	17. HAZARDOUS MATERIAL				
	18. CONTINUOUS AIRWORTHINESS MAINT. PROG. (if applicable)				
	19. PASSENGER BRIEFING CARDS				
	D. OTHER EVALUATIONS 1. AIRCRAFT LEASE				
	2. MAINTENANCE CONTRACTS/AGREEMENTS				
	3. SERVICING CONTRACTS/AGREEMENTS				
	4. EXEMPTION/DEVIATION REQUESTS				
	5. FINAL COMPLIANCE STATEMENT				
	6. AIRCRAFT PROVING TEST PLAN (turbo jet only)				
	7. TRAINING CONTRACTS				
	8. ENVIRONMENTAL ASSESSMENT				
	9. EMERGENCY EVACUATION DEMONSTRATION PLAN				
	10. OPERATIONS SPECIFICATION DATA SHEET				

REMARKS:

FIGURE 2.1.1.2
AIR CARRIER CERTIFICATION JOB AID AND SCHEDULE OF EVENTS SINGLE PILOT, SINGLE PILOT-IN-COMMAND, OR BASIC PART 135 OPERATOR (CONTINUED)

PTRS CODE	IV. DEMONSTRATION & INSPECTION PHASE	INSP. INITIAL	DATE RECEIVED/ ACCOMPLISHED	DATE RETURNED FOR CHANGES	REF.
	A. EVALUATE APPLICANT CONDUCTING TRAINING 1. TRAINING FACILITIES				
	2. TRAINING SCHEDULES:				
	3. FLIGHT CREWMEMBER TRAINING EVALUATION				
	a. Basic Indoctrination				
	b. Emergency Training				
	c. Ground Training				
	d. Flight Training				
	e. Differences Training				
	4. CHECK AIRMEN/INSTRUCTOR				
	5. CABIN CREW				
	a. Basic Indoctrination				
	b. Emergency Training				
	c. Ground Training				
	6. DISPATCHER/FLIGHT FOLLOWING/LOCATING				
	7. HAZARDOUS MATERIALS				
	8. SECURITY TRAINING				
	9. MAINTENANCE TRAINING:				
	a. Mechanics/Repairmen				
	b. Inspection Personnel				
	c. Ground Handling/Servicing				
	d. Station Personnel				
	B. AIRMAN TESTING/CERTIFICATION				
	1. PILOTS				
	C. AIRCRAFT CONFORMITY INSPECTION				
	D. MAIN OPERATIONS BASE				
	E. MAIN MAINTENANCE BASE				
	F. LINE/STATION FACILITIES				
	G. DISPATCH/FLIGHT FOLLOWING/FLIGHT LOCATING Facilities				
	H. RECORDKEEPING:				
	1. Crewmember:				
	a. Training				
	b. Flight & Rest Times				
	c. Qualification				

FIGURE 2.1.1.2
AIR CARRIER CERTIFICATION JOB AID AND SCHEDULE OF EVENTS SINGLE PILOT, SINGLE PILOT-IN-COMMAND, OR BASIC PART 135 OPERATOR (CONTINUED)

PTRS CODE	IV. DEMONSTRATION & INSPECTION PHASE (CONTINUED)	INSP. INITIAL	DATE RECEIVED/ ACCOMPLISHED	DATE RETURNED FOR CHANGES	REF.
	I. MAINTENANCE:				
	1. Aircraft Records				
	2. Personnel Training				
	3. Inspector Training/Qualification				
	4. Duty Times				
	J. FLIGHT/TRIP RECORDS				
	K. EMERGENCY EVACUATION DEMONSTRATION				
	L. DITCHING DEMONSTRATION				
	M. AIRCRAFT PROVING TEST				
	N. PROOF OF DOT ECONOMIC AUTHORITY				

REMARKS:

FIGURE 2.1.1.2
AIR CARRIER CERTIFICATION JOB AID AND SCHEDULE OF EVENTS SINGLE PILOT, SINGLE PILOT-IN-COMMAND OR BASIC PART 135 OPERATOR (CONTINUED)

PTRS CODE	V. CERTIFICATION PHASE	INSP. INITIAL	DATE RECEIVED/ ACCOMPLISHED	DATE RETURNED FOR CHANGES	REF.
	A. APPROVE OPERATIONS SPECIFICATIONS				
	B. PRESENT CERTIFICATE & OPSPECS TO CERTIFICATE HOLDER				
	C. PREPARE CERTIFICATION REPORT				
	1. ASSEMBLE REPORT				
	a. Preapplication Statement of Intent				
	b. Certification Job Aid				
	c. Formal Application Letter				
	d. Schedule of Events				
	e. Final Compliance Statement				
	f. Proving Test Evaluation Report				
	g. Copy of Operations Specification				
	h. Copy of Certificate				
	i. Summary of Difficulties				
	j. Suggestions to Improve Certification Process				
	2. DISTRIBUTE REPORT				
REMARKS:					
	D. DEVELOP POSTCERTIFICATION SURVEILLANCE PROGRAM 1. WITHIN GEOGRAPHICAL AREA				
	2. OUTSIDE GEOGRAPHICAL AREA				
REMARKS:					

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B. This volume provides direction and guidance for the certification and issuance of Air Carrier Certificates and Operating Certificates to air operators required to comply with FAR Parts 121 and 135. It is important to understand the basis for issuance of a particular type of certificate and the type of operation authorized under the terms of that certificate. The following paragraphs are intended to enhance and standardize an inspector's understanding of the differences between an Air Carrier Certificate and an Operating Certificate.

15. COMMON CARRIAGE VS. PRIVATE CARRIAGE.

A. Common carriage means any operation for compensation or hire in which an operator holds itself out (by advertising or any other means), as willing to furnish transportation for any member of the public who seeks the services that the operator is offering. The operator openly offers a service for a fee to any and/or all members of the public.

B. Private carriage does not involve offering or holding out by the operator through advertising or any other means. Private carriage includes the following:

- Carriage of the operator's own employees or property
- Carriage of participating members of a club
- Carriage of persons and property which is only incidental to the operator's primary business enterprise
- Carriage of persons or property for compensation or hire under a contractual business arrangement between the operator and another person or organization, which did not result from the operator's holding out or offering service (In this situation the customer seeks an operator to perform the desired service and enters into an exclusive mutual agreement as opposed to the operator seeking customers.)

C. Advisory Circular (AC) 120-12A, "Private Carriage Versus Common Carriage of Persons or Property," provides additional guidelines for determining whether a transportation operation is common carriage or private carriage. If an inspector cannot clearly determine whether an operation is common carriage or private carriage, the facts of the situation shall be presented to the regional flight standards division (RFSD). The RFSD shall coordinate the matter with Regional Counsel for an appropriate determination.

17. AIR TRANSPORTATION AND AIR CARRIERS. The FA ACT defines, in part, air transportation as "interstate, overseas, or foreign air transportation, or the transportation of mail by aircraft." The Act further defines interstate air transportation, overseas air transportation, and foreign air transportation as the "carriage by aircraft of persons or property as a common carrier (common carriage) for compensation or hire or the carriage of mail by aircraft in commerce between..." The Act defines an air carrier as "any citizen of the United States who undertakes, whether directly or indirectly or by a lease or any other arrangement, to engage in air transportation." Certain Department of Transportation (DOT) and FAA regulations, policies, and procedures associated with certificate issuance are based on these definitions.

19. ECONOMIC AUTHORITY - DOT CERTIFICATES AND EXEMPTIONS. DOT has several types of economic authorities it issues: (1) section 401 certificate of public convenience and necessity for scheduled or charter operations, (2) section 418 domestic all cargo authority, (3) commuter air carrier authority, (4) air taxi operator authority, and (5) exemption authority. The type of authority issued to a particular company is generally based upon the type of operations that company intends to conduct.

A. Companies which wish to engage in air transportation operations with aircraft having more than 60 passenger seats or 18,000 pounds payload ("large aircraft") are required to hold certificate authority under either section 401 of the FA Act or section 418 (the latter of which authorizes domestic all-cargo operations only). Companies operating smaller aircraft may receive such authority also. Any company receiving such authority must be found "fit, willing, and able" to conduct the operations proposed.

(1) Different types of Section 401 authority may be issued: e.g., for scheduled or charter operations serving domestic or foreign points, carrying passengers/cargo/mail, or cargo/mail only. Evidence of such authority consists of the certificate itself, together with its Terms, Conditions, and Limitations. However, it is also a good idea to request a copy of DOT's Show Cause and Final Orders finding the company fit and issuing the certificate.

(2) A commuter air carrier is defined as a company which operates aircraft designed to have no more than 60 passenger seats and provides scheduled passenger service of five or more round-trip flights per week on at least one route according to published flight schedules.

(3) An air taxi operator is defined by DOT as a company which operates aircraft designed to have no more than 60 passenger seats or a cargo payload of 18,000 pounds and carries cargo or mail on either

a scheduled or charter basis, and/or carries passengers on an **on-demand** basis only. The authority issued to both an air taxi operator and a commuter air carrier is a registration (OST Form 4507), although commuters must be found "fit" to operate, just like carriers receiving certificates. In the case of a commuter air carrier, when requesting evidence of that company's DOT authorization, you should request not only a copy of OST Form 4507, but also a copy of DOT's Show Cause and Final Orders finding the company fit to engage in scheduled passenger operations.

B. A company may also provide certain of its operations pursuant to exemption authority from the DOT. Generally exemption authority is issued only to companies which already hold some type of section 401 certificate authority from the DOT and who wish to provide operations outside of the authority granted by that certificate. For example, XYZ Airlines holds a domestic section 401 certificate for scheduled passenger operations, but no foreign air transportation. It may request an exemption from the domestic certificate requirements. Evidence of exemption authority may consist merely of a DOT confirmation of oral action taken, or it may take the form of a DOT order granting such authority.

NOTE: If an inspector is unsure of the type of operations authorized by the registration, certificate, or exemption evidence presented by an air carrier, he/she should contact DOT's Air Carrier Fitness Division, Phone 202–366–9721, to confirm the authority held.

C. Washington headquarters, in support of DOT fitness determinations, may occasionally query field inspectors concerning an applicant's accident, incident, and enforcement history. Other than responding to these queries, a field inspector should not be involved in an applicant's efforts to obtain DOT economic authority. It is solely the responsibility of an applicant to obtain DOT economic authority. Field inspectors, however, shall not issue an FAA air carrier certificate unless an applicant can show proof that appropriate DOT economic authority has been obtained. Actions which must be taken to obtain DOT economic authority are summarized in figure 2.1.2.2. For further information concerning DOT fitness determinations contact the Air Carrier Fitness Division, (202) 366-9721.

CHAPTER 2. THE CERTIFICATION PROCESS—FEDERAL AVIATION REGULATIONS PARTS 121 AND 135

SECTION 1. PREAPPLICATION PHASE

55. GENERAL.

A. *Direction and Guidance.* This chapter provides direction and guidance on the certification process of Federal Aviation Regulations (FAR) Parts 121 and 135 air operators. This process, if followed, will lead to successful compliance with Title 49, United States Code (U.S.C.) (formerly the Federal Aviation Act (FA Act) of 1958) and the FAR. Under no circumstances will an applicant be certificated until flight standards district offices (FSDO) and regional flight standards division (RFSD) offices are confident that the prospective certificate holder is capable of fulfilling the required responsibilities and willing to comply with the FAR in an appropriate and continuing manner. The certification process employs a Gate System that requires the completion of certain items prior to continuation of the process.

NOTE: Small, less complex operators, who are required to comply with FAR Part 135 may be eligible to use a modified certification process. The modified process will usually be quicker and require fewer operator and Federal Aviation Administration (FAA) resources. The certification process described in this chapter must be thoroughly understood before any attempt is made to use the selected practices that modify the small operator certification process. These selected practices are discussed in chapter 3, section 4.

B. *Certification of Air Carriers.* Most applicants requesting certification to operate under FAR Parts 121 and/or 135 will request to be certificated as an air carrier. The certification process described in this chapter and in Advisory Circular (AC) 120-49, "Certification of Air Carriers," is for an applicant seeking an air carrier certificate. The process, however, is essentially the same for applicants seeking an operating certificate to conduct operations under FAR Parts 121 or 135 as an intrastate common carrier or as a FAR Part 135 private carrier (commercial operator). The certification process must be applied equally to either type of applicant. The FSDO should provide the AC, with a brief explanation of the differences, to applicants requesting an operating certificate. See volume 2, chapter 1, section 2, of this handbook for information about different certificates.

57. INITIAL INQUIRIES OR REQUESTS.

A. *Initial Inquiries.* Initial inquiries about certification or requests for application may come in various formats from individuals or organizations. These inquiries may be in writing or in the form of meetings with FSDO personnel. Requests for applications may come from inexperienced and poorly prepared individuals, from well prepared and financially sound organizations, or from individuals and organizations ranging between these extremes.

B. *Applicant Orientation.* Upon initial contact, FSDO personnel should advise the applicant that a certification orientation video tape and AC 120-49 are available for review in the FSDO. The FAA should provide the applicant with the following, as amended: the AC index, AC 00-2.7, "Advisory Circular Checklist"; FAA Form 8400-6, "Preapplication Statement of Intent" (PASI); and AC 120-49. The FAA should give the applicant information on how to obtain the FAR; FAA Order 8300.10, "Airworthiness Inspector's Handbook"; and FAA Order 8400.10. The information in these documents will assist the applicant in the certification process.

NOTE: FSDO personnel should instruct the applicant to complete the PASI in accordance with the instructions in Appendix 1 of AC 120-49 and to submit the completed PASI to the FSDO.

C. *Preliminary Discussion.* After the applicant has reviewed the orientation video tape and AC 120-49, the assigned FSDO inspector should briefly explain the requirements of the FAA that the applicant must meet in the certification process. The inspector should ask the applicant to schedule an appointment for further discussions, allowing enough time for the applicant to thoroughly review and understand the requirements of AC 120-49. The applicant should plan to bring key management personnel and the completed resumes to the preapplication meeting.

NOTE: Management qualifications must be reviewed by the certification team (see para-

graph 61) to determine that there is a resume for each required management position and that these resumes contain the basic information necessary to determine regulatory compliance. The depth of review should be only to determine that there are no obvious omissions or significant discrepancies. An example of a significant discrepancy might be that the regulation requires an individual to hold an Airline Transport Pilot (ATP) Certificate, but the resume shows that the individual holds only a commercial pilot certificate. A detailed review of the management qualifications and effectiveness will be accomplished during the document compliance and the demonstration and inspection phases.

59. FAA FORM 8400-6, "PREAPPLICATION STATEMENT OF INTENT" (PASI).

A. *Purposes of a PASI.* Often, an operator will request information about certification as an air carrier, but the operator is not fully aware of the regulatory requirements and the costs involved. The completed PASI denotes an intent by the applicant to continue the certification process. It also allows the FAA to plan activities and prepare to commit resources.

B. *Processing the PASI.* The FSDO manager uses the PASI to evaluate the complexity of the proposed operation and to determine whether trained and experienced inspectors are available in the FSDO to certificate the applicant. The FSDO will forward the completed PASI to the RFSD for determination of certificate-holding district office (CHDO) assignment. The PASI is used by the CHDO to obtain and record the precertification number received from the Regulatory Support Division, Operational Systems Branch, AFS-620. It is also used to initiate the FSDO files such as the Program Tracking and Reporting Subsystem (PTRS) and the Vital Information Subsystem (VIS) Air Operator File on the potential applicant.

C. *District Office Review of PASI.*

(1) *Review Upon Receipt.* Upon receipt of a signed PASI, the FSDO will review the form to ensure that there is sufficient information to further process the preapplication. The FSDO will ascertain that the proposed operation is consistent with the FAR Part under which the applicant will be required to operate.

(2) *Unacceptable PASI.* If the PASI is unacceptable, the reasons for its unacceptability must be described in section 2 of the form and returned to the applicant. The FSDO shall notify the applicant, either verbally or by letter, that the PASI is unacceptable for the reasons detailed in section 2 of the form and that a new PASI is required. A copy of the rejected PASI shall be retained in the FSDO files.

(3) *Acceptance of a PASI.* When the PASI is acceptable, the FSDO shall complete section 2 of the form. Within 5 working days, the "Action" box of section 2 shall be checked, and the PASI shall be forwarded to the RFSD. The RFSD shall process the PASI within 5 working days of receipt.

NOTE: After assignment as the CHDO by the RFSD, the CHDO shall, by phone or other electronic means, transmit the information in the PASI to AFS-620 (see chapter 1, section 4). AFS-620 will provide a precertification number and the CHDO will create a precertification shell record in the CHDO's VIS and the National VIS.

D. *RFSD Review of PASI.* The RFSD must ensure that FSDO staffing is consistent with the aviation environment. The PASI is used by the RFSD to assess FSDO workload and forecast staffing and training needs. The RFSD assessment at this time also determines the capability of the FSDO to conduct the certification project. The RFSD then coordinates with the Flight Standards National Field Office, AFS-500. Team members from the National Certification Team (NCT) may be assigned by AFS-500 to assist the proposed CHDO in the project as required. Within 5 working days of receiving a PASI marked "Action" or an electronically transmitted template message of a PASI, the RFSD shall process it as follows:

NOTE: NCT members are selected to form a resource pool that is available to assist the CHDO certification team during the certification process. NCT members assigned to a CHDO team are under the direction of the CPM. Assignments will be coordinated between the CHDO, the regional flight standards division (RFSD), and AFS-500.

(1) *Designation of a CHDO.* Based on the information in the PASI, the RFSD must determine which FSDO should be assigned the certification project and CHDO responsibilities. For those applicants that propose significant portions of their operations in more than one region (such as maintenance, training, flight operations), AFS-500 will coordinate assignment of certificate oversight responsibilities with the applicable regions.

NOTE: Additional guidance concerning the assignment of CHDO responsibilities is provided in chapter 1, section 3.

(2) *Notification of CHDO and the Applicant.* When the FSDO assignment has been determined, the RFSD will complete section 3 of the PASI and return or forward it to the FSDO assigned certification

responsibilities for the prospective applicant. If the CHDO assigned certification responsibilities is not the office that originally processed the PASI, the RFSD shall notify AFS-500 and both FSDO's of the disposition of the PASI. If necessary, AFS-500 will coordinate transfer between regions. In addition, the RFSD shall notify the prospective applicant of the change and provide the following information:

- Name, address, and telephone number of the assigned FSDO
- Name of the FSDO manager or the name of a prearranged contact within the assigned FSDO
- An explanation for assignment of the applicant to a FSDO other than the office the applicant initially contacted
- A statement to the effect that all future contacts concerning the certification process should be with the newly assigned FSDO

NOTE: The RFSD must first determine the CHDO assignment. Then, at the request of the CHDO, the precertification number is assigned by AFS-620.

61. WITHDRAWN—CHG 11.

63. WITHDRAWN—CHG 11.

65. ASSIGNMENT OF THE CERTIFICATION TEAM.

A. *Selection of Team Members.* When the FSDO is assigned as the CHDO and a precertification number is received, the manager shall select a team for the certification project. The team shall consist of at least an operations, a maintenance, and an avionics inspector and, as required, members of the NCT. Generally, these inspectors will be the principal inspectors assigned to the applicant once the certification process is completed. An operations inspector qualified for each of the aircraft proposed to be used shall be assigned to the team if the prospective principal operations inspector (POI) is not qualified for the aircraft.

B. *Designation of Certification Project Manager (CPM).* The manager of the CHDO will designate one member of the certification team to serve as the CPM. The person designated as CPM should have completed appropriate training and should have previous experience in the certification of an air carrier either under FAR Part 121 or 135, as appropriate. It is desirable that a person with principal inspector experience be designated as the CPM; however, depending on the situation, other inspectors may be acceptable.

67. RESPONSIBILITIES OF CPM AND THE CERTIFICATION TEAM.

A. *Responsibilities of the CPM.* The CPM and other certification team members shall conduct themselves in a professional and responsive manner with the applicant. The CPM shall serve as the primary spokesperson for the FAA throughout the certification process. Consequently, the CPM must thoroughly coordinate all certification matters with all other specialists assigned to the certification project. The CPM shall be responsible for ensuring that all certification job functions are completed. All correspondence, both to and from the applicant, shall be coordinated with the CPM. The CPM must notify the CHDO manager of any information that may significantly affect or delay the certification project. The CPM must ensure that individuals involved with the certification project and the CHDO manager are kept fully informed of the current status of the certification. The schedule of events and certification job aids (see figures 2.1.1.1. through 2.1.1.3. in chapter 1) should be used as guides for the conduct of these status meetings.

B. *Responsibilities of the Certification Team Members.* Each team member shall respond to requests for assistance made by the CPM and keep the CPM informed of the status of the certification. Any discrepancy that may delay the certification effort must be brought immediately to the attention of the CPM.

C. *Responsibilities of the CHDO Manager.* The CHDO manager shall keep the RFSD informed of any unusual aspects of the certification process or of those aspects that may attract the attention of local or national political entities or the media. The CHDO manager shall coordinate with the RFSD when intra/interregional coordination is required. However, routine certification job function coordination between FSDO's is appropriate and encouraged.

D. *Responsibilities of the Applicant.* The applicant must develop and complete all required programs and documents for submission with the formal application.

69. PREAPPLICATION MEETING.

A. *General.* In preparation for the meeting, the assigned inspector should remind the applicant that the key management personnel should attend the preapplication meeting and should be prepared to discuss, in general terms, specific aspects of the applicant's proposed operation. The inspector should discuss the certification process in depth. Emphasis should be placed on the expectations of the FAA, what the applicant should expect from the FAA, and the

sequence of events. The requirements of the Gate System (see figure 2.2.1.2.) should receive emphasis, and the applicant should be encouraged to ask questions during the discussion. Applicants should be thoroughly familiar with the Gate System requirements before continuing with the process.

NOTE: At the end of the meeting, the inspector will give the applicant a certification package (see figure 2.2.1.3.). Upon completion of Gate One, FSDO personnel, when available, will advise and counsel the applicant on document preparation for Gate Two. Gate Three requirements shall be completed prior to commencement of proving tests. All requirements of each Gate must be completed before proceeding through the certification process to the next Gate.

B. *Package of Precertification Information.* The preapplication meeting between the CPM, other certification team members, and the applicant sets the tone for the rest of the certification process. Therefore, it is important that the CPM be thoroughly prepared to conduct the meeting. The CPM should review the PASI and assemble a precertification information package to be given to the applicant. The precertification information package shall consist of at least the following:

- AC 120-49, If not previously provided
- Applicable certification job aid
- Sample schedule of events format
- Applicable sample of operations specifications
- Other publications or documents that the CPM considers appropriate (See figure 2.2.1.4. for a job aid on cabin safety)

C. *Briefing of the Applicant.* At the preapplication meeting, the applicant and any key personnel attending the meeting should be briefed in as much detail as necessary to ensure that they understand the certification process using the certification job aid and the schedule of events format as guides to facilitate the discussion and to ensure that all elements of the certification process are covered. The applicant should be encouraged to ask questions about any area of the process not clearly understood.

D. *Verifying Information on the PASI.* The first item for discussion should be verification of the information on the PASI, such as the type of operation, types of aircraft, geographic areas of operation, and location of facilities. When changes to this information occur, the applicant must annotate the changes on the PASI. If the changes significantly affect the anticipated scope and/or type of operation, a copy of the revised PASI shall be forwarded to the RFSD. If the changes indicate the need for reassignment of certification responsibilities to another FSDO, the RFSD shall notify, without delay, the affected FSDO's so that the certification project can be reassigned. In this situation, it may be appropriate to terminate the preapplication meeting.

E. *Informing the Applicant of Pertinent Regulations.* It is essential that the applicant understand which regulations are applicable to the proposed operation. A list of regulations appropriate to various types of operations is in AC 120-49. The applicant should be advised to acquire and become familiar with the FAR and other AC's pertinent to the proposed operation. A list of FAR and AC's pertinent to various types of operations are in Appendixes 2 and 3 of AC 120-49. The applicant and the applicant's personnel must be made aware of their responsibilities during the certification process. It is to their benefit to submit required items as soon as they become available, in order to meet Gate One requirements, and to notify the FSDO immediately of any problems or changes in the proposed operation.

F. *Appropriate Department of Transportation (DOT) Economic Authority.* As stated by FAR §§ 121.27, 121.51, or 135.13, the applicant should be advised that it is the applicant's responsibility to apply for and obtain the appropriate DOT economic authority. The inspector should further advise the applicant that the FAA will not proceed with the certification process until Gate One requirements have been fully met (see figure 2.2.1.2.). In addition, the FAA will not proceed beyond Gate Two until the applicant provides the "Order to Show Cause" from DOT; or, in the case of a commuter air carrier, a fitness determination under Title 14, Part 204, of the Code of Federal Regulations (14 CFR 204); or, in the case of an on-demand air operator, a DOT registration as required by 14 CFR 298. The FAA will not issue the operations specifications until DOT economic authority is obtained.

71. INSTRUCTIONS TO THE APPLICANT ON THE FORMAL APPLICATION.

A. *Requirements of Formal Application.* It is essential during the preapplication meeting that the applicant has a clear understanding of the form, content, and documents required for the formal application. The applicant shall be informed that the formal application must be submitted to the assigned FSDO and, after initial review, notification of its acceptance or rejection will be provided by letter within 10 working days. The applicant should be encouraged to submit the formal application as far in advance as possible of the intended starting date.

NOTE: The inspector should inform the applicant that while FAA inspectors will furnish informal guidance and advice during the preparation of required documents and manuals, the production of acceptable documents and manuals is solely the responsibility of the applicant.

B. *Formal Application Letter.* The formal application letter serves as the vehicle to transmit the package of documents required to pass through Gate Two. The inspector shall inform the applicant that the formal application must be a letter containing a statement that the letter serves as a formal application for either an air carrier certificate or an operating certificate. The letter must contain the full and official name of the applicant. This letter must be signed by the owner when applying as an individual or sole proprietorship, all partners when applying as a partnership, or an authorized officer(s) when applying as an organization such as a company or a corporation. The letter shall contain the physical location address of the applicant's intended primary operating location. The applicant's mailing address shall be included in the formal application letter if different than its letterhead. This letter shall also include the full name and address of the applicant's agent for service as required by section 46103(c) of the U.S.C. (formerly section 1005(b) of the FA Act). Additionally, the letter will confirm the identity of key management personnel such as the general manager, director of operations, director of maintenance, chief pilot, and chief inspector, as applicable. When a request for deviation from the qualification requirements of management personnel is anticipated, it should be noted in the formal application letter. However, the request for the deviation and the justification for that deviation shall be made in a separate letter. See figure 2.2.1.5. for a sample of a formal application letter.

73. APPLICATION ATTACHMENTS. The formal application letter must be accompanied with at least the attachments described in the following subparagraphs. The applicant must understand that this letter and these attachments will be the minimum information acceptable for meeting the requirements of FAR §§ 121.26, 121.47, and 135.11.

A. *Schedule of Events.* The applicant needs to understand that the schedule of events is a key document to be presented with the formal application. The schedule of events is a list of items, activities, programs, aircraft and/or facility acquisitions that the applicant must accomplish or make ready for FAA inspection before certification. The schedule of events will include the applicant's best estimate of the date the item, activity, program, aircraft, or facility acquisitions will be accomplished or ready for inspection. The applicant shall be informed that the schedule of events must be constructed in a logical and sequential manner. The schedule of events must also provide for a reasonable amount of time for the FAA to review and accept or approve each item or event, before scheduling other items or events that are dependent on such acceptance or approval. The applicant should be informed that failure to accomplish an item or event in a satisfactory or timely manner in accordance with the schedule of events could result in a delay in certification. The applicant should be advised that if deficiencies are detected during the review of manuals and other documents, they will be returned for amendment or correction. Such action may also cause additional delays in the certification process. Figure 2.1.1.3. in chapter 1 provides a sample format for a schedule of events. The applicant should be encouraged to use this format; however, other formats may be acceptable if they provide information necessary for the certification team to ensure that the applicant is proceeding in an appropriate manner.

B. *Company General Manuals.* This attachment to the formal application may be in the form of one or more manuals or volumes. These manuals must contain information about the applicant's organization, general policies, duties, responsibilities of personnel, operational control policy, and procedures. In practice, these manuals are often known as the General Operations Manual (GOM) and the General Maintenance Manual (GMM). The applicant's entire manual, as required by FAR § 121.133 or FAR § 135.21, must be completely developed at the time of formal application to satisfy the requirements of Gate Two. The applicant should ensure that the manuals are in compliance with at least the following FAR sections, as applicable to the applicant's operation:

(1) *FAR Part 121.*

- FAR § 121.135(a)(2)—Easy to revise
- FAR § 121.135(a)(3)—Revision control, each page dated
- FAR § 121.135(b)(1)—Company general policies
- FAR § 121.135(b)(2)—Duties and responsibilities of employees
- FAR § 121.135(b)(3)—References to appropriate regulations
- FAR § 121.135(b)(4)—Flight dispatching and operational control
- FAR § 121.135(b)(12)—Flightcrew succession of command

- FAR § 121.135(b)(14)—Procedures for operating in adverse weather
- FAR § 121.135(b)(15)—Airman training
- FAR § 121.135(b)(16)—Procedures for maintenance, preventative maintenance
- FAR § 121.135(b)(18)—Procedures for refueling
- FAR § 121.135(b)(21)—Pilot and dispatcher route and airport qualification procedures
- FAR § 121.135(b)(22)—Accident notification procedures
- FAR § 121.369(a)—Organization and maintenance arrangements
- FAR § 121.369(b)(4)—Required inspection items
- FAR § 121.369(b)(6)—Inspection procedures
- FAR § 121.369(b)(7)—Inspection limitations
- FAR § 121.369(b)(8)—Authority to countermand decisions
- FAR § 121.369(b)(9)—Procedures to ensure that inspections are completed
- FAR § 121.369(c)—Records retention system
- FAR § 121.709(b)—Airworthiness release and aircraft log entry procedures

(2) *FAR Part 135.*

- FAR § 135.23(a)—Management personnel and responsibilities
- FAR § 135.23(b)—Weight and balance procedures
- FAR § 135.23(d)—Accident notification procedures
- FAR § 135.23(e)—Procedures for pilot knowledge of airworthiness status
- FAR § 135.23(f)—Procedures for recording mechanical irregularities
- FAR § 135.23(g)—Procedures for determining maintenance corrective action
- FAR § 135.23(h)—Procedures for obtaining maintenance without previous arrangements
- FAR § 135.23(j)—Procedures for refueling
- FAR § 135.23(k)—Passenger briefing procedures
- FAR § 135.23(l)—Flight-locating procedures
- FAR § 135.23(n)—Pilot en route qualifications procedures
- FAR § 135.427(a)—Organization and maintenance arrangements
- FAR § 135.427(b)(4)—Required Inspection Items
- FAR § 135.427(b)(6)—Inspection procedures
- FAR § 135.427(b)(7)—Inspection limitations
- FAR § 135.427(b)(8)—Authority to countermand decisions
- FAR § 135.427(b)(9)—Procedures to ensure that inspections are completed
- FAR § 135.427(c)—Records retention system

C. *Company Training Curriculums.* The company training curriculum must be attached to the formal application. The company training curriculum must include at least the following curriculum segments for each applicable crewmember or dispatcher position:

- Basic indoctrination training
- Emergency training
- Initial aircraft ground training
- Initial aircraft flight training

D. *Management Qualification Resumes.* This attachment shall include resumes that meet the requirements of FAR Parts 121 and 135, as appropriate, and contain information on the qualifications, certificates, ratings, and experience of personnel selected for the following positions, or equivalent:

- General manager (when applicable)
- Director of operations
- Director of maintenance
- Chief pilot
- Chief inspector (when applicable)

(1) The applicant shall be informed that the effectiveness of the applicant's management personnel will be observed throughout the certification process. If, during the preapplication meeting, it becomes

apparent that a proposed management candidate does not meet the required experience outlined in the appropriate FAR, the applicant should be informed that the applicant may apply for a deviation for the prospective certificate holder to employ that person if equivalent aeronautical experience is shown by documentation. This request for a deviation must be made to the FSDO as soon as practical to enable the individual who will hold the position to be involved early in the certification process.

(2) If an applicant intends to request approval for a deviation from required management personnel (fewer or different personnel), this request must be made by letter. The applicant must show the ability to perform operations safely under the fewer or different positions requested. Justification must take into account the size and scope of the operation as well as the qualifications of intended personnel. It must also be shown that the persons can be expected to effectively perform the functions associated with the subject positions in accordance with the FAR and the procedures outlined in the proposed manual. If the CHDO approves fewer or different positions, this approval will be made part of the operations specifications.

(3) Normally, full-time management employees are expected for FAR Part 135 operations. However, depending on the size, scope, and complexity of the operation, part-time management personnel may be accepted by the CHDO. Full-time management personnel are required for all FAR Part 121 operations.

E. *Documents of Purchase, Contracts, and Leases.* This attachment should provide evidence that the applicant has acquired aircraft, facilities, and services to conduct the type of operation proposed. This evidence may be in the form of proof of formal purchases, leases, or contractual arrangements. These documents should provide evidence that the applicant is, in good faith, committed to making arrangement for aircraft, supporting facilities, and services as necessary for the proposed operation. Examples of the types of equipment, facilities, and services that should be addressed in these documents, contracts, or leases include the following:

- Aircraft
- Station facilities and services
- Weather and Notices to Airmen (NOTAM) gathering facilities and services
- Communications facilities and service
- Maintenance facilities and service
- Aeronautical charts and related publications
- Airport analysis and obstruction data
- Contract training or facilities

F. *Compliance Statement.*

(1) Preparation of the compliance statement benefits the applicant by systematically ensuring that all applicable regulatory aspects are appropriately addressed during the certification process. The compliance statement shall be in the form of a complete listing of all appropriate FAR sections (for example, FAR Part 21, 43, 91, 108, 121, or 135) pertinent to the operation the applicant is proposing. This list should reference any applicable subpart and each relevant section of the subpart. Next to each subparagraph, the applicant must provide a specific reference to a manual, or other document, and may provide a brief narrative description that describes how the applicant will comply with each regulation. This statement also serves as a master index to the applicant's manual system to expedite the FAA's review and approval of the operation and manual system. The compliance statement is an important source document during the certification process. After the certification process is completed, the compliance statement should be kept current as changes are incorporated in the applicant's system.

(2) Where the compliance information has been developed (for example, the manual material submitted with the formal application), a manual reference or description of the method of compliance must be entered next to the applicable regulatory section.

(3) The list of the specific regulations and subparts, including all subparagraphs, must be presented in the manner of one of the examples described below:

Example 1. Compliance statement.

121.434, "Operating experience":

(a) GOM p. 217, para. 237

(1) GOM p. 218, para. 238

(b) GOM p. 219, para. 240

(c) Pilot crewmembers must acquire operating experience as follows:

(1) GOM p. 220, para. 241, Training Manual, p. 25

(2) GOM p. 221, para. 242, Training Manual, p. 26

Example 2. Compliance statement.

121.563, "Reporting mechanical irregularities." The GOM, page 37-5, paragraph 35, instructs the pilot-in-command (PIC) on the requirements for, and methods of completing, the aircraft discrepancy log. The PIC is required to review the log before each flight and to ascertain the status of each previous entry. The GMM page 58-33, paragraph 665(1)(A), instructs maintenance personnel on the requirement to record discrepancies discovered during preflight checks and other types of checks.

75. CONCLUSION OF PREAPPLICATION MEETING. The inspector must ensure that the applicant understands that the formal application, with the previously described attachments, must be complete and acceptable or the entire formal application will be rejected.

A. *Applicant is Adequately Prepared.* At the close of the preapplication meeting, the inspector should determine whether the applicant is prepared to proceed with the certification process. If it appears that the applicant understands the requirements of a formal application and will proceed to that phase, the inspector should encourage the applicant to informally coordinate required documents, as they are developed, with the certification team before formal submission.

B. *Applicant is not Prepared.* If it is evident that the applicant is not adequately prepared to proceed with the certification process, the inspector should advise the applicant of the reasons for concern. When it is apparent that the applicant will not be able to prepare an adequate formal application, the inspector should advise the applicant to request another preapplication meeting after more complete preparation on the applicant's part. It is appropriate for the inspector to recommend to the applicant one or more of the following actions:

- Further review of the certification orientation video tape and AC 120-49
- A more thorough review of the applicable regulations
- Changes in proposed key management personnel
- Retain the services of a professional aviation consultant
- Cease efforts to become FAA certificated

77. TERMINATION OF THE PREAPPLICATION PROCESS. If at any time during the preapplication phase the applicant formally terminates all efforts toward certification, or the FSDO determines that the applicant will not proceed with the certification process, the PASI will be returned to the applicant. The FSDO will notify the applicant in writing that this action terminates the preapplication process and that the applicant must submit a new PASI in order to initiate the certification process again. The RFSD must be notified of any certification project that is terminated. The CHDO will notify AFS-620, and the precertification number will be returned to the centralized certificate number data file. The CHDO should ensure that appropriate VIS entries are accomplished. Should the applicant again request to apply, the procedures described in paragraph 59 of this section will be followed, and a new precertification number will be assigned.

78.–82. RESERVED.

FIGURE 2.2.1.1.
FAA FORM 8400-6, "PREAPPLICATION STATEMENT OF INTENT"

U.S. Department of Transportation
Federal Aviation Administration

PREAPPLICATION STATEMENT OF INTENT

Section 1A. To Be Completed By All Applicants

1. Name and mailing address of company	2. Address of principal base where operations will be conducted (do not use post office box)

3. Proposed Startup date	4. Requested three-letter company identifier in order of preference
	1. 2. 3.

5. Management Personnel

Name (Last, first, middle)	Title	Telephone (including area code)

Section 1B. To Be Completed By Air Operators

6. Proposed type of operation (check as many as applicable)

- ☐ Air Carrier Certificate
- ☐ Operating Certificate
- ☐ Part 121
- ☐ Part 125
- ☐ Part 135
- ☐ Passengers and Cargo
- ☐ Cargo Only
- ☐ Scheduled Operations
- ☐ Nonscheduled Operations
- ☐ Single Pilot Operator
- ☐ Single Pilot-in-Command Operator
- ☐ Basic Part 135 Operator

Section 1C. To Be Completed By Air Agencies

7. Proposed type of agency and rating(s)

- ☐ Part 145 Repair Station
  - ☐ Domestic
  - ■ Foreign ☐ *New* ☐ *Renewal*
  - ☐ Satellite
    - ☐ Airframe
    - ☐ Powerplant
    - ☐ Propeller
    - ☐ Radio
    - ☐ Instrument
    - ☐ Accessory
    - ☐ Specialized Service
- ☐ Part 147 Maintenance Technician School
  - ☐ Airframe
  - ☐ Powerplant
  - ☐ Both
- ☐ Part 149 Parachute Loft

Section 1D. To Be Completed By Air Operators

8. Aircraft Data		9. Geographic area of intended operations
Numbers and types of aircraft *(by make, model, and series)*	Number of passenger seats or cargo payload capacity	

FAA Form 8400-6 (4-87)

FIGURE 2.2.1.1.—Continued
FAA FORM 8400-6, "PREAPPLICATION STATEMENT OF INTENT"

Section 1E. To Be Completed By All Applicants		
10. Additional information that provides a better understanding of the proposed operation or business (attach additional sheets, if necessary)		
11. The statements and information contained on this form denote an intent to apply for FAA certification.		
Signature	Date	Name and Title

Section 2. To Be Completed By FAA District Office	
Received by (district office):	Date forwarded to Region:
Date:	For: ☐ Action ☐ Information only
Remarks:	

Section 3. To Be Completed By Regional Office	
Received by:	Precertification Number:
Date:	Date coordinated with AVN-120:
District office assigned responsibility:	Date forwarded to district office:
Remarks:	

FIGURE 2.2.1.1.—Continued
FAA FORM 8400-6, "PREAPPLICATION STATEMENT OF INTENT"

Section 1E. To Be Completed By All Applicants		
10. Additional information that provides a better understanding of the proposed operation or business (attach additional sheets, if necessary)		
11. The statements and information contained on this form denote an intent to apply for FAA certification.		
Signature	Date	Name and Title

Section 2. To Be Completed By FAA District Office	
Received by (district office):	Date forwarded to Region:
Date:	For: ☐ Action ☐ Information only
Remarks:	

Section 3. To Be Completed By Regional Office	
Received by:	Precertification Number:
Date:	Date coordinated with AVN-120:
District office assigned responsibility:	Date forwarded to district office:
Remarks:	

FIGURE 2.2.1.1.—Continued
FAA FORM 8400-6, "PREAPPLICATION STATEMENT OF INTENT"

INSTRUCTIONS FOR COMPLETING FAA FORM 8400-6—Continued

NOTE: Corporations should submit documentation that verifies the person named in Block 11 of the 8400-6 is authorized to sign for the corporation.

Owner
At least one partner
At least one authorized officer

SECTION 2. This section must be completed by the FSDO.

1. Enter the identifier of the office that received the PASI and the date it was received.
2. Indicate the date the PASI was reviewed and forwarded to the region. Show whether RFSD action is required or if the PASI is forwarded for information only.
3. Enter any pertinent comments. If certification is proceeding, show the precertification number (or certificate number, if applicable) and indicate that certification is proceeding. The CHDO will enter the precertification number and date obtained, in section 3, block 2, of the PASI. (NOTE: The form has not been updated to reflect this action.) Request any regional support, such as a specific subject matter expert (for example, appropriately rated pilot; experienced airworthiness inspector; cabin safety specialist; dispatch-qualified inspector).

SECTION 3. To be completed by the RFSD if the "Action" box is checked in section 2.

1. Enter the date the PASI is received by the RFSD and the name of the regional specialist processing it.
2. Show the precertification number assigned to the CHDO by AFS-620 and the date. (NOTE: The CHDO will complete this entry. The form has not been updated to reflect this action.)
3. Enter the name of the FSDO assigned to certificate the operator or agency and the date the PASI was forwarded or returned to the assigned office.
4. Enter any pertinent comments. If the FSDO assigned certification responsibility is not the one where initial inquiry was made, enter a remark and the date that each FSDO and the applicant were notified. All coordination by and with AFS-500 will be indicated at this point.

FIGURE 2.2.1.2.
REQUIREMENTS OF THE GATE SYSTEM

1. GATE ONE REQUIREMENTS:

- Have Application For DOT Economic Authority
- Facility Selection For Training And Maintenance Completed
- Have Letters Of Intent For Lease Or Purchase Of Aircraft And Facilities
- Submission Of Completed PASI Form
- Submission Of Proposed Schedule Of Events
- Have Key Management Resumes And Personnel Available

2. GATE TWO REQUIREMENTS

- Formal Letter Of Application
- Have Purchased Or Leased Aircraft And Facilities
- Received "Order To Show Cause" From DOT
- Submitted All Required Documents
- Submitted A Revised Schedule Of Events

3. GATE THREE REQUIREMENTS

- All Manuals Reviewed, Discrepancies Corrected, And Approved/Accepted As Required
- Training Programs Initially Approved And Sufficient Personnel Trained
- Maintenance Programs Approved And Conformity Checks Completed Satisfactorily
- Facilities Evaluated And Found Satisfactory
- Evacuation Demonstrations Satisfactorily Completed
- Proving Run Schedule Reviewed And Accepted
- All Other Discrepancies And Open Questions Resolved Satisfactorily

FIGURE 2.2.1.3.
CERTIFICATION PACKAGE

PREAPPLICATION STATEMENT OF INTENT (PASI)

8400.10 HANDBOOK EXTRACTS FROM THE CERTIFICATION PROCEDURES

CABIN SAFETY JOB AIDS

SAMPLE LETTER OF COMPLIANCE

SAMPLE OF SCHEDULE OF EVENTS

CERTIFICATION JOB AID

VIS AND OPERATIONS SPECIFICATIONS CHECKLISTS

SAMPLE PROVING RUN PLAN

SAMPLE RECORDKEEPING FORMATS(TRAINING, MAINTENANCE, OPERATIONS, DISPATCH, ETC.)

ANY OTHER PERTINENT INFORMATION THE INSPECTOR THINKS WOULD BE VALUABLE TO THE APPLICANT

FIGURE 2.2.1.4.
AIR CARRIER CERTIFICATION JOB AID FOR CABIN SAFETY

PREAPPLICATION PHASE: The inspector responsible for the cabin safety portion of the certification process should do the following:	Check
1. Receive or find out the name of the applicant's representative responsible for the flight attendant and cabin safety material.	
2. Provide the applicant with FAA publications or inform the applicant about how to obtain the following:	
a. "Advisory Circular Checklist," currently AC 00-2.7 (number changes annually)	
b. Guide to Federal Aviation Administration Publications	
c. AC 121-29, "Carry-On Baggage"	
d. AC 121-24A or 135-12A, "Passenger Safety Information Briefing and Briefing Cards"	
e. Exit Seating Program Job Aid (Volume 3, Chapter 15, Section 3, Figure 3.15.3.1.)	
f. Flight Attendant Manual Job Aid (Volume 3, Chapter 15, Section 6, Figure 3.15.6.1.)	
g. Flight Attendant Training Job Aid (Volume 3, Chapter 14, Section 2, Figure 3.14.2.1.)	
h. Cabin Safety Subject Index (contact AFS-500 for copy, (703) 661-0333)	
3. Provide the applicant with the following names and addresses:	
a. Regional Security Division for Principal Security Inspector and Security and Hazardous Material Programs information and requirements.	
b. Deputy Assistant General Counsel for Regulation and Enforcement for DOT Part 382, Nondiscrimination on the basis of Handicapped in Air Travel, (202) 366-9306 concerning procedures and training requirements.	
c. Regional Aviation Drug Abatement Program Manager for Drug Testing Program information and guidance.	
4. Other related FAA publications the operator may want to order:	
a. FAA Order 8430.17, "Air Carrier Operations Bulletins"	
b. FAA Order 8400.10, "Air Transportation Operations Inspector's Handbook"	
c. NPRM's and Federal Register for Final Rules	
d. 14 CFR Part 121/135 and placed on revision list	
e. 14 CFR Part 382, "Nondiscrimination On The Basis of Handicap in Air Travel"	
f. 14 CFR Part 252, "Smoking Aboard Aircraft"	
5. Operator cabin safety documents to be submitted and FAA related documents:	
a. Flight Attendant Manual	
— FAA Flight Attendant Manual Job Aid	
b. Flight Attendant Training Programs	
— FAA Flight Attendant Training Job Aid	
c. Applicable crewmember recordkeeping documentation	
d. Carry-On Baggage Program (Part 121 operators)	
— FAA AC 121-29	
Seat Program	
FAA Exit Seat Program Job Aid	

FIGURE 2.2.1.4.—Continued
AIR CARRIER CERTIFICATION JOB AID FOR CABIN SAFETY

f. Passenger Briefing Cards	
— FAA AC 121-24A or 135-12A, "Passenger Safety Briefing and Briefing Cards"	
g. Hazardous Materials/Security Program	
(1) FAA AC 108-1, "Air Carrier Security"	
(2) FAA AC 121-18, "Security Rules - Carriage of Weapons and Escorted Persons"	
(3) FAA AC 121-21B, "Information Guide for Training Programs and Manual Requirements in Air Transportation of Hazardous Materials"	
h. Proving test plan - Cabin safety portion	
i. Emergency evacuation demonstration plan (if required)	
j. Ditching demonstration plan (if required)	
k. Compliance statements-Cabin safety parts	

Information and guidance regarding air carrier certification for Part 121/135 operators is located in this handbook. This job aid may be used by inspectors to facilitate the organization and coordination of cabin safety materials with an applicant. This job aid may also be used in conjunction with the information and job aids located in volume 2, chapter 1, section 1, of this handbook.

Remarks:

FIGURE 2.2.1.5.
SAMPLE FORMAL APPLICATION LETTER

MIDSOUTH AIRLINES
601 WEST CIRCLE DRIVE
LITTLE ROCK, ARKANSAS 72202

[Date]

Federal Aviation Administration
Attn: Quentin Jones, Manager
Little Rock FSDO
1701 Bond St.
Little Rock, AR 72202

Dear Mr. Jones:

This letter serves as formal application for a Federal Aviation Administration (FAA) air carrier certificate. Icarus Enterprises, Ltd., DBA/MidSouth Airlines, initially intends to operate as a domestic *[Commuter, Flag, Supplemental, On-Demand, etc.]* air carrier under Part 121 *[or Part 135]* of the Federal Aviation Regulations (FAR). We intend to use three Canadair CL-65 Regional Jets between Little Rock, AR; Tulsa, OK; Wichita, KS; and Springfield, MO; as indicated in the enclosed copy of our filing with the Department of Transportation (DOT) for a *[type of certificate or exemption]*.[1]

Our company will have its operations base and corporate offices located at Hangar 6, Adams Field, Little Rock, AR. Our Maintenance base will be located at Tulsa International Airport, Tulsa, OK; and all "C" and "D" checks will be accomplished under contract with Excelsior Aircraft Services in Mojave, CA. A copy of our contract with Excelsior Aircraft is enclosed.

Our management personnel are as follows:

President and Chief Executive Officer—Rockwell J. Squirl
Director of Operations and Dispatch—S. F. Whiplash
Director of Maintenance—Harvey B. Smedlap
Chief Pilot—Waldorf E. Pepper
Director of Training—A.T. LaHunn

Also enclosed is our revised Schedule of Events that we agreed to at our last meeting and our revised Statement of Compliance.

We have retained the services of Dewey, Cheatum, and Howe, P.A.; 1600 E. Whitewater Ave; Little Rock, AR 72202; as our agent for service.

Sincerely,

Rockwell J. Squirl
President and CEO

Enclosures *[See figure 2.2.1.2.]*

[1]Certificates and Economic Authority issued by DOT include a Certificate of Public Convenience and Necessity (CC&N) for Domestic and Overseas Air Transportation, or for Charter Air Transportation; a Domestic All-Cargo Air Service Certificate; a Fitness Determination under 14 CFR 204; or an Exemption under 14 CFR 298.

FIGURE 2.2.1.5.
SAMPLE FORMAL APPLICATION LETTER

MIDSOUTH AIRLINES
601 WEST CIRCLE DRIVE
LITTLE ROCK, ARKANSAS 72202

[Date]

Federal Aviation Administration
Attn: Quentin Jones, Manager
Little Rock FSDO
1701 Bond St.
Little Rock, AR 72202

Dear Mr. Jones:

This letter serves as formal application for a Federal Aviation Administration (FAA) air carrier certificate. Icarus Enterprises, Ltd., DBA/MidSouth Airlines, initially intends to operate as a domestic *[Commuter, Flag, Supplemental, On-Demand, etc.]* air carrier under Part 121 *[or Part 135]* of the Federal Aviation Regulations (FAR). We intend to use three Canadair CL-65 Regional Jets between Little Rock, AR; Tulsa, OK; Wichita, KS; and Springfield, MO; as indicated in the enclosed copy of our filing with the Department of Transportation (DOT) for a *[type of certificate or exemption]*.[1]

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CHAPTER 2. THE CERTIFICATION PROCESS—FEDERAL AVIATION REGULATIONS PARTS 121 AND 135

SECTION 2. FORMAL APPLICATION PHASE

83. RECEIPT OF FORMAL APPLICATION. When the formal application is received, the applicant should be informed that the Federal Aviation Administration (FAA) will need 10 working days to review the submission.

85. INITIAL REVIEW OF THE FORMAL APPLICATION. Upon receipt of a formal application, the certification team must initially review it and make a determination of its acceptability within 10 working days. The Certification Project Manager (CPM) will notify the applicant of the results informally, followed by prompt written notification of acceptance or rejection of the formal application. (The CPM shall document both of these contacts with the applicant in the Program Tracking and Reporting Subsystem (PTRS)). The initial review serves the following two purposes:

A. It verifies that at least those items required for formal application have been submitted. The required items to pass gate two are as follows:

(1) The application must contain the formal letter requesting certification, which includes the information described in paragraph 71.

(2) The application must contain the required formal attachments described in paragraph 73. These requirements are listed in the certification job aids (see figures 2.1.1.1. through 2.1.1.3.).

NOTE: If any of the items required for the formal application are missing or are incomplete, the entire formal application must be rejected. It should be returned to the applicant with a letter stating the reasons for its rejection following completion of the initial review. See figure 2.2.2.1. for an example of a rejection letter.

B. The initial review also permits a determination of whether the submitted material represents a feasible proposal and is of sufficient quality to allow for a productive formal application meeting and to proceed with the certification process. The following paragraphs are provided as direction and guidance for this initial review.

87. SCHEDULE OF EVENTS ATTACHMENT. The schedule of events is a list of each major item, activity, program, aircraft and/or facility acquisition. It also sets milestones for accomplishment or submission of the listed items. The schedule of events, when accepted, becomes the basis for agreement between the applicant and the certification team to accomplish the certification project. The applicant's ability to plan and carry out a realistic schedule of events will be a major factor in determining the applicant's fitness to hold a certificate. Therefore, when reviewing the schedule of events, the certification team must carefully consider the feasibility of the proposed schedule with respect to the following criteria:

- Logic of sequence
- Timeliness of events
- Completeness of events
- Inspector or other FAA resource availability

A. *Logic of Sequence.* Many activities and events listed in the schedule must occur before other activities and events. For example, aircraft systems training cannot begin until the FAA-approved flight manual is available or the company aircraft operating manual has been reviewed and accepted/approved; the aircraft conformity inspection must be completed before the emergency evacuation demonstration. The team should use the certification job aid as a tool to ensure that the applicant's proposed schedule of events is logical in terms of event sequence.

B. *Timeliness of Events.* The schedule of events must be reasonable and realistically provide sufficient time for the certification team to review the applicant's various documents, manuals, and proposals.

C. *Completeness of Events.* The number and kinds of submissions made by the applicant for evaluation and acceptance or approval varies according to the complexity of the proposed operation. Specific manuals and other documents that are required for a particular type of applicant are annotated in the schedule of events and the certification job aid. The CPM should use the job aid to ensure that all required

manuals and documents have been included in the schedule of events.

D. *Inspector or Other Resource Availability.* Availability and capability of personnel resources is another element of concern when determining whether a schedule of events can be met. The CPM must determine, for example, that appropriately qualified inspectors are available, including resources from the National Certification Team (NCT), for the conduct of extensive manual reviews consistent with the proposed schedule of events. Also, the CPM must ascertain the qualifications of the available inspectors with respect to the proposed operation. The CPM will also coordinate participation by other resources, such as security or medical, as required.

89. COMPANY GENERAL MANUAL ATTACHMENTS. The CPM must give the company general operation and maintenance manual attachments a cursory review, first to determine that the type of information described in paragraph 73B has been submitted. Second, the CPM must determine that the overall content and scope of the manual material indicates that the applicant is proceeding in an appropriate manner and in compliance with the regulations. These completed manual submissions provide early indications of the quality of the applicant's manual program. An in-depth review and evaluation and the acceptance, approval, or rejection of the manual will be accomplished in the document compliance phase.

91. COMPANY TRAINING CURRICULUM ATTACHMENTS. The CPM must review the training curriculum attachments to determine that each of the four curriculum segments listed in paragraph 73C have been submitted for each applicable crewmember or dispatcher position. Each curriculum must be reviewed to determine that basic regulatory requirements are being met and that the applicant is proceeding in an appropriate manner with the development of the applicant's training programs. A detailed review and initial approval of the training curriculums will be accomplished in the document compliance phase after the applicant has finalized all training arrangements, including instructor lesson plans. The applicant may not start training in a curriculum until that curriculum has been initially approved.

93. MANAGEMENT QUALIFICATIONS ATTACHMENTS (RESUMES). Management qualifications must be reviewed by the certification team to determine that there is a resume for each required management position and that these resumes contain the basic information necessary to determine regulatory compliance. The depth of review should be only to determine that there are no obvious omissions or significant discrepancies. An example of a significant discrepancy might be that the regulation requires an individual to hold an Airline Transport Pilot (ATP) Certificate, but the resume shows that the individual holds only a commercial pilot certificate. A detailed review of the management qualifications and effectiveness must be accomplished during the document compliance and the demonstration and inspection phases.

95. DOCUMENTS OF PURCHASE, CONTRACTS, AND LEASES ATTACHMENT. The CPM must review these documents to determine that they include the types of information described in paragraph 73E. The documents should be reviewed for obvious omissions or significant discrepancies. Examples of obvious omissions might be the lack of documents indicating intent to acquire an aircraft or to arrange for a station facility. A significant discrepancy might be a document that reflects a contractual arrangement with another organization to perform a type of maintenance when it is known that the other organization is not qualified to perform that type of maintenance. These documents will not necessarily receive further review during the certification process since the aircraft, facilities, and services referenced in the documents will be the items inspected for acceptance or approval. It is not necessary or desirable for a separate document to exist for every item the applicant will have to acquire. However, there should be sufficient evidence to show that the applicant has made definitive arrangements to acquire the major items needed for certification.

97. COMPLIANCE STATEMENT ATTACHMENT. The CPM must review the compliance statement within 10 working days to determine that it complies with the form and content prescribed in paragraph 73F and that the applicant has proceeded in an appropriate manner. The compliance statement must then be given a detailed review and be accepted before the applicant may pass to gate two.

99. INITIAL DETERMINATION OF FORMAL APPLICATION ACCEPTABILITY.

A. The decision whether to accept the formal application before the formal application meeting and to proceed with the certification process by scheduling a meeting with the applicant must be tempered with good judgement and a reasonably flexible attitude. Results of informal meetings, reviews, and observations of the applicant's capabilities during the preapplication phase should supplement the decision-making process. Other factors such as working relationships and understanding established during the preapplication phase should also be considered. However, the decision must be based primarily on the

results of the initial review of the formal application and attachments. The decision to proceed is predicated on receipt of all required documents in the formal application and an initial approval of the contents.

B. Normally, if an applicant has been thoroughly briefed and has acquired a good understanding of the requirements during the preapplication phase, the formal application should be of sufficient quality that any discrepancies, omissions, and/or "open" questions can be resolved during the formal application meeting. For example, if the chronology of the schedule of events needs to be adjusted for logic of sequence, timeliness, or to accommodate inspector resource requirements, such adjustments can normally be accomplished during the meeting. Often minor and occasionally some significant discrepancies or omissions in manual material, training curriculums, and/or the compliance statement can be resolved during the formal application meeting. Questions about management qualifications and documents substantiating the acquisition of aircraft, facilities, and services can often be answered during this meeting.

C. If the CPM and the certification team decide to proceed with the certification process, the CPM must contact the applicant and schedule the formal application meeting. The applicant must be informed that attendance of key management personnel is required.

101. THE FORMAL APPLICATION MEETING. The purpose of this meeting is to resolve any questions on the part of either party and to establish a common resolve for future proceedings of the application process. The CPM is responsible for conducting the formal application meeting. Except for unanticipated circumstances, all members of the certification team must be present. Normally, the CPM should open the meeting with the applicant, all of the applicant's key management personnel, and the certification team present.

A. The CPM should encourage the applicant and the applicant's key management personnel to present any questions they may have concerning the forthcoming certification process. The CPM and certification team members should provide candid answers and discuss freely all aspects of the certification process.

B. The detailed schedule of events should be discussed, and any needed revisions should be negotiated prior to proceeding.

C. Before concluding the formal application meeting, the CPM must make certain that the applicant clearly understands the following:

(1) Notification of acceptance of the formal application package does not in any way constitute acceptance or approval of the separate attachments. The attachments will be reviewed further, and additional corrective actions will be required, following which, the applicant will be expected to take such corrective action. Acceptance or approval of each attachment will be indicated separately at a later date during the certification process.

(2) If the applicant is unable to meet the schedule of events, the FAA will still need equivalent amounts of time, as agreed upon during the meeting, to make the necessary reviews and inspections. Consequently, the proposed start-up date could be delayed.

103. FINAL DETERMINATION OF FORMAL APPLICATION ACCEPTABILITY. If the formal application meeting is successful, a letter acknowledging receipt and acceptance of the formal application must be prepared and forwarded to the applicant as soon as possible, but not later than 5 working days after the meeting. See figure 2.2.2.2. for an example of an acceptance letter.

105. WITHDRAWN—CHG 11.

106.–110. RESERVED.

FIGURE 2.2.2.1.
REJECTION OF FORMAL APPLICATION—MISSING OR INCOMPLETE DOCUMENTS

[FAA Letterhead]

[Date]

Mr. Rockwell J. Squirl
President and CEO, MidSouth Airlines
601 West Circle Drive
Little Rock, Arkansas 72202

Dear Mr. Squirl:

This office has reviewed your formal application for an Air Carrier Certificate, dated _____. We find it necessary to return your application because of deficiencies in the following areas:

1. Resumes of Harvey Smedlap, Director of Maintenance; and S.F. Whiplash, Director of Operations; were not included with your application.

2. The compliance statement is incomplete. For example, Subparts N and Q are not addressed. Another example includes your failure to address entire regulatory sections in Subpart T, such as Federal Aviation Regulations (FAR) §§ 121.533, 121.542, 121.547, and 121.563. Methods of compliance with these regulatory sections are described in your company's general manual attachment and should be appropriately referenced in the compliance statement. As previously discussed, all applicable regulatory sections must be addressed in the compliance statement.

3. The Minimum Equipment List (MEL) does not contain maintenance and operations procedures as required on the master minimum equipment list.

We are returning your letter of application with all attachments. It will be necessary to submit a new formal application when you have corrected all discrepancies noted above and any other omissions that exist.
Please contact us if we can be of any further assistance in clarifying the minimum requirements for your formal application.

Sincerely,

Hortense Q. Babbitt
Certification Project Manager

FIGURE 2.2.2.1.
REJECTION OF FORMAL APPLICATION—MISSING OR INCOMPLETE DOCUMENTS

[FAA Letterhead]

[Date]

Mr. Rockwell J. Squirl
President and CEO, MidSouth Airlines
601 West Circle Drive
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Sincerely,

Hortense Q. Babbitt
Certification Project Manager

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[PAGES 2-79 THROUGH 2-84 RESERVED]

CHAPTER 2. THE CERTIFICATION PROCESS—FEDERAL AVIATION REGULATIONS PARTS 121 AND 135

SECTION 3. DOCUMENT COMPLIANCE PHASE

111. GENERAL. The document compliance phase is that part of the certification process when the applicant's manuals and other documents are reviewed in depth to ensure compliance with applicable regulations and conformity to safe operating practices.

NOTE: These documents may include paper representation of data intended for display on the airplane; for example, electronic checklists or approved flight manuals. Guidance on the use of electronic checklists is provided in Advisory Circular (AC) 120-ECL, "Operational Use and Modification of Electronic Checklists." Operators' use of electronic checklists should be consistent with the provisions of AC 120-ECL.

A. An important responsibility of the certification project manager (CPM) is to organize the certification team's efforts to promptly review the applicant's manuals and other documents. Two key elements useful in planning activities in the document compliance phase are the schedule of events and the compliance statement. The schedule of events determines what will be examined and when. The previously agreed upon schedule of events will determine the priority of items to be reviewed and any additional inspector support or other Federal Aviation Administration (FAA) resources that will be needed beyond the composition of the basic certification team. The document compliance phase is an intensive process and will most likely require additional resources to accomplish necessary tasks in a timely manner. The Certificate-Holding District Office (CHDO) certification team may be augmented by the National Certification Team (NCT) or other FAA resources.

NOTE: NCT members are selected to form a resource pool that is available to assist the CHDO certification team during the certification process. NCT members assigned to a CHDO team are under the direction of the CPM. Assignments will be coordinated between the CHDO, the regional flight standards division (RFSD), and AFS-500.

B. The plan for review should ensure that each of the required manuals or documents submitted by the applicant will be reviewed in accordance with procedures and criteria outlined in other volumes of this handbook. The compliance statement directs the inspector to the location in the applicant's manuals where a compliance procedure is described. The certification job aid (figures 2.1.1.1. through 2.1.1.3.) has specific references to direction and guidance on specific subject matter published in this handbook.

113. WITHDRAWN—CHG 11.

115. REVIEW OF APPLICANT'S SUBMISSIONS. During this phase, members of the certification team evaluate and approve or accept the applicant's manuals and any other required documents. Review of the applicant's submissions should be accomplished by simultaneous reference to the Federal Aviation Regulations (FAR), the compliance statement, and the appropriate manual or document. The following are examples of typical submissions from applicants during the document compliance phase. This list is not all-inclusive, and certain items may not be applicable to a particular type of operation.

- Management personnel resumes outlining proposed management qualifications and compliance histories
- General Operations Manual (GOM)
- General Maintenance Manual (GMM) (This manual may be combined with the GOM for certain FAR Part 135 operators.)
- Continuous airworthiness maintenance program/manuals
- Weight and balance procedures
- Training program/manual
- FAA-approved Airplane/Rotorcraft Flight Manual (AFM/RFM)
- Company aircraft operations manual (This is not required if an operator elects to use the manufacturer's approved flight manual.)
- Minimum Equipment List (MEL)
- Configuration Deviation List (CDL)

- Cockpit checklist
- Passenger briefing card
- Noise and environmental assessments
- Airport runway analysis (This is required for transport category aircraft operations.)
- Deviation requests
- Hazardous Materials (HAZMAT)/security program
- Flight Attendant (F/A) manual
- Dispatch/flight-following/flight-locating procedures
- Operations specifications (including operations, maintenance, and avionics)
- Maintenance reliability program (optional for 10 or more passengers)
- Continuous analysis and surveillance system (required only for 10 or more passengers under FAR Part 135)
- Proving test plan
- Emergency evacuation demonstration plan
- Compliance statement
  - Compliance with applicable bulletins

117. THE COMPLIANCE STATEMENT.

A. The compliance statement serves the following two purposes:

(1) It ensures that the applicant has adequately addressed all regulatory requirements applicable to the proposed operation.

(2) It aids the certification team in determining where the regulatory requirements have been addressed in the applicant's manuals, programs, and procedures. In evaluating the applicant's compliance statement, the certification team may find it helpful to compare (in a side-by-side manner) the FAR, the applicant's manuals, and the compliance statement. The compliance statement documents how the applicant intends to comply with each applicable regulation.

B. If the applicant's compliance statement does not serve the preceding purposes, the deficient areas will be communicated to the applicant, and a resolution shall be negotiated. Proving tests will not be conducted until the certification team is satisfied, through its review of the compliance statement and formal application package, that all regulatory requirements have been adequately addressed. The applicant's methods of compliance will be evaluated throughout the demonstration and inspection phase.

119. DOCUMENT DEFICIENCIES. If the inspector's review reveals deficiencies in the applicant's submissions, the CPM should negotiate resolution of the deficiencies. The team should be ready to offer suggestions on how to improve the product, but avoid "writing" the applicant's manual. The certification team should remember that it is the applicant's responsibility to develop manuals and procedures that ensure safe operating practices and compliance with the rules.

120.–124. RESERVED.

[PAGES 2-87 THROUGH 2-90 RESERVED]

CHAPTER 2. THE CERTIFICATION PROCESS—FEDERAL AVIATION REGULATIONS PARTS 121 AND 135

SECTION 4. DEMONSTRATION AND INSPECTION PHASE

125. GENERAL. In this phase, the certification team determines that the applicant's proposed procedures and programs for training and directing personnel in the performance of their duties are effective. In this phase, the emphasis is on compliance with regulations and safe operating practices. As previously mentioned, certain segments of the document compliance phase often occur simultaneously with certain events in the demonstration and inspection phase. For example, inspectors may be observing pilot training at the applicant's facilities (demonstration and inspection phase) while other certification team members are approving and/or accepting maintenance manuals in the district office (document compliance phase).

127. OBSERVATIONS AND MONITORING OF EVENTS. Through observation and other forms of on-site evaluation during the demonstration and inspection phase, members of the certificating team observe and monitor many types of applicant activities. The manner in which the applicant is to be evaluated while conducting different segments of this phase is outlined in various sections of this handbook. Specific handbook references for each activity or event are referenced on the certification job aid (see figures 2.1.1.1. through 2.1.1.3.). The following list of activities or events is representative of events that occur in the demonstration and inspection phase. This list is not all-inclusive, and certain items may not be applicable to a particular type of operator:

- Conduct of training programs (classroom, flight simulators, and aircraft training)
- Airmen testing and certification (airmen, crewmembers, and dispatchers, as applicable)
- Station facilities (equipment, procedures, and personnel)
- Recordkeeping procedures (documentation of training, flight and duty times, and flight papers)
- Flight control (dispatch, flight-following, or flight-locating capabilities)
- Approved maintenance program procedures
- Maintenance activities (facilities, personnel, technical information, and spare parts)
- Aircraft (conformity inspection and aircraft maintenance records)
- Minimum Equipment Lists (MEL) and Configuration Deviation Lists (CDL) (compliance with FAA-approved operations manual/ flight manual maintenance procedures, if applicable)
- Weight and balance control, if applicable (procedures, accuracy, document control)
- Emergency evacuation demonstration, not applicable to Federal Aviation Regulations (FAR) Part 135, (aborted takeoff demonstration and ditching demonstration, if applicable)
- Aircraft proving tests (ability of applicant to operate independently, safely, and in compliance with the applicable FAR)

129. DEMONSTRATION AND INSPECTION DEFICIENCIES. If, at any time during the demonstration and inspection phase, the applicant does not meet the schedule of events, or the applicant's conduct of various activities (such as training, emergency evacuation) or certain items (such as MEL, recordkeeping procedures) proves to be deficient, appropriate corrective action must be taken. Required and recommended corrective measures for addressing specific types of deficiencies are in the appropriate subject matter discussions in other chapters of this handbook. The certification project manager (CPM) should schedule meetings with the applicant, as necessary, to review all deficiencies in detail. If appropriate, the CPM shall negotiate a new, modified schedule of events and reenter the demonstration and inspection phase or the document compliance phase, as appropriate.

130.–134. RESERVED.

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[PAGES 2-93 THROUGH 2-96 RESERVED]

CHAPTER 2. THE CERTIFICATION PROCESS—FEDERAL AVIATION REGULATIONS PARTS 121 AND 135

SECTION 5. CERTIFICATION PHASE

135. GENERAL. The certificate and approved operations specifications are issued to the applicant after all significant unsatisfactory items have been corrected. This action completes the certification process. The applicant shall not be certificated under any circumstance until the certification project manager (CPM) has determined that the applicant is fully capable of fulfilling its responsibilities as charged by Title 49, United States Code (U.S.C.) (formerly the Federal Aviation Act (FA Act) of 1958) and that the applicant will comply with the Federal Aviation Regulations (FAR) in an appropriate manner.

137. PREPARATION OF FEDERAL AVIATION ADMINISTRATION (FAA) CERTIFICATES. FAA Form 8430-18, "Air Carrier Certificate," shall be used for an air carrier certificate. FAA Form 8430-21, "Operating Certificate," shall be used for an operating certificate (see figures 2.2.5.1., 2.2.5.2., and 2.2.5.3.). The following information must be imprinted or typed on the appropriate form when the certificate is prepared for issuance:

A. *The Certificate Holder's Name.* The certificate holder's full and official name shall be entered directly below the words "This certifies that . . . ." Other names, such as "doing business as" (DBA) names, shall not be printed on a certificate.

NOTE: This explains the present variance between the FAR and FAA Order 8400.10 concerning policy regarding the placement of business names (and/or DBA's) on FAR Part 135 air carrier certificates. Although the deletion of DBA's from air carrier certificates was considered to be an administrative change via the *8400.10 handbook (Change 2), it would* be REQUIRED upon the adoption of proposed FAR Part 119. FAR Part 119 prescribes the content of air carrier certificates and operations specifications. Some flight standards district offices (FSDO) have received requests by FAR Part 135 air carrier certificate holders to place business names on operating certificates. These requests are consistent with FAR Part 135. FAR § 135.11, "Application and Issue of Certificate and Operations Specifications," states the following: "An applicant who meets the requirements of this part is entitled to—(1) An ATCO [air taxi/commercial operator] operating certificate containing all business names under which the certificate holder may conduct operations . . . ." FAR § 135.29, "Use of business names," states, in pertinent part, the following: "No certificate holder may operate an aircraft under [FAR Part 135] under a business name that is not on the certificate holder's operating certificate." Until the present regulations are superseded or modified, inspectors shall honor an FAR Part 135 air carrier's request to list DBA's on the air carrier certificate.

B. *The Certificate Holder's Address.* The physical location address of the certificate holder's principal base of operations shall be entered directly below the certificate holder's name. A post office box address is not acceptable unless it also reflects the physical location of the principal base of operations. The address on the certificate must be a physical location and may or may not be the same as the mailing address.

C. *The Certification Statement of Authority.* The pre-printed certification statement of authority on the Air Carrier Certificate (FAA Form 8430-18) shall not be modified (figure 2.2.5.1.). However, the pre-printed certification statement of authority on the Operating Certificate (FAA Form 8430-21) must be completed by imprinting or typing the following phrases in the spaces provided to complete the certificate, as appropriate:

(1) Operating Certificate for Intrastate Common Carriage (Figure 2.2.5.2.).

(a) In the first space, enter "Intrastate Common Carriage Operations."

(b) In the second space, enter "and the terms, conditions, and limitations in the approved operations specifications."

(c) In the third space, enter "indefinitely."

(2) Operating Certificate for Private Carriage (Figure 2.2.5.3.).

(a) In the first space, enter "Private Carriage Operations."

(b) In the second space, enter "and the terms, conditions, and limitations in the approved operations specifications."

(c) In the third space, enter "indefinitely."

D. *The Assigned Certificate Number.* The final certificate number will be obtained from AFS-620 in accordance with paragraph 41, and will be imprinted or typed in the space provided on the form.

E. *The Effective Date of Certificate.* The date to be entered in the space provided shall be the date of issuance. If a certificate is to be changed due to an address change or a change of the certificate-holding district office (CHDO), the date of original issuance shall be retained on the changed certificate. A change of name for the air operator or a change in the certification statement of authority has the effect of a new certification; therefore, a new certificate and certificate number shall be issued. For this situation, the issuance date of the new certificate will be entered in the space provided.

F. *The Certificate-Holding District Office's Designator.* The four-character, alpha-numeric designator of the CHDO shall be imprinted or typed into the "issued at" space of the form (for example, EA18).

G. *The Signature Block.* Air carrier certificates issued to air operators complying with FAR Part 121, or to air operators complying with FAR Part 135 commuter rules, shall be signed by the regional flight standards division (RFSD) manager or a designated member of the manager's staff. All other air operator certificates shall be signed by the CHDO manager.

H. *The Signature, Title, and Region/Office Block.* The full title of the person signing the certificate shall be entered in the space provided. When the RFSD manager signs the certificate, the full name of the region shall be entered in the "region/office" space (for example, Southwest Region). When the FSDO manager signs the certificate, the full name of the region and the FSDO acronym and number shall be entered in the "region/office" space (for example, Southwest Region, FSDO 18).

139. ISSUANCE OF OPERATIONS SPECIFICATIONS AND CERTIFICATE.

A. When it is determined that the applicant has met all regulatory requirements, the appropriate certificate and operations specifications will be presented to the applicant. The operations specifications will be prepared in accordance with the procedures in volume 3, chapter 1.

B. An applicant for an air carrier certificate will not, for any reason, be issued operations specifications or a certificate until the applicant has presented a copy of its Department of Transportation (DOT) economic authority (either a certificate or registration) to the CPM.

C. Before issuance, the operations specifications will be signed by the applicant and the appropriate principal inspectors. The original certificate and operations specifications will then be given to the new certificate holder.

141. CERTIFICATION REPORT. When the new operator is certificated, the CPM is responsible for assembling a certification report. This report must be signed by the CPM and will include the name and title of each team member who assisted in the certification project. The report will be maintained in the permanent file relating to the new operator during the business life of the operator. The report shall consist of 5 sections, A through E, as follows:

A. The formal application letter.

B. The compliance statement.

C. A copy of the operations specifications issued.

D. A copy of the certificate issued.

E. A summary of major difficulties experienced during the certification process and/or any recommendations that may enhance the process must be noted by phase and specialty. This summary will be entered into the Program Tracking and Reporting Subsystem (PTRS) in chronological order and will be maintained in the archival records. For standardization, the following format for summaries of major difficulties and/or recommendations will be arranged as follows:

(1) *Preapplication Phase (Operations, Maintenance, Avionics).* Include summaries of difficulties or recommendations by specialty.

(2) *Formal Application Phase (Operations, Maintenance, Avionics).* Include summaries of difficulties or recommendations by specialty.

(3) *Document Compliance Phase (Operations, Maintenance, Avionics).* Include summaries of difficulties or recommendations by specialty.

(4) *Demonstration and Inspection Phase (Operations, Maintenance, Avionics).* Include summaries of difficulties or recommendations by specialty.

143. CERTIFICATION REPORT RETENTION.

A. The district office shall retain the original of the certification report as long as the certificate holder remains active.

B. A copy of the certification report for a FAR Part 135 commuter air carrier or a FAR Part 121 air carrier shall be forwarded to the regional office for review and action, if appropriate. The review process shall include an analysis of the major difficulties experienced during the certification process.

144.–148. RESERVED.

FIGURE 2.2.5.1.
AIR CARRIER CERTIFICATE

U.S. Department
of Transportation

**Federal Aviation
Administration**

Air Carrier Certificate

This certifies that

has met the requirements of the Federal Aviation Act of 1958, as amended, and the rules, regulations, and standards prescribed thereunder for the issuance of this certificate and is hereby authorized to operate as an air carrier and conduct common carriage operations in accordance with said Act and the rules, regulations, and standards prescribed thereunder and the terms, conditions, and limitations contained in the approved operations specifications.

This certificate is not transferable and, unless sooner surrendered, suspended, or revoked, shall continue in effect indefinitely.

By Direction of the Administrator

Certificate number _____ _____
(Signature)

Effective date _____ _____
(Title)

Issued at _____ _____
(Region/Office)

FAA Form 8490-18 (6-87)

FIGURE 2.2.5.2
OPERATING CERTIFICATE FOR INTRASTATE COMMON CARRIAGE

U.S. Department
of Transportation

Federal Aviation
Administration

OPERATING CERTIFICATE

This certifies that

(Enter Intrastate Common Carriage Company Name)
(Enter Address of Principal Base of Operations)

has met the requirements of the Federal Aviation Act of 1958, as amended, and the rules, regulations, and standards prescribed therein for the issuance of this certificate and is hereby authorized to operate as an Air Operator and conduct

Intrastate Common Carriage Operations

in accordance with said Act and the rules, regulations, and standards; *and the terms, conditions, and limitations contained in the approved operations specifications*

This certificate is not transferable and, unless canceled, suspended, superseded, or revoked, shall continue in effect *indefinitely* .

By Direction of the Administrator

Certificate number: _____ _____ *(Signature)*

Effective date: _____ _____ *(Title)*

Issued at: _____

FAA Form 8430-21

FIGURE 2.2.5.2
OPERATING CERTIFICATE FOR INTRASTATE COMMON CARRIAGE

U.S. Department
of Transportation

Federal Aviation
Administration

OPERATING CERTIFICATE

This certifies that

(Enter Intrastate Common Carriage Company Name)
(Enter Address of Principal Base of Operations)

has met the requirements of the Federal Aviation Act of 1958, as amended, and the rules, regulations, and standards prescribed therein for the issuance of this certificate and is hereby authorized to operate as an Air Operator and conduct

Intrastate Common Carriage Operations

in accordance with said Act and the rules, regulations, and standards; *and the terms, conditions, and limitations contained in the approved operations specifications*

This certificate is not transferable and, unless canceled, suspended, superseded, or revoked, shall continue in effect *indefinitely* .

By Direction of the Administrator

Certificate number: _____ _____ *(Signature)*

Effective date: _____ _____ *(Title)*

Issued at: _____

FAA Form 8430-21

FIGURE 2.2.5.4
CERTIFICATION PHASES AND GATES—FLOW DIAGRAM

PHASE I. PREAPPLICATION

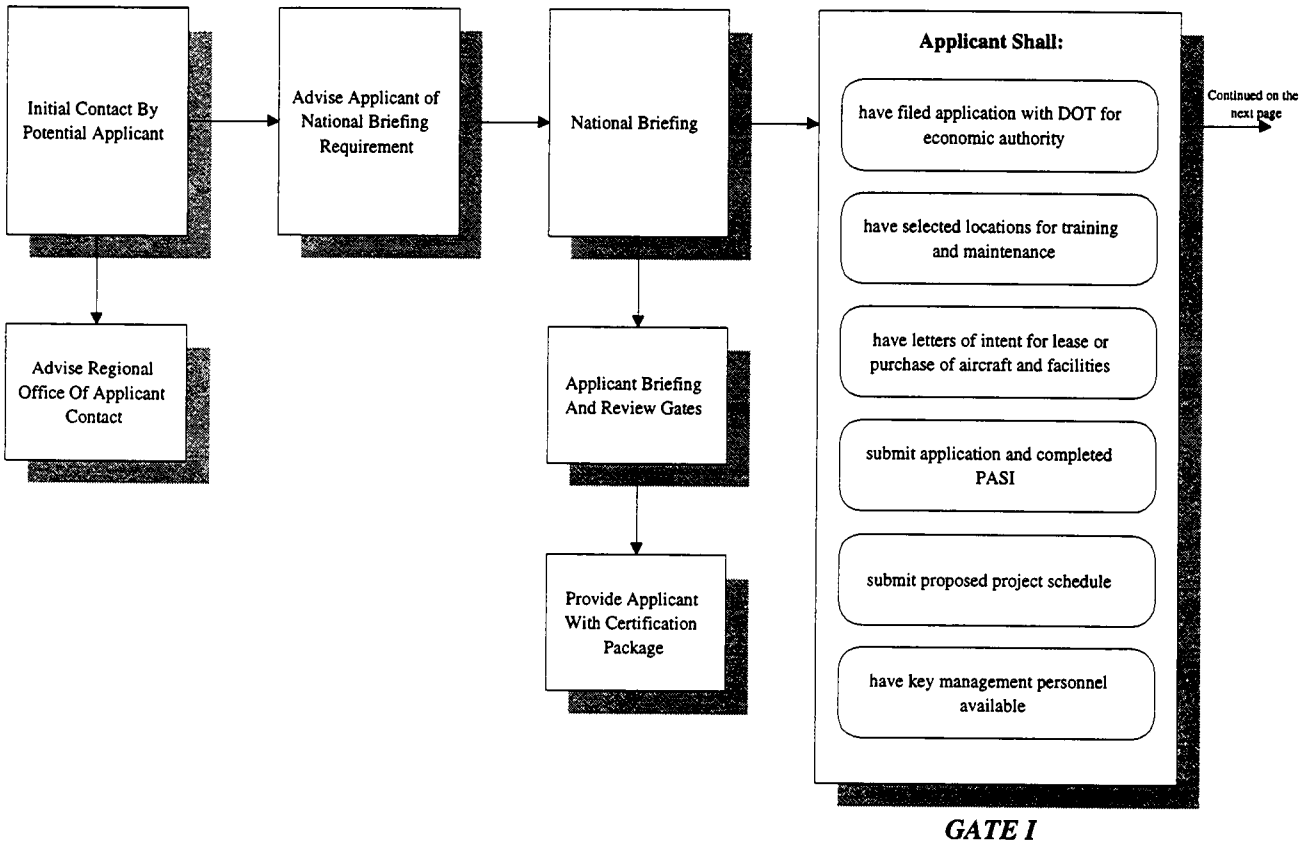


FIGURE 2.2.5.4-Continued
CERTIFICATION PHASES AND GATES—FLOW DIAGRAM

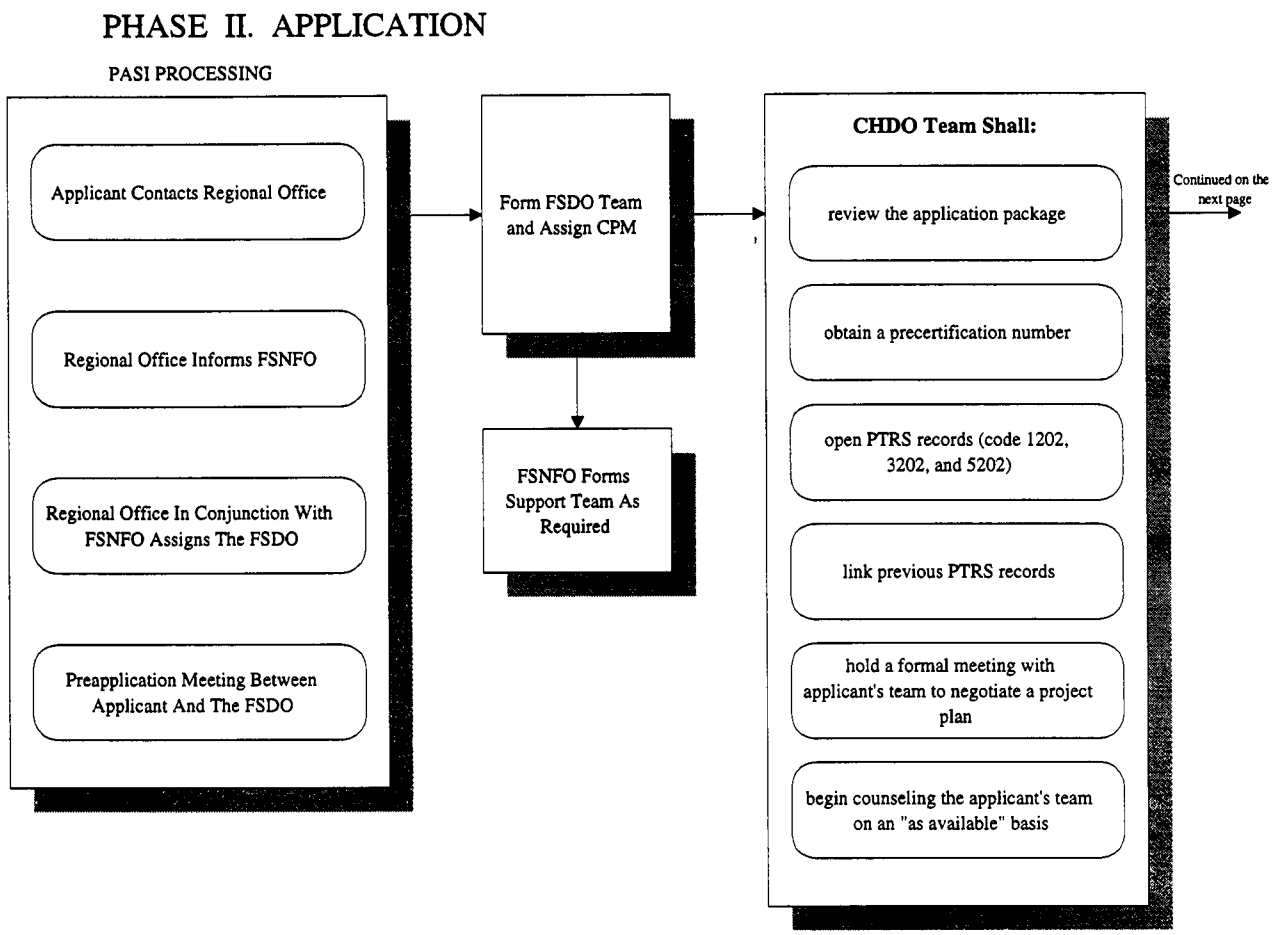


FIGURE 2.2.5.4-Continued
CERTIFICATION PHASES AND GATES—FLOW DIAGRAM

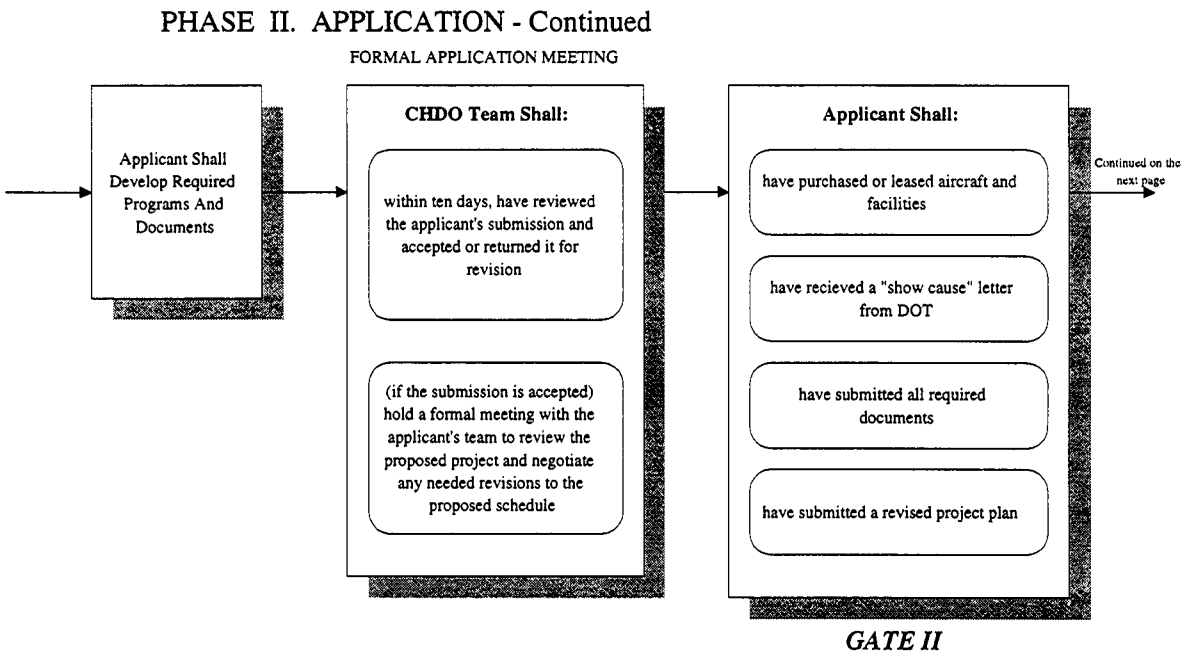


FIGURE 2.2.5.4-Continued
CERTIFICATION PHASES AND GATES—FLOW DIAGRAM

PHASE III. DOCUMENT COMPLIANCE AND REVIEW

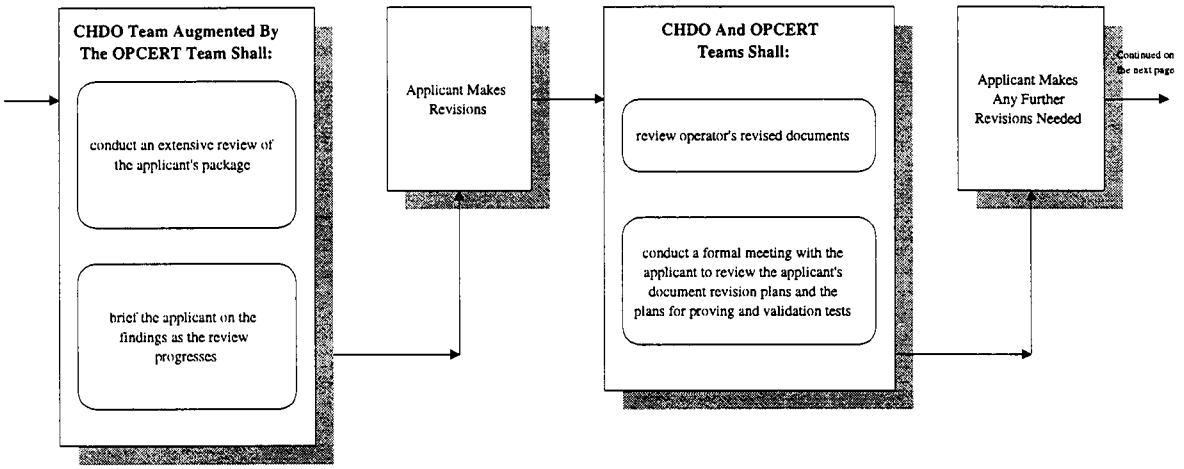


FIGURE 2.2.5.4-Continued
CERTIFICATION PHASES AND GATES—FLOW DIAGRAM

PHASE III. DOCUMENT COMPLIANCE AND REVIEW

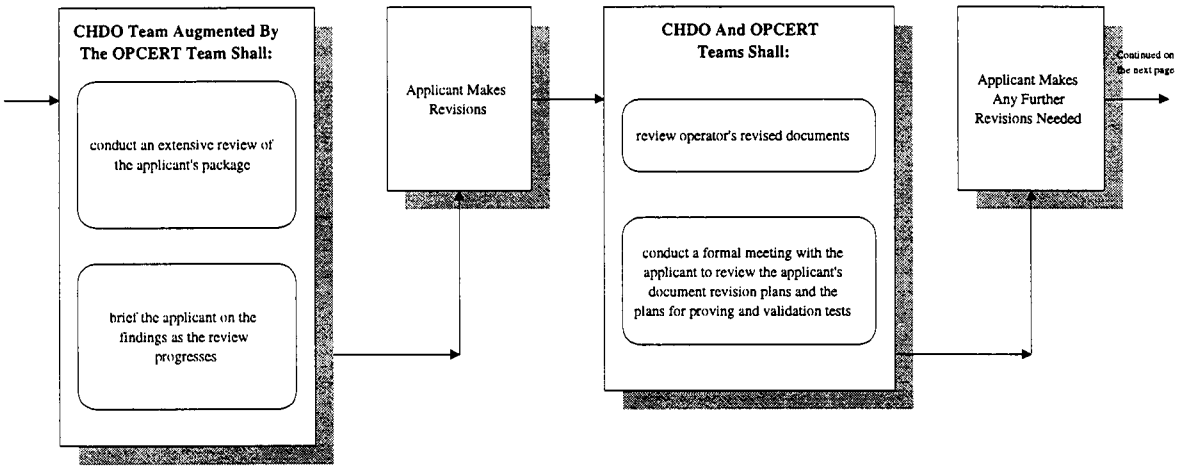
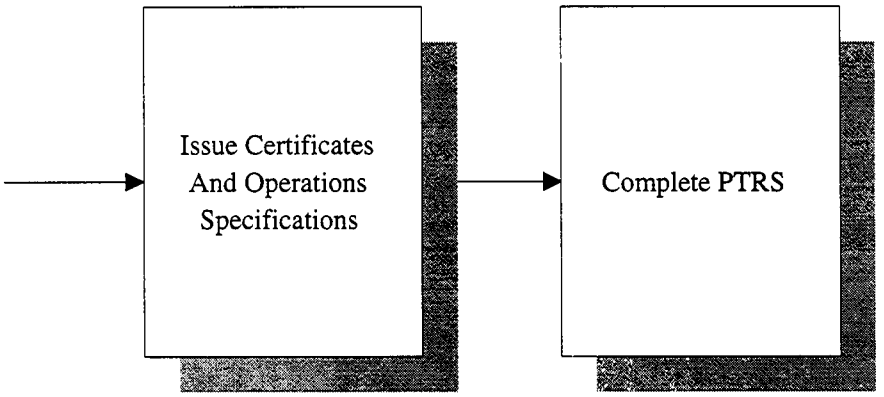


FIGURE 2.2.5.4-Continued
CERTIFICATION PHASES AND GATES—FLOW DIAGRAM

PHASE V. DOCUMENTATION



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CHAPTER 1. OPERATIONS SPECIFICATIONS

SECTION 7. AMENDMENT, SURRENDER, AND SUSPENSION OF OPERATIONS SPECIFICATIONS

261. APPLICABILITY. Federal Aviation Regulations (FAR) § 121.79 and FAR § 135.17 specify that operation specifications can be amended as a result of an operator's request or because the Federal Aviation Administration (FAA) determines that safety in air transportation or air commerce (in the case of a commercial operator) is affected and the change is in the public interest. In addition, an operator's operations specifications may be amended by the FAA due to a change in the operator's operating environment. This section contains direction and guidance to be used by principal inspectors for the amendment, surrender, and suspension of operations specifications for FAR Part 121 and FAR Part 135 air carriers and commercial operators (see volume 2, chapter 4 of this handbook for information on the processing of FAR Part 129 foreign flag air carrier operations specifications).

263. AMENDMENT PROCESS USING AUTOMATED OPERATIONS SPECIFICATIONS. Regardless of who initiates the amendment of an operator's operations specifications, the automation process involves the same basic procedures. The amendment of the operations specifications may involve the principal inspector doing any of the following: entering new data to the Vital Information System (VIS), changing the operations specifications checklist, changing the worksheets, or changing only an operations specifications paragraph. When making such changes using the automated operations specifications, principal inspectors should use the procedures that follow.

A. *Entry of New Data to VIS.* If new VIS data is required, the principal inspector must obtain the new data from the computer along with a copy of the current checklist. If new VIS data is not required, then the principal inspector must obtain a copy of the current checklist or, if neither the VIS nor the checklist have to be changed, then the principal inspector must obtain a set of worksheets for any affected paragraphs.

B. *Changing Operations Specifications Checklist.* When the operations specifications checklist must be changed, the principal inspector should enter or delete the appropriate statements and should also generate a set of worksheets for the affected paragraphs.

C. *Changing Worksheets.* The principal inspector should change the worksheets (whether obtained from the input of VIS or the checklist, or from the computer) by making appropriate selections and entering user-specific information. The principal inspector should then generate a draft set of the affected operations specifications paragraphs.

D. *Changing a Standard Operations Specifications Paragraph.* When Washington Headquarters changes a standard operations specifications paragraph, the VIS data entry guide, checklists, and worksheets do not have to be changed; only the amended standard paragraph must be changed and a new page issued. In most cases, however, any change to an operations specifications paragraph will require that the principal inspector make a corresponding change to the worksheets.

265. AMENDMENTS OF OPERATIONS SPECIFICATION. When amending operations specifications, a principal inspector should take into account the extent and complexity of the amendment. If the amendment is uncomplicated and involves only one or two paragraphs, then it may be practical to print only the affected paragraphs. If the amendment is extensive and involves entering VIS data or changing the checklist and worksheets (such as when an operator upgrades from FAR Part 135 operations to FAR Part 121 operations), then the principal inspector should generate a complete set of operations specifications. The principal inspector should review the draft set of operations specifications with the operator and, if necessary, make any corrections and resolve any conflicts. After the final corrections are made, the principal inspector should print and issue two sets of the amended operations specifications to the applicant; one set for the applicant's review and files, and one set for receipt and return. An amendment may be initiated either at the operator's request or by FAA initiation. The procedures for these two methods of initiating an amendment are as follows:

A. *Amendment of Operations Specifications at Operator's Request.* An operator may, in accordance

with FAR § 121.79(a)(1) or FAR § 135.17(a)(2), initiate an application to amend its operations specifications by submitting FAA Form 8400–8, "Operations Specifications," or by submitting a letter. Whether on the FAA Form 8400–8 or in the letter, the operator's request should include: a formal request for the desired changes, an explanation of the reasons for those changes, and any supporting information. In accordance with FAR § 121.79(c) and FAR § 135.17(b), the operator must file the application for amendment at least 15 days before the proposed effective date of the amendment.

(1) *Incomplete Application.* If the application is incomplete, the FAA should inform the applicant that the application is not acceptable in its present form but will be considered upon the receipt of additional, specified supporting documents and/or information.

(2) *Unacceptable Application.* The FAA may determine that the application is not acceptable because: the operator's request does not provide for an adequate level of safety in air transportation or air commerce, it would not be in the best interest of the public, or, it is in conflict with FAA policy or the FAR. In such a case, the applicant should be informed, in writing, that the application is unacceptable and include a statement explaining why it is not acceptable. The operator will have certain rights of appeal which are discussed in paragraph 269 in this section.

B. *FAA-Initiated Amendment of Operations Specifications.* If the FAA determines that an amendment to the operator's operations specifications is justified, the FAA should amend the operations specifications in accordance with the procedures discussed in section 2 of this chapter. In the case of a change in an operator's operating environment or when the FAA has specific safety concerns, the following procedures apply:

(1) *Change in the Operator's Operating Environment.* In some cases, the FAA may decide to amend an operator's operations specifications due to a change in the operator's operational environment. For example, the FAA may create a new operations specifications paragraph to ensure uniform compliance with a certain aspect of the FAR. In such cases, the principal operations inspector (POI) may initiate and amend an operator's operations specifications due to the change, without the operator having to apply on the operations specifications form (FAA Form 8400–8). Once the operator has demonstrated compliance with all appropriate FAR and operational and airworthiness requirements, the operations specifications may be issued in accordance with the procedures discussed in section 2 of this chapter.

(2) *Safety Concerns.* FAR § 121.79(a)(2) and FAR § 135.17(a)(1) provide the authority for the FAA to unilaterally amend an operator's operations specifications when the FAA has determined that safety in air transportation and the public interest necessitates such an amendment. When amending an operator's operations specifications under these regulations, the FAA is required by FAR § 121.79(b) and FAR § 135.17(d) to notify the operator in writing and then allow a minimum of 7 days for comments regarding the proposal. The 7-day period provides the operator with an opportunity to submit written information, views, and arguments on the proposal. After reviewing the comments, the flight standards district office (FSDO) either rescinds or adopts the amendment. If the FAA decides to amend the operations specifications, the final amended operations specifications should have an effective date of not less than 30 days after receipt by the operator. The operator has certain appeal rights which are discussed in paragraph 269. Examples of the types of FAA-initiated amendments due to safety concerns are as follows:

(a) The FAA will propose to amend an operator's operations specifications when it is determined that the operator's operating environment or its operational capability is no longer consistent with the operating authorizations, conditions, and limitations contained in its operations specifications. Examples of such cases are when the operator:

- Terminates operations with a specific make/model/series of aircraft that is authorized in its operations specifications
- Has a series of accidents or incidents involving a particular type of operation (such as low visibility takeoffs and/or landings at a time when the operations specifications authorize lower-than-standard weather minimums)
- Terminates a particular type of operation or area of operation (such as when the operator no longer conducts flag or minimum navigation performance specification (MNPS) operations)

(b) The FAA also amends an operator's operations specifications when the standard automated operations specifications have been amended on a national basis and Washington Headquarters has requested that POI's amend all of their operator's operations specifications. In this case, the operations specifications should be amended in accordance with guidelines and procedures that have been established by Washington Headquarters.

267. EMERGENCY AMENDMENT OF OPERATIONS SPECIFICATION. FAR § 121.79(b) and FAR § 135.17(d) provide that the FAA may amend an operator's operations specifications without a stay and also that the amendment will become effective immediately upon receipt by the operator. This case applies only when an emergency exists which requires immediate action with respect to safety in air transportation and when the other procedures to amend operations specifications found in FAR § 121.79 and FAR § 135.17 are impractical or contrary to the public interest. One example of when an emergency amendment to an operator's operations specifications would be justified would be when the operator is knowingly operating a make/model/series of aircraft that is authorized in paragraph A3 of its operations specifications, but is doing so either with unqualified crewmembers or with the aircraft not in an airworthy condition. Another example would be when the operator is continuing to operate flights into an airport or area that has been shown to be unsafe due to inadequate or unavailable facilities either because of a natural disaster or civil strife.

A. *Contents of Emergency Order.* In accordance with FAR § 121.79(b), if an emergency amendment is made to an operator's operations specifications, the amendment must contain the finding of the emergency action and the reasons for the action. The emergency order must also contain a statement that within 30 days, the regional flight standards division (RFSD) manager will consider any facts presented by the operator which show that the emergency order is unwarranted or that the deficiencies in question have been corrected.

B. *Further Guidance.* An emergency amendment to an operator's operations specifications does not constitute a certificate action within the meaning of Title 49 of the United States Code (U.S.C.) § 44709 (formerly § 609 of the Federal Aviation Act (FA Act)) but is a certificate action within the meaning of 49 U.S.C. § 46105 (formerly § 1005 of the FA Act) and FAR § 13.20. An emergency amendment to an operator's operations specifications requires close coordination with the POI, the RFSD, and the office of Regional Counsel. A limited amount of guidance concerning such orders is contained in FAA Order 2150.3, "Compliance and Enforcement Program."

269. OPERATOR APPEAL RIGHTS. In all situations involving operations specifications amendments or FAA-initiated, non-emergency amendments, an operator has certain appeal rights. These appeal rights are provided in FAR §§ 121.79 and 135.17, and are exercised according to the way in which the amendment was initiated, as follows:

A. *Operator-Requested Amendments.* If the FAA has determined that an operator's request for an amendment to its operations specifications is unacceptable, the operator may, within 30 days after receipt of the certificate–holding district office's (CHDO) notice of disapproval, petition the Director of Flight Standards Service (AFS–1) to reconsider the CHDO's refusal to amend the operations specifications (see paragraph 265A). During the course of the reconsideration time period, no amendments to the operations specifications paragraph(s) will be made. A petition made by an operator more than 30 days after receiving the notice of disapproval, will not be considered by the FAA. If AFS–1 determines that an amendment to an operator's operations specifications is justified, the appropriate RFSD office will be notified and instructed to amend the operations specifications either as requested by the operator or as amended by the FAA. If AFS–1 determines, after considering the operator's petition, that an amendment is not appropriate, the operator and the RFSD will be notified accordingly. In the case of disapproval, the FAR do not provide any additional appeal rights for the operator.

B. *FAA-Initiated Amendments.* When the FAA determines that an amendment to an operator's operations specifications is necessary (see paragraph 265B), a notice of the proposed amendment must be provided, in writing, to the operator. The notice provides for not less than a 7-day period within which the operator may submit to the CHDO any written data, views, and arguments concerning the proposed amendment. If, after considering any objections the operator may have, the CHDO determines that the proposed amendment should be made, the CHDO will notify the operator, and send the amended operation specification. The operation specification will have an effective date of not less than 30 days after the date that the operator received the notice. The operator may, within the 30-day period, appeal the proposed amendment to the AFS-1. If the operator elects to petition AFS–1 for reconsideration of the proposed amendment, the effective date of the amendment is stayed until a decision has been made by AFS–1 as to the final disposition of the proposed amendment. If AFS–1 determines that the proposed amendment to the operator's operations specifications is justified, the appropriate RFSD office will be notified to amend the operations specifications. If AFS–1 determines, after considering the operator's petition, that the proposed amendment is not appropriate, the operator and the RFSD will be notified that there will be no amendment.

NOTE: If AFS–1 denies the appeal, the FAR do not provide any additional appeal rights for the operator.

C. *Emergency Amendments.* As stated in paragraph 267, an emergency order amending an operator's operations specifications must contain a statement that the operator has 30 days to reply in writing to the order or to request a hearing in accordance with Subpart D of FAR Part 13. The emergency amendment to the operations specifications remains effective until the matter is finally adjudicated.

271. SURRENDERING OF OPERATIONS SPECIFICATION. Upon a change in its operating environment, an operator should exchange the appropriate paragraphs of its operations specifications for the amended paragraphs that reflect the new operating environment.

A. *Criteria.* The criteria to hold a particular operations specifications authorization is no less than that necessary for its original issuance. For example, if an operator was issued an authorization to conduct operations in MNPS airspace but no longer has aircraft equipped to conduct that kind of operation, the operator must surrender the MNPS authorization.

(1) If an operator ceases all operations and is no longer equipped, or able to conduct any kind of operation, the CHDO shall request that the operator voluntarily surrender all of the operations specifications. Depending upon the circumstances, the CHDO may also request that the operator voluntarily surrender the certificate (see volume 2, chapter 3, section 4 for information on the surrender of certificates).

(2) Seasonal operators who are equipped to resume operations are not required to surrender operations specifications during the inactive season.

B. *Refusal to Surrender.* If an operator does not meet the requirement to hold an operations specifications paragraph, but refuses to surrender the paragraph, the POI shall amend the operations specifications as discussed in paragraph 269 of this section. If safety in air commerce is affected, then an emergency amendment is appropriate.

C. *Voluntary Surrender.* If an operator voluntarily surrenders a part of its operations specifications, an amended operations specifications must be issued to reflect the operator's new operating environment. If an operator surrenders all of its operations specifications, the operations specifications shall be deleted from the VIS operations specifications subsystem as described in the operations specifications Subsystem User Guide.

273. SUSPENSION OF OPERATIONS SPECIFICATION. The suspension of an operator's operations specifications generally occurs after legal enforcement action. FAA Order 2150.3, ''Compliance and Enforcement Program,'' contains the information, policies, guidelines, and procedures to be followed by principal inspectors when taking legal enforcement action against an operator and the when taking actions that would result in the suspension of the operator's operations specifications.

274.–280. RESERVED.

[PAGES 3-127 THROUGH 3-156 RESERVED]

CHAPTER 2. TRAINING PROGRAMS AND AIRMAN QUALIFICATIONS

SECTION 6. FLIGHT TRAINING CURRICULUM SEGMENTS

461. GENERAL. This section specifies the objectives of flight training. Both the structure and content of flight training curriculum segments are discussed. Also clarified are the differences between training objectives and qualification objectives. Flight training consists of certain required maneuvers and procedures which are referred to as "training events". The training events which must be included in flight training curriculum segments to satisfy the requirements of Federal Aviation Regulations (FAR) Parts 121 and 135, are specified in maneuvers and procedures tables (see tables 3.2.6.4. through 3.2.6.10.).

463. FLIGHT TRAINING OBJECTIVES. Flight training, as used in this section, means the conduct of training events in an aircraft, a flight simulator, or a flight training device in accordance with an approved training curriculum. Flight training (except for windshear training) may be conducted entirely in an aircraft. Flight training may also be conducted using a combination of an aircraft with either a flight simulator and/or a flight training device. In certain cases, flight training may be conducted entirely in an advanced flight simulator. In all cases, the primary objective of flight training is to provide an opportunity for flight crewmembers to acquire the skills and knowledge necessary to perform to a desired standard. This opportunity provides for demonstration, instruction, and practice of the maneuvers and procedures (training events) pertinent to a particular aircraft and crewmember duty position. Successful completion of flight training is validated by appropriate testing and checking.

465. QUALIFICATION OBJECTIVES. The objective of the qualification curriculum segment is to determine whether enough learning has occurred by comparing an individual's performance in practical situations, to established standards. A person meeting the qualification objectives satisfactorily completes the curriculum. A person failing to meet these objectives must be returned to training status. After additional training, that person must retake and satisfactorily complete at least the previously unsatisfactory portions of the qualification curriculum segment.

467. FLIGHT TRAINING MODULES OR EVENT OUTLINES.

A. A flight training curriculum segment may be outlined in a modular format or may be outlined as a series of events in which training must be accomplished. This curriculum segment must include as many training modules or events as necessary to provide appropriate training. Each training module or event outline should provide at least the following information:

- A descriptive title of the training module
- A list of the training events that must be accomplished during flight training
- Any specific conditions applicable to a particular training event such as the weather minimums to be used
- Provisions for briefing before and after each training period

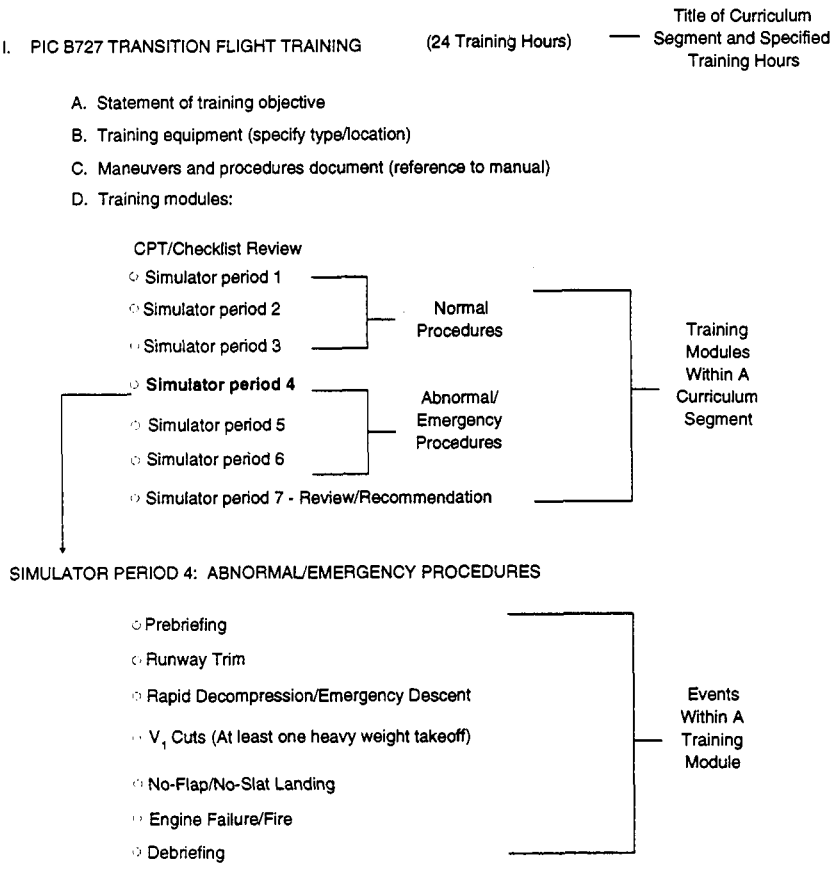
B. The operator may submit an outline containing training modules representing blocks of training events, or the operator may submit an outline listing all the elements and events to be accomplished during the flight training. Other forms of presenting the flight training curriculum segment may be acceptable. Regardless of the format used, inspectors should evaluate a proposed flight training curriculum by comparing it with the maneuvers and procedures tables in this section. During actual training, the order and rate of training event presentation may vary. An instructor may vary the events in a published curriculum segment, during any particular period, when a student's progress indicates it is necessary. However, a required event must not be omitted from the curriculum segment. A principal operations inspector (POI) may need to review the operator's flight training courseware, such as lesson plans or instructor guides, to assure that a plan exists in which all events will be appropriately accomplished. To further support that a plan exists, a POI may need to review the forms that will be used to record flight training. It is unnecessary for the POI to approve courseware or training record forms.

C. It is unnecessary to include detailed descriptions of how specific maneuvers or procedures will be accomplished in a flight training module outline or training event outline. However, detailed descriptions must be included in an Federal Aviation Administration (FAA)-approved aircraft flight manual (AFM), the operator's aircraft operating manual, or in a separate maneuvers and procedures document. Detailed descriptions or pictorial displays are required for certain normal, abnormal, and emergency maneuvers, procedures, and functions which are performed in flight training. POI's may require operators to provide extremely detailed training outlines in any of the following situations:

- When directed by AFS-200
- When a new technology or procedure is addressed in the training module (examples include fly-by-wire aircraft control, and helicopter IFR flight slower than V_{mini})
- When an operator has had approval of a curriculum segment withdrawn because of deficiencies, the POI may require any redeveloped flight curriculum segments to include highly detailed training module or training event outlines (The level of detail should provide sufficient information for the POI to determine that previously identified deficiencies are corrected.)

D. To ensure regulatory compliance, the training module or training event outlines must contain at least the training events listed in the appropriate maneuvers and procedures tables in this section. The interrelationship of training modules and/or training events in a curriculum segment should provide for an orderly and practical progression of training. For example, taxiing may be listed as a training event in the first module of a flight training curriculum segment but does not have to be listed in subsequent training modules, even though training on the taxiing maneuver will occur throughout flight training. Training event modules should be developed so that training events are presented in a logical sequence. For example, missed approach training should be conducted in conjunction with approach training.

E. The following example illustrates the interrelationship of a curriculum segment and training modules when a modular format is used:



469. TRAINING HOURS. Flight training curriculum segments must specify a planned number of training hours. The operator's proposed number of training hours must realistically allow enough time for demonstration, instruction, and practice of the training events listed in the entire curriculum segment. A POI shall not approve a proposed flight training curriculum segment unless the specified training hours realistically allow enough time to accomplish the required training events.

A. FAR §§ 121.424 and 121.425 specify programmed hours of flight training for pilots and flight engineers enrolled in the initial new-hire and initial equipment categories of training. It is national direction and guidance that the training hours specified for any FAR Part 121 pilot-in-command (PIC), second-in-command (SIC), or flight engineer (FE) flight training curriculum segments shall not be less than the programmed hours specified by FAR §§ 121.424(c) and 121.425(b). Table 3.2.6.1. lists the FAR Part 121 programmed hours.

TABLE 3.2.6.1.
FAR PART 121 REGULATORY PROGRAMMED HOURS
FAR-Programmed Hours By Category Of Training

		Initial New-Hire			Initial Equipment		
		PIC	SIC	FE	PIC	SIC	FE
FAR Part 121 Airplane Groups	Group I (Reciprocating)	10	6	6	10	6	6
	Group I (Turboprop)	15	7	7	15	7	7
	Group II (Turbojet)	20	10	10	20	10	10

B. FAR § 121.427(d)(1) and (2) stipulate that programmed hours are not specified for pilot or flight engineer recurrent flight training. However, if the flight training is conducted in an approved airplane flight simulator, FAR § 121.409(b)(1) requires at least 4 hours of training at the pilot controls for PIC and SIC training. Four hours of training are required regardless of whether the training is conducted on the events listed in FAR Part 121, Appendix F, or the training is conducted under an approved line-oriented flight training (LOFT) program.

C. FAR Part 121 does not specify programmed hours for the other categories of training. FAR Part 135 does not specify programmed hours for any of the categories of training. The number of training hours must be specified, however, on all flight training curriculum segment outlines. Because of the various situations that can be encountered, it is difficult to provide guidance on acceptable training hours for flight training curriculum segments. POI's must thoroughly study an operator's proposals. Based on experience with the operator, past experiences with other operators, as well as their own training experiences, POI's must use reasonable judgment when determining whether the training can be adequately accomplished within the training hours specified by the curriculum segment.

D. When flight training is conducted in a flight simulator or training device, it is acceptable and preferable for the flight training curriculum segment to be developed so that two pilots can be trained during a single flight training session. This includes the training of a PIC and SIC, two PIC's, or two SIC's at the same time. During this type of training, one pilot (pilot A) manipulates the controls of the aircraft while the other pilot (pilot B) performs the duties of the "pilot-not-flying" (PNF) the aircraft. During the same training session, the pilots reverse roles. Pilot B manipulates the controls, and pilot A performs the duties of the PNF. The duties of the PNF are typically included in the operator's aircraft operating manuals and/or in the maneuvers and procedures document. These duties include normal, abnormal, and emergency duties (that are performed by the PNF) and the crew participation activities (crew resource management (CRM) concepts) used by the operator. Both pilots are receiving essential "crew-concept" training throughout the training session. Therefore, the total training hours accomplished during the training session can be credited to each of the participating pilots. For example, if a PIC and an SIC participated in a 4-hour flight simulator session, both pilots would receive 4 hours of training credit. This method of crediting training hours is valid only when both student

pilots manipulate the controls for approximately equal amounts of time. This method of crediting training hours is not valid when the instructor is providing instruction and also is occupying one of the pilot seats of the flight simulator, flight training device, or aircraft.

E. Both recurrent and qualification LOFT training sessions should be based on at least 4 hours of total crewmember training activity. When the guidance in AC 120-35B, "Line Operational Simulations: Line-Oriented Flight Training, Special Purpose Operational Training, Line Operational Evaluation" (as revised is followed, all crewmembers who participate in a LOFT training session are credited with 4 hours of training time, as follows:

(1) *Two Trainees.* Appropriate crew composition is central to the LOFT training concept. Acceptable scheduling practices and crew substitution allowances differ in recurrent LOFT and qualification LOFT. Refer to AC 120-35B for specific differences. When the crew consists of two PIC trainees or two SIC trainees, both pilots should receive full credit (4 hours), provided the following conditions are met:

- The LOFT session conforms to the minimum 4-hour format described in Advisory Circular (AC) 120-35B
- At least 2 1/2 hours are spent in the LOFT scenario
- The pilots swap seats at approximately the midpoint in the LOFT flight segment

(2) *One Trainee.* When only one trainee participates in qualification LOFT, that trainee should receive full credit (4 hours), provided the following conditions are met:

- The LOFT session conforms to the minimum 4-hour format described in AC 120–35
- At least 2 1/2 hours are spent in the LOFT scenario (including SPOT)

NOTE: A 2-hour qualification LOFT session for one pilot does not meet the training requirements of FAR Part 121, Appendix H. A qualification LOFT program consists of at least a 4-hour course of training for each flightcrew.

F. Tables 3.2.6.2. and 3.2.6.3. specify established national norms for flight training curriculum segments. These norms are based on the assumption that there is reasonable training support, such as proficient instructors and well-organized flight instructor guides. The national norms in table 3.2.6.2. are for flight training when most or all of it is being conducted in a flight training device or flight simulator, and when two pilots are being trained at the pilot controls during the same training session (see subparagraph D). The national norms in table 3.2.6.3. are for flight training when only one pilot is being trained in a flight training device or flight simulator, or when flight training is conducted entirely in an aircraft.

G. When determining the adequacy of flight training hours, a POI should use these national norms as a point from which other factors shall be weighed. There may be many reasons why the training hours need to be greater than the national norm. The operator may need to specify more hours because of the complexity of the aircraft or types of operation. The POI may need to require more hours because of inadequate training support. Conversely, training hours fewer than the national norm may be fully acceptable due to the use of highly sophisticated, modern training methods, effective systems integration in aircraft ground training, less complex aircraft, or the conduct of a less complex type of operation. Some factors that would indicate a need for more training hours may be counterbalanced by other factors indicating that fewer training hours are necessary. The following diagram illustrates some of the factors that should be considered when determining the adequacy of flight training hours:

Special Operations	No Special Operations
New Entrant Operator	Basic Servo/Mechanical Instruments
Complex Pilot Operation of Aircraft Systems, Engines, Propellers	Pilot Experience with Similar Aircraft
Critical Aircraft Performance	Modern Simulators and Training Devices
EFIS, FMS, Autoflight	Well Organized Flight Instructor Guides
Dissimilar Flightcrew Experience Levels	Basic Navigation System
Low Visibility Capabilities	Simple Flight Handling Characteristics
Complex Navigation Systems	Effective System Integration Training

More than National Norm	National Norm	Less than National Norm

TABLE 3.2.6.2.
FLIGHT TRAINING HOURS
(NATIONAL NORMS)
TWO PILOTS: FLIGHT TRAINING DEVICE AND/OR FLIGHT SIMULATOR

		CATEGORY OF TRAINING				
	Family of Aircraft	Initial New-Hire	Initial Equipment	Transition	Upgrade	Recurrent
TRANSPORT & COMMUTER CAT	Part 121 Group I (Reciprocating)	PIC - 24 SIC - 24 FE - 20	PIC - 20 SIC - 20 FE - 20	PIC - 20 SIC - 20 FE - 20	SIC TO PIC 8 FE TO SIC 20	PIC - 4 SIC - 4 FE - 4
	Part 121 Group I (Turboprop)	PIC - 24 SIC - 24 FE - 20	PIC - 20 SIC - 20 FE - 20	PIC - 20 SIC - 20 FE - 20	SIC TO PIC 8 FE TO SIC 20	PIC - 4 SIC - 4 FE - 4
	Part 121 Group II (Turbojet)	PIC - 28 SIC - 28 FE - 20	PIC - 24 SIC - 24 FE - 20	PIC - 24 SIC - 24 FE - 20	SIC TO PIC 8 FE TO SIC 28	PIC - 4 SIC - 4 FE - 4
	Part 135 Transport and Commuter Category	PIC - 24 SIC - 24	PIC - 20 SIC - 20	PIC - 20 SIC - 20	SIC TO PIC 8	PIC - 4 SIC - 4
MULTI ENGINE	Part 135 IFR/VFR	PIC - 16 SIC - 16	PIC - 12 SIC - 12	PIC - 8 PIC - 8	SIC TO PIC 4	PIC - 2 SIC - 2
	Part 135 VFR Only	PIC - 4 SIC - 4	PIC - 4 SIC - 4	PIC - 4 SIC - 4	SIC TO PIC 4	PIC - 1 SIC - 1
SINGLE ENGINE	Part 135 IFR/VFR	PIC - 8 SIC - 8	PIC - 4 SIC - 4	PIC - 4 SIC - 4	SIC TO PIC 2	PIC - 2 SIC - 2
	Part 135 VFR Only	PIC - 4 SIC - 4	PIC - 4 SIC - 4	PIC - 2 SIC - 4	SIC TO PIC 2	PIC - 1 SIC - 1
HELI COPTER	IFR/VFR	PIC - 16 SIC - 16	PIC - 12 SIC - 12	PIC - 8 SIC - 8	SIC TO PIC 4	PIC - 2 SIC - 2
	VFR Only	PIC - 4 SIC - 4	PIC - 4 SIC - 4	PIC - 4 SIC - 4	SIC TO PIC 4	PIC - 1 SIC - 1

TABLE 3.2.6.2.
FLIGHT TRAINING HOURS
(NATIONAL NORMS)
TWO PILOTS: FLIGHT TRAINING DEVICE AND/OR FLIGHT SIMULATOR

		CATEGORY OF TRAINING				
	Family of Aircraft	Initial New-Hire	Initial Equipment	Transition	Upgrade	Recurrent
TRANSPORT & COMMUTER CAT	Part 121 Group I (Reciprocating)	PIC - 24 SIC - 24 FE - 20	PIC - 20 SIC - 20 FE - 20	PIC - 20 SIC - 20 FE - 20	SIC TO PIC 8 FE TO SIC 20	PIC - 4 SIC - 4 FE - 4
	Part 121 Group I (Turboprop)	PIC - 24 SIC - 24 FE - 20	PIC - 20 SIC - 20 FE - 20	PIC - 20 SIC - 20 FE - 20	SIC TO PIC 8 FE TO SIC 20	PIC - 4 SIC - 4 FE - 4
	Part 121 Group II (Turbojet)	PIC - 28 SIC - 28 FE - 20	PIC - 24 SIC - 24 FE - 20	PIC - 24 SIC - 24 FE - 20	SIC TO PIC 8 FE TO SIC 28	PIC - 4 SIC - 4 FE - 4
	Part 135 Transport and Commuter Category	PIC - 24 SIC - 24	PIC - 20 SIC - 20	PIC - 20 SIC - 20	SIC TO PIC 8	PIC - 4 SIC - 4
MULTI ENGINE	Part 135 IFR/VFR	PIC - 16 SIC - 16	PIC - 12 SIC - 12	PIC - 8 PIC - 8	SIC TO PIC 4	PIC - 2 SIC - 2
	Part 135 VFR Only	PIC - 4 SIC - 4	PIC - 4 SIC - 4	PIC - 4 SIC - 4	SIC TO PIC 4	PIC - 1 SIC - 1
SINGLE ENGINE	Part 135 IFR/VFR	PIC - 8 SIC - 8	PIC - 4 SIC - 4	PIC - 4 SIC - 4	SIC TO PIC 2	PIC - 2 SIC - 2
	Part 135 VFR Only	PIC - 4 SIC - 4	PIC - 4 SIC - 4	PIC - 2 SIC - 4	SIC TO PIC 2	PIC - 1 SIC - 1
HELI COPTER	IFR/VFR	PIC - 16 SIC - 16	PIC - 12 SIC - 12	PIC - 8 SIC - 8	SIC TO PIC 4	PIC - 2 SIC - 2
	VFR Only	PIC - 4 SIC - 4	PIC - 4 SIC - 4	PIC - 4 SIC - 4	SIC TO PIC 4	PIC - 1 SIC - 1

471. COURSE COMPLETION REQUIREMENTS.

A. Ordinarily, a flight crewmember completes a flight training curriculum segment by successfully accomplishing each training event and the specified number of training hours. Flight crewmembers are then required to successfully meet the requirements specified in the qualification curriculum segment (see section 9 for the qualification curriculum segment requirements). If a person fails to meet any of the qualification requirements because of a lack in flight proficiency, that person must be returned to training status. After retraining, an instructor recommendation is required for reaccomplishing the unsatisfactory qualification requirement.

B. A flight crewmember may successfully complete a flight training curriculum segment without completing the specified number of training hours, provided all of the following conditions are met:

(1) The crewmember successfully completes all of the training events required by the curriculum segment.

(2) An instructor recommends the flight test be conducted before completion of the specified number of training hours. The recommendation must be suitably documented.

(3) The flight crewmember satisfactorily completes the qualification curriculum segment requirements. If a flight crewmember fails to meet the qualification curriculum segment requirements because of a lack in flight proficiency, he must be required to complete all the training hours specified in the flight training curriculum segment. The crewmember must then be recommended by an instructor before reaccomplishing the failed qualification requirements.

473. EVALUATION OF FLIGHT TRAINING CURRICULUM SEGMENT OUTLINES FOR INITIAL APPROVAL. When evaluating a flight training proposal for initial approval, an inspector must determine that the proposed curriculum segment meets the following requirements:

A. The training events must be consistent with the maneuvers and procedures tables applicable to the specific category of training. An inspector must select the appropriate maneuvers and procedures table and make a side-by-side comparison of the table and the proposed flight training curriculum segment. The required training events and the appropriate level flight training device, flight simulator, or aircraft to be used must be in the proposal. Omission of any required training event or inappropriate use of a flight training device or flight simulator is sufficient reason to deny initial approval.

B. The specified training hours are realistic, as discussed in paragraph 469.

C. The training emphasizes specific areas applicable to the category of training. Since flight training curriculum outlines are not usually constructed in a manner that allows for a determination that appropriate areas are emphasized, an inspector must examine courseware (such as flight instructor guides and LOFT scenarios) to determine if appropriate areas will be emphasized and if the operator is capable of developing acceptable courseware. In the paragraphs preceding the applicable maneuvers and procedures tables in this section, training emphasis considerations for each category of flight training are discussed.

475. EVALUATING THE OPERATOR'S MANEUVERS AND PROCEDURES DOCUMENT. The operator must provide a maneuvers and procedures document for approval by the FAA. An inspector must determine that this document provides detailed descriptions or pictorial displays for the normal, abnormal, and emergency maneuvers, including the procedures and functions that will be performed in flight training. Instructor guides or lesson plans which support the maneuvers and procedures document should specify the conditions (such as weather, aircraft weight, and other parameters) to be applied during training on a maneuver or procedure. The conditions specified in these guides or lesson plans should be equivalent to the types of operations authorized by the operations specifications, such as low visibility takeoffs or the use of Category I (CAT I) or Category II (CAT II) minimums. FAA policy requires detailed descriptions (or pictorial displays) of at least those training events identified with the symbol M in the appropriate maneuvers and procedures tables. Maneuvers and procedures documents must be evaluated in sufficient detail to ensure the following requirements are met:

- The descriptions of applicable maneuvers or procedures must conform to recommendations made in the Flight Standardization Board report when appropriate.
- The description of each maneuver or procedure must conform to the operating limitations and procedures in the FAA-approved airplane/rotorcraft flight manual or the operator's aircraft operating manual.
- The description of each maneuver or procedure must conform to the certificate holder's procedural instructions for cockpit checks,

altitude awareness, required callouts, crew coordination, and cockpit resource management.

- The description of each maneuver or procedure must specify the operator's procedures, such as altitudes, configuration airspeeds, and other parameters.

477. AIRCRAFT FAMILIES. The four families of aircraft used in FAR Parts 121 and 135 operations are described in paragraph 285 of section 1. The flight training requirements for flight crewmembers differ significantly between each family. Within each family, the flight training requirements are similar, even though individual aircraft may differ significantly in construction and appearance. The maneuvers and procedures tables have been tailored to account for similar flight crewmember knowledge, skill, and ability requirements common to aircraft of a particular family and specific to different kinds of operations within a family.

A. *Transport and Commuter Category Airplane Family.* Airplanes in this family are similar in operational characteristics. Crewmembers of airplanes in this family are required to have similar knowledge, skills, and abilities regardless of the applicable operating regulation (FAR Part 121 or FAR Part 135). The maneuvers and procedures tables containing required training events for flight crewmembers operating airplanes in this family are in paragraphs 499 through 505 (see tables 3.2.6.4. through 3.2.6.7.).

B. *Multiengine General Purpose Airplane Family.* Crewmembers of airplanes in this family are required to have similar knowledge, skills, and abilities when operating under FAR Part 135. The flight training events required for flight crewmembers operating airplanes in this family are identified in the maneuvers and procedures table in para graph 507 (see table 3.2.6.8.).

C. *Single-Engine Airplane Family.* Crewmembers of airplanes in this family are required to have similar knowledge, skills, and abilities to be operated under FAR Part 135. The flight training events required for the operation of single-engine airplanes are identified in the maneuvers and procedures table in paragraph 509 (see table 3.2.6.9.).

D. *Helicopter Family.* Crewmembers operating helicopters under FAR Part 135 are required to have similar knowledge, skills, and abilities. The flight training events required for flight crewmembers operating helicopters are identified in the maneuvers and procedures table in paragraph 511 (see table 3.2.6.10.).

479. FLIGHT TRAINING DEVICES AND FLIGHT SIMULATORS. Flight training equipment consists of seven levels of flight training devices, four levels of flight simulators, and the aircraft. The approved use of each item of flight training equipment is listed in the maneuvers and procedures tables. These devices and simulators are the only types of flight training equipment (other than aircraft) which may be approved for use in an FAA-approved flight training program. Before any level 1 through level 5 flight training device can be used, it must be evaluated by the POI to determine that it meets the prescribed requirements for the appropriate level of flight training device. Before a specific level 6 and 7 training device or any level flight simulator can be used, it must be evaluated and qualified by the National Simulator Program Manager (NSPM) and approved by the operator's POI. The following paragraphs describe the flight training devices and flight simulators applicable to FAR Parts 121 and 135 flight training. Advisory Circulars 120-40 and 120-45 (as amended) provide the qualification policy, and criteria, as well as more detailed technical descriptions of flight simulators and flight training devices. The functional descriptions in the following paragraphs provide only a brief overview. Therefore, the appropriate advisory circulars are the only authorized source documents and must be used for evaluation and approval of flight training devices and flight simulators.

NOTE: The functional and technical descriptions for the first three levels of flight training devices are presently under development and are not applicable to FAR Part 121 or FAR Part 135 flight training.

481. LEVEL 4 - FLIGHT TRAINING DEVICE.

A. *Purpose:* To permit learning, development, and the practice of skills and cockpit procedures necessary for understanding and operating the integrated systems of a specific aircraft.

B. *Functional Description:* A level 4 training device has the following characteristics and components:

- A replica of the flight deck panels, switches, controls, and instruments, in proper relationship, to represent the aircraft for which training is to be accomplished
- Systems indications which respond appropriately to switches and controls which are required to be installed for the training or checking to be accomplished
- Air/ground logic (however, simulated aerodynamic capabilities are not required)

483. LEVEL 5 - FLIGHT TRAINING DEVICE.

A. *Purpose:* To permit learning, development, and the practice of skills, cockpit procedures, and instrument flight procedures necessary for understanding and operating the integrated systems of a specific aircraft in typical flight operations in real time.

B. *Functional Description:* A level 5 training device has the following characteristics and components:

- A replica of the flight deck panels, switches, controls, and instruments, in proper relationship, to represent the aircraft for which training is to be accomplished
- Systems indications which respond appropriately to switches and controls which are required to be installed for the training or checking to be accomplished
- Simulated aerodynamic capabilities representative of the aircraft group or class
- Functional flight and navigational controls, displays, and instrumentation
- Control forces and control travel of sufficient precision for manually flying an instrument approach.

485. LEVEL 6 - FLIGHT TRAINING DEVICE.

A. *Purpose:*

(1) To permit learning, development, and the practice of skills in cockpit procedures, instrument flight procedures, certain symmetrical maneuvers and flight characteristics necessary for operating the integrated systems of a specific aircraft in typical flight operations.

(2) To permit the use of previously approved nonvisual simulators and the continued use of Level 6 and 7 flight training devices (formerly known as advanced training devices (ATD)) for those FAR Part 135 operators approved to use them.

NOTE: Nonvisual simulators are categorized with level 6 training devices and may continue to be used as previously approved, or as prescribed in FAR Part 61, Appendix A and FAR Part 121, Appendices E and F.

B. *Functional Description:* A level 6 training device has the following characteristics and components:

- Systems indications which respond appropriately to switches and controls which are required to be installed
- A replica of the cockpit of the aircraft for which training is to be accomplished
- Simulated aerodynamic capabilities which closely represent the specific aircraft in ground and flight operations
- Functional flight and navigational controls, displays, and instrumentation
- Control forces and control travel which correspond to the aircraft
- Instructor controls

487. LEVEL 7 - FLIGHT TRAINING DEVICE.

A. *Purpose:* To permit learning, development, and the practice of skills in cockpit procedures, instrument flight procedures and maneuvers, and flight characteristics necessary for operating the integrated systems of a specific aircraft in typical flight operations.

B. *Functional Description:* A level 7 training device has the following characteristics and components:

- Systems representations, switches, and controls which are required by the type design of the aircraft and by the approved training program
- Systems which respond appropriately and accurately to the switches and controls of the aircraft being simulated
- Full-scale replica of the cockpit of the aircraft being simulated
- Correct simulation of the aerodynamic and ground dynamic characteristics of the aircraft being simulated
- Correct simulation of the effects of selected environmental conditions which the simulated aircraft might encounter
- Control forces, dynamics, and travel which correspond to the aircraft
- Instructor controls and seat

489. LEVEL A FLIGHT SIMULATOR.

A. *Purpose:* To permit development and practice of the necessary skills for accomplishing flight operational tasks, to a prescribed standard of airman competency, in a specific aircraft and duty position. Level A flight simulators may be used for specified pilot recency of experience requirements and specified flight operational task training requirements in transition, upgrade, recurrent, and requalification training under FAR Parts 121 and 135. It may also be used

for initial new-hire and initial equipment training on specified events.

NOTE: Level A flight simulators comply with the technical standards specified for basic (visual) simulators in AC 120-40, as amended.

B. *Functional Description:* Level A flight simulators have the following characteristics and components:

- Systems representations, switches, and controls which are required by the type design of the aircraft and by the user's approved training program
- Systems which respond appropriately and accurately to the switches and controls of the aircraft being simulated
- Full-scale replica of the cockpit of the aircraft being simulated
- Correct simulation of the aerodynamic characteristics of the aircraft being simulated
- Correct simulation of the effects of selected environmental conditions which the simulated aircraft might encounter
- Control forces and travel which correspond to the aircraft
- Instructor controls and seat
- At least a night visual system with the minimum of a 45° horizontal by 30° vertical field of view for each pilot station
- A motion system with at least 3 degrees of freedom

491. LEVEL B FLIGHT SIMULATOR.

A. *Purpose:* To permit development and practice of the necessary skills for accomplishing flight operational tasks, to a prescribed standard of airman competency, in a specific aircraft and duty position. Level B flight simulators may be used for pilot recency of experience requirements and for specified flight operational task training requirements in transition, upgrade, recurrent, and requalification training under FAR Parts 121 and 135. It may also be used for initial new-hire and initial equipment training on specified events. Level B simulators may also be used to accomplish night takeoffs and landings and for landings in a proficiency check.

NOTE: Level B flight simulators comply with the technical standards specified for Phase I simulators in FAR Part 121, Appendix H and AC 120-40, as amended.

B. *Functional Description:* Level B flight simulators have the following characteristics and components:

- Systems representations, switches, and controls which are required by the type design of the aircraft and by the user's approved training program
- Systems which respond appropriately and accurately to the switches and controls of the aircraft being simulated
- Full-scale replica of the cockpit of the aircraft being simulated
- Correct simulation of the aerodynamic (including ground effect) and ground dynamic characteristics of the aircraft being simulated
- Correct simulation of the effects of selected environmental conditions which the simulated aircraft might encounter
- Control forces and travel which correspond to the aircraft
- Instructor controls and seat
- At least a night visual system with a minimum of a 45° horizontal by 30° vertical field of view for each pilot station
- A motion system with at least 3 degrees of freedom

493. LEVEL C FLIGHT SIMULATOR.

A. *Purpose:* To permit development and practice of the necessary skills for accomplishing flight operational tasks, to a prescribed standard of airman competency, in a specific aircraft and duty position. Level C flight simulators may be used for pilot recency of experience requirements and for specified flight operational task training in transition, upgrade, recurrent, and requalification training under FAR Parts 121 and 135. It may also be used for initial new-hire and initial equipment training on certain specified events. All training events may be conducted in a Level C flight simulator for persons who have previously qualified as PIC or SIC with that operator.

NOTE: Level C flight simulators comply with the technical standards specified for "Phase II simulators" in FAR Part 121, Appendix H and AC 120-40 (as amended).

B. *Functional Description:* Level C flight simula tors have at least the following characteristics and components:

- Systems representations, switches, and controls which are required by the type design of the aircraft and by the user's approved training program
- Systems which respond appropriately and accurately to the switches and controls of the aircraft being simulated
- Full-scale replica of the cockpit of the aircraft being simulated
- Correct simulation of the aerodynamic including ground effect, and ground dynamic characteristics of the aircraft being simulated
- Correct simulation of the effects of selected environmental conditions which the simulated aircraft might encounter
- Control forces, dynamics, and travel which correspond to the aircraft
- Instructor controls and seat
- At least a night and dusk visual system with a minimum of a 75° horizontal by 30° vertical field of view for each pilot station
- A motion system with at least 6 degrees of freedom

495. LEVEL D FLIGHT SIMULATOR.

A. *Purpose:* To permit development and practice of the necessary skills for accomplishing flight operational tasks, to a prescribed standard of airman competency, in a specific aircraft and duty position. Level D flight simulators may be used for FAR Parts 121 and 135 pilot currency and for all flight operational task training except for static aircraft training.

NOTE: Level D flight simulators comply with the technical standards specified for "Phase III simulators" in FAR Part 121, Appendix H and AC 120-40 (as amended).

B. *Functional Description:* Level D flight simulators have the following characteristics and components:

- Systems representations, switches, and controls which are required by the type design of the aircraft and by the user's approved training program
- Systems which respond appropriately and accurately to the switches and controls of the aircraft being simulated
- Full-scale replica of the cockpit of the aircraft being simulated
- Correct simulation of the aerodynamic (including ground effect) and ground dynamic characteristics of the aircraft being simulated
- Correct simulation of selected environmentally-affected aerodynamic and ground dynamic characteristics of the aircraft being simulated considering the full range of its flight envelope in all approved configurations
- Correct and realistic simulation of the effects of environmental conditions which the aircraft might encounter
- Control forces, dynamics, and travel which correspond to the aircraft
- Instructor controls and seat
- A daylight, dusk, and night visual system with the minimum of a 75° horizontal by 30° vertical field of view for each pilot station
- A motion system with at least 6 degrees of freedom

497. MANEUVERS AND PROCEDURES TABLES.

A. The events which must be accomplished during flight training are listed in the maneuvers and procedures tables in this section. The requirements of FAR Parts 121 and 135 are included in these tables. These tables can be used as a single source document in the development and evaluation of flight training curriculum segment proposals. Compliance with the provisions of these tables automatically ensures that all requirements of both FAR Parts 121 and 135 are met. These tables also contain the acceptable flight training equipment (training devices, simulators, or aircraft) which may be used for any training event. An "X" indicates that the specified flight training device or flight simulator has been qualified for that event without further consideration or approval. An "A" indicates that a lower level device or simulator may be used for procedural training if that device has the necessary systems representations and functions for training on the event. These systems representations and functions exceed the basic requirements for that level device or simulator, therefore, an "A" indicates, that the device or simulator must be evaluated and approved for each particular event. Any maneuver or procedure permitted in a specific level of flight training device or flight simulator, may also be conducted in a higher level of flight training device, flight simulator, or the aircraft itself (providing the event can safely be accomplished in the aircraft). Cer-

tain training events within the tables are preceded with a box ([]). If the operator is authorized (or required) to conduct these maneuvers by operations specifications (for example, a circling approach), a POI should check the appropriate box to indicate these events must be included in the training curriculum. Certain optional training events indicated by a pound sign (#) in the maneuvers and procedures tables are not specifically required by the regulations or operations specifications. Many of these optional training events, however, are often included in an operator's flight training curriculums and should be conducted in a properly qualified device or simulator.

B. Windshear training is a training event in each table. The tables indicate that windshear training may only be performed in a level 7 flight training device or any level of flight simulator. Operators who do not use a level 7 flight training device or flight simulator may perform their windshear/microburst training in accordance with the guidelines in the FAA document entitled, "Windshear Training Aid".

C. Preceding each maneuver and procedure table is a paragraph which states the required maneuvers and procedures for each crewmember and provides guidance on specific areas of emphasis which should be included in the training.

499. PIC/SIC INITIAL NEW-HIRE AND INITIAL EQUIPMENT FLIGHT TRAINING: TRANSPORT AND COMMUTER CATEGORY AIRPLANES.

A. *Required Maneuvers and Procedures.* Training in the maneuvers and procedures in table 3.2.6.4. must be conducted for satisfactory completion of initial new-hire and initial equipment flight training.

(1) PIC's must complete training in each training event in this table.

(2) SIC's must complete training in each training event in this table. SIC training in the following events does not require manipulation of the primary aircraft controls but should emphasize duties of the pilot-not-flying:

- Steep turns
- Approach and landing with pitch mistrim
- Approach and landing with 50% loss of power
- Approach and landing with flap/slat malfunction

L. *Training Emphasis Considerations.* A POI should ensure that the operator's flight training emphasizes appropriate areas for these categories of training:

(1) *For Initial New-Hire Training,* emphasis should be on specific company procedures and procedures for the particular aircraft.

(2) *For Initial Equipment Training,* emphasis should be on company procedures specific to the aircraft.

TABLE 3.2.6.4. FLIGHT TRAINING
PIC/SIC INITIAL NEW-HIRE AND INITIAL EQUIPMENT FLIGHT TRAINING: TRANSPORT AND COMMUTER CATEGORY AIRPLANES
(FRONT)

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
						VIS	PH I	PH II	PH III	
PREPARATION	Visual Inspection (For aircraft with F/E, use of pictorial display authorized)									X
	Prestart Procedures	A	A	X	X	X	X	X	X	X
	Performance Limitations	X	X	X	X	X	X	X	X	X
SURFACE OPERATION	Pushback			X	X	X	X	X	X	X
	[ ] Powerback Taxi							X	X	X
	Starting	A	A	X	X	X	X	X	X	X
	Taxi							X	X	X
	Pretakeoff Checks	A	A	X	X	X	X	X	X	X
TAKEOFF	Normal **M**								X	X
	Crosswind								X	X
	Rejected **M**			X	X	X	X	X	X	X
	Power Failure V_1 **M**					X	X	X	X	X
	Powerplant Failure During Second Segment #					X	X	X	X	X
	[ ] Lower than Standard Minimum					X	X	X	X	X
CLIMB	Normal			X	X	X	X	X	X	X
	One-Engine Inoperative During Climb to En Route Altitude #					X	X	X	X	X
EN ROUTE	Steep Turns **PIC**			X	X	X	X	X	X	X
	Approaches to Stalls: **M** (Takeoff Config.) (En Route Config.) (Landing Config.) X* Only if stall warning/stall avoidance provides first stall indication			X*	X*	X	X	X	X	X
	In-flight Powerplant Shutdown	A	A	X	X	X	X	X	X	X
	In-flight Powerplant Restart		A	X	X	X	X	X	X	X
	High Speed Handling Characteristics					X	X	X	X	X
DESCENT	Normal			X	X	X	X	X	X	X
	Maximum Rate					X	X	X	X	X
APPROACHES	**VFR Procedures M** Visual Approach								X	X
	With 50% Loss of Power on One Side **PIC M** (2 engines inoperative on 3-engine airplanes) A* (May be accomplished in levels A, B, or C provided one engine inoperative training is conducted in level D or the aircraft)					A*	A*	A*	X	X
	With Slat/Flap Malfunction **PIC M**					X	X	X	X	X
	IFR Precision Approaches M ILS/Normal								X	X
	ILS/One-Engine Inoperative								X	X
	[ ] MLS/Normal								X	X
	[ ] MLS/One-Engine Inoperative								X	X
	[ ] PAR/Normal					X	X	X	X	X
	[ ] PAR/One-Engine Inoperative #					X	X	X	X	X
	IFR Nonprecision Approaches M NDB/Normal			A*	A*	X	X	X	X	X
	VOR/Normal A* At least one nonprecision approach must be accomplished in a level A or higher simulator or the aircraft			A*	A*	X	X	X	X	X
	Nonprecision Approach One Engine Inoperative #					X	X	X	X	X
	[ ] LOC Backcourse Procedures		A	X	X	X	X	X	X	X
	[ ] SDF/LDA Procedures		A	X	X	X	X	X	X	X
	[ ] ASR Procedures		A	X	X	X	X	X	X	X
	[ ] RNAV Procedures		A	X	X	X	X	X	X	X
	[ ] LORAN C Procedures		A	X	X	X	X	X	X	X

TABLE 3.2.6.4.—Continued
FLIGHT TRAINING
PIC/SIC INITIAL NEW-HIRE AND INITIAL EQUIPMENT FLIGHT TRAINING: TRANSPORT AND COMMUTER CATEGORY AIRPLANES
(BACK)

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
						VIS	PH I	PH II	PH III	
APPROACHES (Cont'd)	[ ] **Circling Approach M** (Simulator must be qualified for training/checking on the circling maneuver)								X	X
	MISSED APPROACHES M From Precision Approach					X	X	X	X	X
	From Nonprecision Approach					X	X	X	X	X
	With Powerplant Failure					X	X	X	X	X
	NOTE: At least one MAP must be a complete approved procedure. At least one MAP must be with a powerplant failure.									
LANDINGS	Normal								X	X
	With Pitch Mistrim **PIC**								X	X
	From Precision Instrument Approach								X	X
	From Precision Instrument Approach With Most Critical Engine Inoperative								X	X
	With 50% Loss of Power on One Side **PIC** (2 engines inoperative on 3-engine airplanes) A* (May be accomplished in levels A, B, or C provided one engine inoperative training is conducted in level D or the aircraft.)					A*	A*	A*	X	X
	With Flap/Slat Malfunction					X	X	X	X	X
	Crosswind								X	X
	With Manual Reversion/Degraded Control Augmentation					X	X	X	X	X
AFTER	Parking #							X	X	X
LANDING	Emergency Evacuation #			X	X	X	X	X	X	X
OTHER FLIGHT	Holding			X	X	X	X	X	X	X
PROCEDURES	Ice Accumulation On Airframe #				X	X	X	X	X	X
DURING ANY	Air Hazard Avoidance #					A	A	X	X	X
AIRBORNE PHASE	Windshear/Microburst #					X	X	X	X	X
SYSTEMS	Pneumatic/Pressurization	A	A	X	X	X	X	X	X	X
PROCEDURES	Air Conditioning	A	A	X	X	X	X	X	X	X
TRAINING	Fuel and Oil	A	A	X	X	X	X	X	X	X
DURING ANY	Electrical	A	A	X	X	X	X	X	X	X
PHASE	Hydraulic	A	A	X	X	X	X	X	X	X
	Flight Controls	A	A	X	X	X	X	X	X	X
	Anti-Icing and Deicing Systems			X	X	X	X	X	X	X
	Autopilot		A	X	X	X	X	X	X	X
-Normal	Flight Management Guidance Systems and/or Automatic or Other Approach & Landing Aids		A	X	X	X	X	X	X	X
-Abnormal	Stall Warning Devices, Stall Avoidance Devices, and Stability Augmentation Systems			X	X	X	X	X	X	X
-Alternate	Airborne Weather Radar	A	A	X	X	X	X	X	X	X
	Flight Instrument System Malfunction		A	X	X	X	X	X	X	X
	Communications Equipment	A	A	X	X	X	X	X	X	X
	Navigation Systems	A	A	X	X	X	X	X	X	X
SYSTEMS	Aircraft Fires	A	A	X	X	X	X	X	X	X
PROCEDURES	Smoke Control	A	A	X	X	X	X	X	X	X
TRAINING	Powerplant Malfunctions	A	A	X	X	X	X	X	X	X
DURING ANY	Fuel Jettison	A	A	X	X	X	X	X	X	X
PHASE	Electrical, Hydraulic, Pneumatic Systems	A	A	X	X	X	X	X	X	X
	Flight Control Systems Malfunction	A	A	X	X	X	X	X	X	X
-Emergency	Landing Gear and Flap Systems Malfunction	A	A	X	X	X	X	X	X	X

501. PIC/SIC TRANSITION AND UPGRADE FLIGHT TRAINING: TRANSPORT AND COMMUTER CATEGORY AIRPLANES.

A. *Required Maneuvers and Procedures.* Training in the maneuvers and procedures in table 3.2.6.5. must be conducted for satisfactory completion of transition or upgrade flight training.

(1) *For PIC Transition Training:* PIC's must complete training in each training event in this table.

(2) *For SIC Transition Training:* SIC's must complete training in each training event in this table. SIC training in the following events does not require manipulation of the primary flight controls but should emphasize the duties of the pilot-not-flying:

- Approach and landing with pitch mistrim
- Approach and landing with 50% loss of power
- Approach and landing with flap/slat malfunction
- Steep turns

(3) *For PIC Upgrade Training:* An SIC upgrading to PIC must complete training in each training event in this table (including those marked "PIC").

(4) *For Appendix H SIC-to-PIC Initial Equipment Training:* FAR Part 121, Appendix H "Phase II, Training and Checking Permitted" permits certain SIC's to be trained as PIC's in a different aircraft of the same group, if the training is conducted in a level C simulator. Because of the experience levels required in Appendix H for SIC's in this type of training (which is actually initial equipment training) the training may be accomplished in the same manner as PIC upgrade training.

(5) *For SIC Upgrade Training:* FE's upgrading to SIC must complete training in each training event in table 3.2.6.5. FE's upgrading to SIC are not required to manipulate the primary flight controls for the following events, but should receive training which emphasizes duties of the pilot-not-flying. The training events are as follows:

- Steep turns
- Approach and landing with pitch mistrim
- Approach and landing with 50% loss of power
- Approach and landing with flap/slat malfunction

B. *Training Emphasis Considerations.* POI's should ensure that the operator's transition and upgrade training emphasizes the appropriate areas for these categories of training:

(1) *For Transition Training,* emphasis should be on the handling characteristics and the maneuvers and procedures pertinent to the specific aircraft type.

(2) *For Upgrade Training,* emphasis should be on the specific duties and responsibilities pertinent to the crewmember position. Additionally, in the case of an FE upgrading to SIC, maneuver-emphasis training (particularly in approaches and landings) should be included.

TABLE 3.2.6.5.
FLIGHT TRAINING
PIC/SIC TRANSITION AND UPGRADE FLIGHT TRAINING: TRANSPORT AND COMMUTER CATEGORY AIRPLANES
(FRONT)

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
						VIS	PH I	PH II	PH III	
PREPARATION	Visual Inspection (For aircraft with F/E, use of pictorial display authorized)									X
	Prestart Procedures	A	A	X	X	X	X	X	X	X
	Performance Limitations	X	X	X	X	X	X	X	X	X
SURFACE OPERATION	Pushback			X	X	X	X	X	X	X
	[ ] Powerback Taxi							X	X	X
	Starting	A	A	X	X	X	X	X	X	X
	Taxi							X	X	X
	Pretakeoff Checks	A	A	X	X	X	X	X	X	X
TAKEOFF	Normal **M**							X	X	X
	Crosswind							X	X	X
	Rejected **M**			X	X	X	X	X	X	X
	Power Failure V_1 **M**					X	X	X	X	X
	Powerplant Failure During Second Segment #					X	X	X	X	X
	[ ] Lower than Standard Minimum					X	X	X	X	X
CLIMB	Normal			X	X	X	X	X	X	X
	One-Engine Inoperative During Climb to En Route Altitude #					X	X	X	X	X
EN ROUTE	Steep Turns **PIC**			X	X	X	X	X	X	X
	Approaches to Stalls: **M** (Takeoff Config.) (En Route Config.) (Landing Config.) X* Only if stall warning/stall avoidance provides first stall indication			X*	X*	X	X	X	X	X
	In-flight Powerplant Shutdown	A	A	X	X	X	X	X	X	X
	In-flight Powerplant Restart		A	X	X	X	X	X	X	X
	High Speed Handling Characteristics					X	X	X	X	X
DESCENT	Normal			X	X	X	X	X	X	X
	Maximum Rate					X	X	X	X	X
APPROACHES	**VFR Procedures** Visual Approach							X	X	X
	With 50% Loss of Power on One Side **PIC M** (2 engines inoperative on 3-engine airplanes)					X	X	X	X	X
	With Slat/Flap Malfunction **PIC M**					X	X	X	X	X
	IFR Precision Approaches M ILS/Normal							X	X	X
	ILS/One-Engine Inoperative					X	X	X	X	X
	[ ] MLS/Normal							X	X	X
	[ ] MLS/One-Engine Inoperative					X	X	X	X	X
	[ ] PAR/Normal			X	X	X	X	X	X	X
	[ ] PAR/One-Engine Inoperative #					X	X	X	X	X
	IFR Nonprecision Approaches M NDB/Normal			A*	A*	X	X	X	X	X
	VOR/Normal A* At least one nonprecision approach must be accomplished in a level A or higher simulator or the aircraft			A*	A*	X	X	X	X	X
	Nonprecision Approach One Engine Inoperative #					X	X	X	X	X
	[ ] LOC Backcourse Procedures		A	X	X	X	X	X	X	X
	[ ] SDF/LDA Procedures		A	X	X	X	X	X	X	X
	[ ] TACAN Procedures		A	X	X	X	X	X	X	X
	[ ] ASR Procedures		A	X	X	X	X	X	X	X
	[ ] RNAV Procedures		A	X	X	X	X	X	X	X
	[ ] LORAN C Procedures		A	X	X	X	X	X	X	X
	[ ] **Circling Approach M** (Simulator must be qualified for training/checking on the circling maneuver)							X	X	X

TABLE 3.2.6.5.—Continued
FLIGHT TRAINING
PIC/SIC TRANSITION AND UPGRADE FLIGHT TRAINING: TRANSPORT AND COMMUTER CATEGORY AIRPLANES (BACK)

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
						VIS	PH I	PH II	PH III	
APPROACHES (Cont'd)	MISSED APPROACHES M From Precision Approach					X	X	X	X	X
	From Nonprecision Approach					X	X	X	X	X
	With Powerplant Failure					X	X	X	X	X
	NOTE: At least one MAP must be a complete approved procedure. At least one MAP must be with a powerplant failure.									
LANDINGS	Normal							X	X	X
	With Pitch Mistrim PIC					X	X	X	X	X
	From Precision Instrument Approach							X	X	X
	From Precision Instrument Approach With Most Critical Engine Inoperative							X	X	X
	With 50% Loss of Power on One Side PIC (2 engines inoperative on 3-engine airplanes					X	X	X	X	X
	With Flap/Slat Malfunction					X	X	X	X	X
	Crosswind							X	X	X
	With Manual Reversion/Degraded Control Augmentation					X	X	X	X	X
AFTER LANDING	Parking #							X	X	X
	Emergency Evacuation #			X	X	X	X	X	X	X
OTHER FLIGHT	Holding			X	X	X	X	X	X	X
PROCEDURES	Ice Accumulation On Airframe #			X	X	X	X	X	X	X
DURING ANY	Air Hazard Avoidance #				A	A	X	X	X	X
AIRBORNE PHASE	Windshear/Microburst #					X	X	X	X	X
SYSTEMS	Pneumatic/Pressurization	A	A	X	X	X	X	X	X	X
PROCEDURES	Air Conditioning	A	A	X	X	X	X	X	X	X
TRAINING	Fuel and Oil	A	A	X	X	X	X	X	X	X
DURING ANY	Electrical	A	A	X	X	X	X	X	X	X
PHASE	Hydraulic	A	A	X	X	X	X	X	X	X
	Flight Controls	A	A	X	X	X	X	X	X	X
	Anti-Icing and Deicing Systems			X	X	X	X	X	X	X
	Autopilot		A	X	X	X	X	X	X	X
-Normal	Flight Management Guidance Systems and/or Automatic or Other Approach & Landing Aids		A	X	X	X	X	X	X	X
-Abnormal	Stall Warning Devices, Stall Avoidance Devices, and Stability Augmentation Systems			X	X	X	X	X	X	X
-Alternate	Airborne Weather Radar	A	A	X	X	X	X	X	X	X
	Flight Instrument System Malfunction		A	X	X	X	X	X	X	X
	Communications Equipment	A	A	X	X	X	X	X	X	X
	Navigation Systems	A	A	X	X	X	X	X	X	X
SYSTEMS	Aircraft Fires	A	A	X	X	X	X	X	X	X
PROCEDURES	Smoke Control	A	A	X	X	X	X	X	X	X
TRAINING	Powerplant Malfunctions	A	A	X	X	X	X	X	X	X
DURING ANY	Fuel Jettison	A	A	X	X	X	X	X	X	X
PHASE	Electrical, Hydraulic, Pneumatic Systems	A	A	X	X	X	X	X	X	X
	Flight Control Systems Malfunction	A	A	X	X	X	X	X	X	X
-Emergency	Landing Gear and Flap Systems Malfunction	A	A	X	X	X	X	X	X	X

503. PIC/SIC RECURRENT FLIGHT TRAINING: TRANSPORT AND COMMUTER CATEGORY AIRPLANES.

A. *Required Maneuvers and Procedures.* Training in the maneuvers and procedures in table 3.2.6.6., in accordance with the following paragraphs, must be conducted for the satisfactory completion of recurrent flight training.

(1) *FAR Part 135 Recurrent Flight Training (RFT).* FAR Part 135 RFT must be conducted periodically for both PIC's and SIC's, at least once every 12 months. FAR § 135.351(c) specifies that RFT for pilots must include at least, "flight training in the maneuvers or procedures in this subpart, except that satisfactory completion of the check required by FAR § 135.293 (the competency check) . . . may be substituted for recurrent flight training." The competency check may include any of the maneuvers and procedures currently required for the original issuance of the particular pilot certificate, for the operations authorized, and appropriate to the category, class, and type of aircraft involved. The instrument proficiency check, as specified in FAR § 135.293(c), may be substituted for the competency check. Additionally, there are no provisions in FAR Part 135 that allow recurrent training to substitute for required checks or tests. There are no training appendices in FAR Part 135 containing lists of the required maneuvers and procedures for flight training or checking. Training on the events in the applicable tables in this section meets the FAR Part 135 competency and instrument proficiency check requirements and, therefore, the RFT requirements.

NOTE: When training or evaluating the ability of a pilot to control an aircraft on instruments and to navigate without reference to outside cues, the inspector, check airman, or instructor must restrict the pilot's vision to the aircraft's instrument panel. This can only be ensured with the use of an appropriate view-limiting device. When a flight simulator is not available for training or checking, the dilemma is how to safely perform these maneuvers under the "see and be seen" requirements of visual meteorological conditions (VMC) flight and still be able to accurately assess the pilot's ability to control and navigate an aircraft without reference to outside cues. On one hand, the use of a view-limiting device must not restrict the ability of the check airman or other observers to safely clear the area and conduct outside vigilance during all maneuvers. On the other hand, the check airman must be certain that the pilot is not using any outside references. In final analysis, the check or training should not be conducted if the requirements of safety and test integrity cannot be met (see also volume 5, paragraph 133).

(2) *FAR Part 121 RFT.* FAR Part 121 RFT is training that must be conducted for PIC's once each 6 months and for SIC's once each 12 months, and must include training on the maneuvers and procedures listed in Appendix F of FAR Part 121. Levels B, C, and D flight simulators qualify for "training and checking to proficiency" on all the maneuvers and procedures required for RFT by FAR Part 121. RFT can always be conducted in an airplane. A proficiency check (FAR § 121.441) may be substituted for RFT.

(3) *FAR Part 121 Level-A RFT.* Level-A RFT is training that is conducted in a visual simulator. Level-A RFT is referenced in several different ways in FAR Part 121. The following are examples: "A course of training in an airplane simulator" (FAR § 121.409(b)); "flight training program approved by the administrator" (FAR § 121.427(d)(1)); and "the approved simulator course of training" (FAR §§ 121.433(c)(2) and 121.441(a)). For the purpose of standardization and mutual understanding, the term "level-A recurrent flight training" or "level-A RFT" should be used in reference to this type of training when it is conducted entirely in a visual simulator. Level A flight simulators are not qualified to be used for "training to proficiency" on certain maneuvers listed in Appendix F (such as takeoffs and landings). However, level A flight simulators can be used for training and practice on the procedures used to accomplish these maneuvers. These maneuvers are annotated by a "C" in the Recurrent Flight Training Maneuvers and Procedures Table (table 3.2.6.6.). Level-A RFT may be substituted for alternate periods of RFT (required by FAR § 121.433(c)(2)) or for alternate proficiency checks (required by FAR § 121.441(e)), provided the person being trained is evaluated by a check airman during the subsequent proficiency check (for PIC's once each 12 months; for SIC's once each 24 months). The proficiency check may be conducted in a level A (visual) simulator, provided the person being checked is evaluated during the conduct of two landings on the line (or other check) by a check airman (or, for SIC's, by a line PIC). The entire proficiency check (without the landings on the line requirement) may be conducted in a level B, C, or D simulator.

(4) *FAR Part 121 Requalification Flight Training.* Requalification flight training is conducted specifically to restore a previously line qualified crew member to line qualified status. To be eligible for this training, a crewmember must have previously been qualified in the specific aircraft type and duty position and have subsequently lost his/her qualification.

B. *Training Emphasis Considerations.* Operators should develop RFT and Level-A RFT curriculum segments that serve to maximize training on certain maneuvers and procedures. An airman's competency to function in an assigned duty position is evaluated during an annual proficiency check (or a competency check). During that check, at least the events required by FAR Part 121, Appendix F (for FAR Part 121 operators), and any of the events required for the original issuance of the particular pilot certificate involved (for FAR Part 135 operators) must be accomplished. The RFT curriculum outline should address all the required training events listed in table 3.2.6.6. However, during RFT or level-A RFT, specific training on every event is unnecessary unless it is needed for maintaining pilot proficiency on particular events. It is national direction and guidance that during periods of RFT or level-A RFT, that training emphasis should be on those events or other maneuvers or procedures not normally encountered during routine line operations, such as abnormal or emergency procedure training or windshear training. Additionally, training on new or revised maneuvers or procedures, new equipment, or other similar areas is ideally suited for periods of RFT or level-A RFT. Time should be allotted to conduct training in maneuvers or procedures the airman wishes to practice, or in certain operational areas in which deficiencies have surfaced during proficiency or line checks, indicating a need for additional training.

NOTE: Even though all of the maneuvers and procedures may not be accomplished during RFT or level-A RFT, the RFT curriculum segment outline should address all of the required training events listed in table 3.2.6.6.

TABLE 3.2.6.6. FLIGHT TRAINING
PIC/SIC RECURRENT AND REQUALIFICATION FLIGHT TRAINING: TRANSPORT AND COMMUTER CATEGORY AIRPLANES (FRONT)

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
						VIS	PH I	PH II	PH III	
PREPARATION	Visual Inspection (Use of pictorial display authorized)									X
	Pretaxi Procedures		X	X	X	X	X	X	X	X
	Performance Limitations	A	A	X	X	X	X	X	X	X
SURFACE OPERATION	Pushback	A	A	X	X	X	X	X	X	X
	[ ] Powerback Taxi					X	X	X	X	X
	Starting			X	X	X	X	X	X	X
	Taxi					C	C	X	X	X
	Pretakeoff Checks	A	A	X	X	X	X	X	X	X
TAKEOFF	Normal **M**					C	C	X	X	X
	Crosswind					C	C	X	X	X
	Rejected **M**			X	X	X	X	X	X	X
	Power Failure V_1 **M**					X	X	X	X	X
	Powerplant Failure During Second Segment #					X	X	X	X	X
	[ ] Lower than Standard Minimum					X	X	X	X	X
CLIMB	Normal			X	X	X	X	X	X	X
	One-Engine Inoperative During Climb to En Route Altitude #					X	X	X	X	X
EN ROUTE	Steep Turns **PIC**			X	X	X	X	X	X	X
	Approaches to Stalls: **M** (Takeoff Config.) (En Route Config.) (Landing Config.) X* Only if stall warning/stall avoidance provides first stall indication			X*	X*	X	X	X	X	X
	In-flight Powerplant Shutdown	A	A	X	X	X	X	X	X	X
	In-flight Powerplant Restart		A	X	X	X	X	X	X	X
	High Speed Handling Characteristics					X	X	X	X	X
DESCENT	Normal			X	X	X	X	X	X	X
	Maximum Rate			X	X	X	X	X	X	X
APPROACHES	**VFR Procedures** Normal					C	X	X	X	X
	With 50% Loss of Power on One-Engine **PIC M** (2 engines inoperative on 3-engine airplanes)					X	X	X	X	X
	With Slat/Flap Malfunction **PIC M**					X	X	X	X	X
	IFR Precision Approaches M ILS/Normal					X	X	X	X	X
	ILS/One-Engine Inoperative					C	X	X	X	X
	[ ] MLS/Normal					X	X	X	X	X
	[ ] MLS/One-Engine Inoperative					C	X	X	X	X
	[ ] PAR/Normal			X	X	X	X	X	X	X
	[ ] PAR/One-Engine Inoperative #					X	X	X	X	X
	IFR Nonprecision Approaches M NDB/Normal			A*	A	X	X	X	X	X
	VOR/Normal A* At least one nonprecision approach must be accomplished in a level A or higher simulator or the aircraft			A*	A	X	X	X	X	X
	Nonprecision Approach One Engine Inoperative #					X	X	X	X	X
	[ ] LOC Backcourse Procedures		A	X	X	X	X	X	X	X
	[ ] SDF/LDA Procedures		A	X	X	X	X	X	X	X
	[ ] TACAN Procedures		A	X	X	X	X	X	X	X
	[ ] ASR Procedures		A	X	X	X	X	X	X	X
	[ ] RNAV Procedures		A	X	X	X	X	X	X	X
	[ ] GPS Procedures		A	X	X	X	X	X	X	X
	[ ] **Circling Approach M** (Simulator must be qualified for training/checking on the circling maneuver)					X	X	X	X	X

TABLE 3.2.6.6.—Continued
FLIGHT TRAINING
PIC/SIC RECURRENT AND REQUALIFICATION FLIGHT TRAINING: TRANSPORT AND COMMUTER CATEGORY AIRPLANES (BACK)

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
						VIS	PH I	PH II	PH III	
APPROACHES (Cont'd)	MISSED APPROACHES M From Precision Approach					X	X	X	X	X
	From Nonprecision Approach					X	X	X	X	X
	With Powerplant Failure					X	X	X	X	X
LANDINGS	Normal					C	X	X	X	X
	Rejected Landing					C	X	X	X	X
	From Precision Instrument Approach					X	X	X	X	X
	From Precision Instrument Approach With Most Critical Engine Inoperative					X	X	X	X	X
	With 50% Loss of Power on One Side PIC (2 engines inoperative on 3-engine airplanes)					X	X	X	X	X
	Crosswind					A	X	X	X	X
AFTER LANDING	Parking #					X	X	X	X	X
	Emergency Evacuation #			X	X	X	X	X	X	X
OTHER FLIGHT	Holding			X	X	X	X	X	X	X
PROCEDURES	Ice Accumulation On Airframe #				X	X	X	X	X	X
DURING ANY	Air Hazard Avoidance #					A	X	X	X	X
AIRBORNE PHASE	Windshear/Microburst #					X	X	X	X	X
SYSTEMS	Pneumatic/Pressurization	A	A	X	X	X	X	X	X	X
PROCEDURES	Air Conditioning	A	A	X	X	X	X	X	X	X
TRAINING	Fuel and Oil	A	A	X	X	X	X	X	X	X
DURING ANY	Electrical	A	A	X	X	X	X	X	X	X
PHASE	Hydraulic	A	A	X	X	X	X	X	X	X
	Flight Controls	A	A	X	X	X	X	X	X	X
	Anti-Icing and Deicing Systems			X	X	X	X	X	X	X
	Autopilot			X	X	X	X	X	X	X
-Normal	Flight Management Guidance Systems and/or Automatic or Other Approach & Landing Aids		A	X	X	X	X	X	X	X
-Abnormal	Stall Warning Devices, Stall Avoidance Devices, and Stability Augmentation Systems			X	X	X	X	X	X	X
-Alternate	Airborne Weather Radar	A	A	X	X	X	X	X	X	X
	Flight Instrument System Malfunction	A	A	X	X	X	X	X	X	X
	Communications Equipment	A	A	X	X	X	X	X	X	X
	Navigation Systems	A	A	X	X	X	X	X	X	X
SYSTEMS	Aircraft Fires	A	A	X	X	X	X	X	X	X
PROCEDURES	Smoke Control	A	A	X	X	X	X	X	X	X
TRAINING	Powerplant Malfunctions	A	A	X	X	X	X	X	X	X
DURING ANY	Fuel Jettison	A	A	X	X	X	X	X	X	X
PHASE	Electrical, Hydraulic, Pneumatic Systems	A	A	X	X	X	X	X	X	X
	Flight Control Systems Malfunction	A	A	X	X	X	X	X	X	X
-Emergency	Landing Gear and Flap Systems Malfunction	A	A	X	X	X	X	X	X	X

505. FE INITIAL EQUIPMENT, INITIAL NEW-HIRE, TRANSITION AND RECURRENT FLIGHT TRAINING: TRANSPORT CATEGORY AIRPLANES.

A. *Training Required for Initial Issuance of an FE Certificate.* All applicants for a flight engineer certificate with the **initial** class rating must satisfy one of the seven aeronautical experience and or training requirements specified in FAR § 63.37.

(1) FAR §§ 63.37 (b)(1),(2),(3), and (4) require, in addition to other specific requirements, that an applicant receive 5 hours of flight training in the duties of a flight engineer. This training must be accomplished in an airplane, in flight. There are no provisions for the substitution of simulators or flight training devices for any part of these 5 hours of flight training. These 5 hours of flight training may not be acquired during revenue operations conducted under FAR Part 121.

(2) FAR § 63.37 (b)(5),(6), and (7) are alternative methods for satisfying the aeronautical experience and/or training requirements of FAR Part 63. An applicant who meets the aeronautical experience requirements in subparagraphs (b)(5) or (b)(6) is eligible for an initial flight engineer certification check without any flight training (including the 5-hour airplane training requirement). FAR § 63.37 (b)(7) allows the successful completion of an approved flight engineer ground and flight course of instruction as provided in FAR Part 63, Appendix C, to satisfy the aeronautical experience requirements. If a student for initial issuance of a flight engineer certificate uses the training received from a FAR Part 121 operator to meet the aeronautical experience requirements of FAR § 63.37, that operator's flight engineer training course must be approved under FAR § 63.43, and FAR §§ 121.419 and 121.425.

NOTE: When an operator's FE training curriculum meets the requirements of this handbook and is approved under FAR Part 121, it also meets the requirements of FAR Part 63. The operator may obtain approval of that curriculum under FAR § 63.43 by submitting a letter requesting approval in accordance with the provisions of that regulation. A POI must approve or deny the request by letter.

(3) Training under FAR Part 63, Appendix C includes at least 10 hours of flight instruction. Appendix C is the only section in FAR Part 63 that permits the use of flight training devices and flight simulators. In accordance with FAR Part 63, Appendix C (a)(3)(iv) an operator may reduce the flight training requirement to 5 hours of actual airplane time by substituting time in flight simulators and/or flight training devices for a total of at least 10 hours of flight training. It is important, however, to note that simulators may be substituted on a 2-to-1 basis, and training devices on a 3-to-1 basis, for actual airplane time. For example, for an operator to be permitted a reduction to 5 hours of airplane training, that operator must provide at least 10 hours of simulator time (2-to-1) or 15 hours of training device time (3-to-1), or any other combination thereof which, when added to the 5 hours of airplane training, meets the 10 hour Appendix C flight training requirement.

(4) FAR Part 63, Appendix C (a)(iv)(b) permits a flight engineer student holding at least a commercial pilot certificate with an instrument rating to substitute either flight simulator time or a combination of flight simulator and flight training device time for up to the full 10 hours of required airplane flight time. The 2-to-1 and 3-to-1 provisions still apply with an additional restriction that a maximum of 15 hours flight training device time may be substituted. For example, an operator may substitute 20 hours of flight simulator time (2:1 = 10 hours of airplane flight training) for the total 10-hour Appendix C airplane flight training requirement. Another example is an operator may substitute 10 hours of simulator time (2:1 = 5 hours of airplane flight training) plus a maximum of 15 hours of training device time (3:1 = 5 hours of airplane flight training for meeting the total 10-hour Appendix C airplane flight training requirement. The purpose of the 15-hour training device limitation is to ensure a certain amount of the flight training will include a full crew-complement. It is important to note that substitution of simulator and/or training devices for airplane training is only permitted under an approved FAR Part 63, Appendix C program (as discussed in this subparagraph and subparagraph A.(3). This provision should not be confused with FAR § 63.37 (b)(4) which permits a student holding a commercial pilot certificate with an instrument rating and who has received at least 5 hours of airplane flight training (no simulator/training device substitution permitted), to qualify for a flight engineer check. Therefore, if an applicant with a commercial pilot certificate and instrument rating attends a FAR Part 63, Appendix C school, the applicant can use FAR § 63.37 (b)(7) to satisfy the experience requirement, and can take advantage of the simulator and training device substitution provisions.

B. *FE Transition Flight Training.* A flight engineer employed by a FAR Part 121 operator who transitions from one airplane to another must complete a transition flight training curriculum segment approved under FAR Part 121. This training is not approved or conducted within the context of

FAR Part 63. The use of flight training devices, flight simulators, or aircraft, for accomplishing training events must be proposed by the operator and approved by the POI.

NOTE: Flight engineer applicants who qualify under the ATA exemption number 4901 may receive the normal procedures portion of the initial certification check in a "flight engineer simulator". A flight engineer simulator, as defined in that exemption is the equivalent of a level 6 training device or higher, or any level flight simulator. The definition does not require motion for visual systems. This exemption permits compliance with FAR § 63.39(b)(2), which requires the "normal" procedures portion of the certification check to be accomplished in the flight engineer simulator rather than in an actual aircraft. For further explanation, see volume 5, paragraph 245, Flight Engineer Certificate and Class Ratings.

C. *Required Maneuvers and Procedures.* Training in the maneuvers and procedures in table 3.2.6.7. must be conducted for satisfactory completion of initial new-hire, initial equipment, transition or recurrent training, for previously certificated flight engineers and for the initial certification of flight engineers. Training for these maneuvers and procedures must include training in normal, abnormal, alternate, and emergency procedures, as appropriate.

D. *Training Emphasis Considerations.* A POI should ensure that the operator's FE flight training emphasizes the appropriate areas for these categories of training:

(1) *For Initial New-Hire Training,* emphasis should be on areas involving crew concept, duties, responsibilities, systems integration concepts, and company procedures.

(2) *For Transition and Initial Equipment Training,* emphasis should be on the systems and procedures that pertain to the specific aircraft type.

(3) *For Recurrent Training,* emphasis should be on new or revised maneuvers or procedures that are pertinent to line operations.

TABLE 3.2.6.7. FLIGHT TRAINING
F/E INITIAL EQUIPMENT, INITIAL NEW-HIRE, TRANSITION AND RECURRENT FLIGHT TRAINING

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FLT SIM*				ACFT
		4	5	6	7	A	B	C	D	
						VIS	PH I	PH II	PH III	
PREPARATION	Airplane Preflight • Logbook Procedures • Safety Checks • Cabin/Interior (PICTORIAL DISPLAY) • Exterior Walkaround M • Servicing/Deicing • Use of Oxygen	X	X	X	X	X	X	X	X	X
GROUND OPERATION	Performance Data • T/O LND Data • Airport Analysis • WT & Balance	X	X	X	X	X	X	X	X	X
	Use of Checklist • Panel Setup	X	X	X	X	X	X	X	X	X
	Starting • External PWR • External Air • APU	X	X	X	X	X	X	X	X	X
	Communications • Station Procedures • ACARS	X	X	X	X	X	X	X	X	X
	Taxi	X	X	X	X	X	X	X	X	X
TAKEOFF	Powerplant Control		X	X	X	X	X	X	X	X
	Flaps/Landing Gear		X	X	X	X	X	X	X	X
	Fuel Management	X	X	X	X	X	X	X	X	X
	Other Systems Operation	X	X	X	X	X	X	X	X	X
	Aircraft Performance	X	X	X	X	X	X	X	X	X
	Checklist Completion	X	X	X	X	X	X	X	X	X
CLIMB	Powerplant Control		X	X	X	X	X	X	X	X
	Fuel Management	X	X	X	X	X	X	X	X	X
	Pressurization		X	X	X	X	X	X	X	X
	Electrical System	X	X	X	X	X	X	X	X	X
	Air Conditioning	X	X	X	X	X	X	X	X	X
	Flight Controls		X	X	X	X	X	X	X	X
	Other Systems	X	X	X	X	X	X	X	X	X
EN ROUTE	Powerplant Operation		X	X	X	X	X	X	X	X
	Fuel Management	X	X	X	X	X	X	X	X	X
	Performance Management		X	X	X	X	X	X	X	X
	High Altitude Performance		X	X	X	X	X	X	X	X
	Other Systems Operation	X	X	X	X	X	X	X	X	X
DESCENT	Powerplant Operation		X	X	X	X	X	X	X	X
	Other Systems Operation	X	X	X	X	X	X	X	X	X
	Performance Management	X	X	X	X	X	X	X	X	X
APPROACH	Landing Data	X	X	X	X	X	X	X	X	X
	Landing Gear Operation	X	X	X	X	X	X	X	X	X
	Flat/Slat/Spoiler Operation		X	X	X	X	X	X	X	X
	Approach Monitoring M		X	X	X	X	X	X	X	X
LANDINGS	Powerplant Operation		X	X	X	X	X	X	X	X
	Aircraft Configuration		X	X	X	X	X	X	X	X
	System Operation	X	X	X	X	X	X	X	X	X
	Emergency Evacuation			X	X	X	X	X	X	X
PROCEDURES DURING ANY GROUND OR AIRBORNE PHASE	Cockpit Equipment			X	X	X	X	X	X	X
	Flap/Slats/Gear		X	X	X	X	X	X	X	X
	Powerplant		X	X	X	X	X	X	X	X
	Pressurization		X	X	X	X	X	X	X	X
	Pneumatic	X	X	X	X	X	X	X	X	X

TABLE 3.2.6.7. FLIGHT TRAINING
F/E INITIAL EQUIPMENT, INITIAL NEW-HIRE, TRANSITION AND RECURRENT FLIGHT TRAINING

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FLT SIM*				ACFT
		4	5	6	7	A	B	C	D	
						VIS	PH I	PH II	PH III	
PROCEDURES (Cont'd)	Air Conditioning	X	X	X	X	X	X	X	X	X
	Fuel and Oil	X	X	X	X	X	X	X	X	X
-Normal	Electrical	X	X	X	X	X	X	X	X	X
-Abnormal	Hydraulic	X	X	X	X	X	X	X	X	X
-Alternate	Flight Controls		X	X	X	X	X	X	X	X
-Emergency	Anti-Icing & Deicing		X	X	X	X	X	X	X	X
	Other Checklist Procedures	X	X	X	X	X	X	X	X	X

Note: F/E Applicants for initial Certification must complete the flight simulator and/or training device training hours as described in subparagraphs A(3) and (4) of this paragraph 505.

507. PIC/SIC FLIGHT TRAINING (ALL TRAINING CATEGORIES): MULTIENGINE GENERAL PURPOSE AIRPLANES.

A. *Required Maneuvers and Procedures.* Training in the maneuvers and procedures table 3.2.6.8. must be conducted for satisfactory completion of each category of flight training. Those training events annotated with a "SEA" symbol are only required for those operators engaged in seaplane operations.

(1) PIC's must complete training in each training event in this table.

(2) SIC's must complete training in each training event in this table. SIC training in the following events does not require manipulation of the primary aircraft controls but should emphasize duties of the pilot-not-flying:

- Approach and landing with pitch mistrim
- Approach and landing with 50% loss of power on one side
- Approach and landing with flap/slat malfunction
- Steep turns

B. *Training Emphasis Considerations.* A POI should ensure that the operator's flight training emphasizes the appropriate areas for these categories of training:

(1) *For Initial New-Hire Training,* emphasis should be on specific company procedures.

(2) *For Transition Training,* emphasis should be on the handling characteristics and the maneuvers and procedures pertinent to the specific aircraft type.

(3) *For Upgrade Training,* emphasis should be on the specific duties and responsibilities pertinent to the crewmember position.

(4) *For Recurrent Training,* emphasis should be on new or revised maneuvers or procedures pertinent to line operations.

C. *FAR Part 135 Recurrent Flight Training (RFT).* Recurrent flight training must be conducted periodically for both PIC's and SIC's, at least once every 12 months. FAR § 135.351(c) specifies that recurrent flight training for pilots must include at least "...flight training in the maneuvers or procedures in this subpart except that satisfactory completion of the check required by FAR § 135.293 (the competency check)... may be substituted for recurrent flight training". The competency check may include any of the maneuvers and procedures currently required for the original issuance of the particular pilot certificate, for the operations authorized, and appropriate for the category, class, and type of aircraft involved. The instrument proficiency check as specified in FAR § 135.293(c), may be substituted for the competency check. Additionally, there are no provisions in FAR Part 135 which allow recurrent flight training to substitute for required checks or tests. There are no training appendices in FAR Part 135 containing lists of the required maneuvers and procedures for flight training or checking. Training on the events in the applicable tables in this section, however, does meet the FAR Part 135 competency and instrument proficiency check requirements and, therefore, the recurrent flight training requirements.

TABLE 3.2.6.8.
FLIGHT TRAINING
PIC/SIC TRAINING (ALL TRAINING CATEGORIES): MULTIENGINE GENERAL PURPOSE AIRPLANES

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
						VIS	PH I	PH II	PH III	
PREPARATION	Visual Inspection									X
	Pretaxi Procedures		X	X	X	X	X	X	X	X
	Performance Limitations	X	X	X	X	X	X	X	X	X
SURFACE OPERATION	Cockpit Management			X	X	X	X	X	X	X
	Securing Cargo									X
	Starting	X	X	X	X	X	X	X	X	X
	Taxi					X	X	X	X	X
	[ ] Powerback Taxi						X	X	X	X
	Steep Turns **SEA**									X
	Sailing **SEA**									X
	Pretakeoff Checks			X	X	X	X	X	X	X
TAKEOFF	Normal **M**						X	X	X	X
	Crosswind						X	X	X	X
	Short/Soft Field **M**								X	X
	Glassy/Rough Water **SEA**								X	X
	VMC Demonstration and Recovery				X	X	X	X	X	X
	Powerplant Failure Before VMC (Rejected)			X	X	X	X	X	X	X
	Powerplant Failure After VMC				X	X	X	X	X	X
	[ ] Lower than Standard Minimum				X	X	X	X	X	X
CLIMB	Normal			X	X	X	X	X	X	X
	One-Engine Inoperative #				X	X	X	X	X	X
EN ROUTE	Steep Turns			X	X	X	X	X	X	X
	Approaches to Stalls: **M** (Takeoff Config.) (En Route Config.) (Landing Config.) X* Only if stall warning/stall avoidance provides first stall indication			X*	X	X	X	X	X	X
	Powerplant Shutdown and Restart			X	X	X	X	X	X	X
	Slow Speed Handling Characteristics			X	X	X	X	X	X	X
	With a Powerplant Inoperative			X	X	X	X	X	X	X
DESCENT	Normal			X	X	X	X	X	X	X
	Maximum Rate			X	X	X	X	X	X	X
APPROACHES	**VFR Procedures M** Normal						X	X	X	X
	With 50% Loss of Power on One Side **PIC M**					X	X	X	X	X
	With Slat/Flap Malfunction **PIC M**					X	X	X	X	X
	IFR Precision Approaches M ILS/Normal						X	X	X	X
	ILS/One-Engine Inoperative						X	X	X	X
	[ ] MLS/Normal						X	X	X	X
	[ ] MLS/One-Engine Inoperative						X	X	X	X
	[ ] PAR/Normal						X	X	X	X
	[ ] PAR/One-Engine Inoperative #						X	X	X	X
	IFR Nonprecision Approaches M NDB/Normal			A*	A*	X	X	X	X	X
	VOR/Normal A* At least one VOR or NDB approach must be accomplished in a level A or higher simulator or the aircraft			A*	A*	X	X	X	X	X
	Nonprecision Approach One-Engine Inoperative #					X	X	X	X	X
	[ ] LOC Backcourse Procedures		A	X	X	X	X	X	X	X
	[ ] SDF/LDA Procedures		A	X	X	X	X	X	X	X
	[ ] TACAN Procedures		A	X	X	X	X	X	X	X
	[ ] ASR Procedures		A	X	X	X	X	X	X	X

TABLE 3.2.6.8.—Continued
FLIGHT TRAINING
PIC/SIC FLIGHT TRAINING (ALL CATEGORIES): MULTIENGINE GENERAL PURPOSE AIRPLANES

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
						VIS	PH I	PH II	PH III	
APPROACHES (Cont'd)	[ ] RNAV Procedures		A	X	X	X	X	X	X	X
	[ ] LORAN C Procedures		A	X	X	X	X	X	X	X
	[ ] **Circling Approach M** (Simulator must be qualified for training/checking on the circling maneuver)							X	X	X
	MISSED APPROACHES M From Precision Approach					X	X	X	X	X
	From Nonprecision Approach					X	X	X	X	X
	NOTE: At least one MAP must be a complete approved procedure.									
	With Powerplant Failure					X	X	X	X	X
LANDINGS	Normal							X	X	X
	With Pitch Mistrim **PIC**					X	X	X	X	X
	From Precision Instrument Approach							X	X	X
	From Precision Instrument Approach With Most Critical Engine Inoperative					X	X	X	X	X
	With 50% Loss of Power on One Side **PIC**					X	X	X	X	X
	With Flap/Slat Malfunction **PIC**					X	X	X	X	X
	Crosswind							X	X	X
	Short/Soft Field								X	X
	Glassy/Rough Water **SEA**								X	X
	With Manual Reversion/Degraded Control Augmentation					X	X	X	X	X
AFTER LANDING	Docking, Mooring and Ramping **SEA**								X	X
	Parking #						X	X	X	X
	Emergency Evacuation #			X	X	X	X	X	X	X
OTHER FLIGHT PROCEDURES DURING ANY AIRBORNE PHASE	Holding			X	X	X	X	X	X	X
	Ice Accumulation On Airframe #				X	X	X	X	X	X
	Air Hazard Avoidance #					A	A	X	X	X
	Windshear/Microburst #					X	X	X	X	X
SYSTEMS PROCEDURES DURING ANY AIRBORNE PHASE	Pneumatic/Pressurization			X	X	X	X	X	X	X
	Air Conditioning	A	A	X	X	X	X	X	X	X
	Fuel and Oil	A	A	X	X	X	X	X	X	X
	Electrical	A	A	X	X	X	X	X	X	X
	Hydraulic	A	A	X	X	X	X	X	X	X
	Flight Controls	A		X	X	X	X	X	X	X
	Anti-Icing and Deicing Systems			X	X	X	X	X	X	X
	Autopilot		A	X	X	X	X	X	X	X
-Normal	Flight Management Guidance Systems and/or Automatic or Other Approach & Landing Aids		A	X	X	X	X	X	X	X
-Abnormal	Stall Warning Devices, Stall Avoidance Devices, and Stability Augmentation Systems			X	X	X	X	X	X	X
-Alternate	Airborne Weather Radar	A	A	X	X	X	X	X	X	X
	Flight Instrument System Malfunction		A	X	X	X	X	X	X	X
	Communications Equipment	A	A	X	X	X	X	X	X	X
	Navigation Systems	A	A	X	X	X	X	X	X	X
SYSTEMS PROCEDURES TRAINING DURING ANY AIRBORNE PHASE -Emergency	Aircraft Fires	A	A	X	X	X	X	X	X	X
	Smoke Control	A	A	X	X	X	X	X	X	X
	Powerplant Failure/Fire	A	A	X	X	X	X	X	X	X
	Electrical, Hydraulic, Pneumatic Systems	A	A	X	X	X	X	X	X	X
	Flight Control Systems Malfunction	A	A	X	X	X	X	X	X	X
	Landing Gear and Flap Systems Malfunction	A	A	X	X	X	X	X	X	X
	Air Hazard Avoidance #					X	X	X	X	X
	Windshear/Microburst M				X	X	X	X	X	X

509. PIC/SIC FLIGHT TRAINING (ALL TRAINING CATEGORIES): SINGLE-ENGINE AIRPLANES.

A. *Required Maneuvers and Procedures.* Training in the maneuvers and procedures table 3.2.6.9. must be conducted for satisfactory completion of each category of flight training. Those training events annotated with a "SEA" symbol are only required for operators engaged in seaplane operations.

(1) PIC's must complete training in each training event in this table.

(2) SIC's must complete training in each training event in this table. SIC training in the following events does not require manipulation of the primary aircraft controls but should emphasize duties of the pilot-not-flying:

- Approach and landing with pitch mistrim
- Steep turns

B. *Training Emphasis Considerations.* A POI should ensure that the operator's flight training emphasizes the appropriate areas for these categories of training.

- For initial new-hire training, emphasis should be on specific company procedures
- For transition training, emphasis should be on the handling characteristics and the maneuvers and procedures pertinent to the specific aircraft type
- For upgrade training, emphasis should be on the specific duties and responsibilities pertinent to the crewmember position
- For recurrent training, emphasis should be on new or required maneuvers or procedures pertinent to line operations

C. *FAR Part 135 Recurrent Flight Training (RFT). Recurrent flight training must be conducted periodically for both PIC's and SIC's, at least once every 12 months. FAR* § 135.351(c) specifies that recurrent flight training for pilots must include at least "...flight training in the maneuvers or procedures in this subpart except that satisfactory completion of the check required by FAR § 135.293 (the competency check)... may be substituted for recurrent flight training". The competency check may include any of the maneuvers and procedures currently required for the original issuance of the particular pilot certificate, for the operations authorized, and appropriate to the category, class, and type of aircraft involved. The instrument proficiency check, as specified in FAR § 135.293(c), may be substituted for the competency check. Additionally, there are no provisions in FAR Part 135 which allow recurrent flight training to substitute for required checks or tests. There are no training appendices in FAR Part 135 containing lists of the required maneuvers and procedures for flight training or checking. Training on the events in the applicable tables in this section, however, does meet the FAR Part 135 competency and instrument proficiency check requirements and therefore, the recurrent flight training requirements.

TABLE 3.2.6.9.
FLIGHT TRAINING
PIC/SIC FLIGHT TRAINING (ALL TRAINING CATEGORIES): SINGLE-ENGINE AIRPLANES

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
						VIS	PH I	PH II	PH III	
PREPARATION	Visual Inspection									X
	Pretaxi Procedures		X	X	X	X	X	X	X	X
	Performance Limitations	X	X	X	X	X	X	X	X	X
SURFACE OPERATION	Cockpit Management			X	X	X	X	X	X	X
	Securing Cargo									X
	Starting	X	X	X	X	X	X	X	X	X
	Taxi					X	X	X	X	X
	[ ] Powerback Taxi						X	X	X	X
	Steep Turns **SEA**									X
	Sailing **SEA**									X
	Pretakeoff Checks			X	X	X	X	X	X	X
TAKEOFF	Normal **M**						X	X	X	X
	Crosswind						X	X	X	X
	Rejected **M**			X	X	X	X	X	X	X
	Short/Soft Field **M**								X	X
	Glassy/Rough Water **SEA**								X	X
CLIMB	Normal			X	X	X	X	X	X	X
	Obstacle				X	X	X	X	X	X
EN ROUTE	Steep Turns **PIC**			X	X	X	X	X	X	X
	Approaches to Stalls: **M** (Takeoff Config.) (En Route Config.) (Landing Config.) X* Only if stall warning/stall avoidance provides first stall indication			X*	X	X	X	X	X	X
	Slow Speed Handling Characteristics			X	X	X	X	X	X	X
DESCENT	Normal			X	X	X	X	X	X	X
	Maximum Rate			X	X	X	X	X	X	X
APPROACHES	**VFR Procedures M** Normal						X	X	X	X
	Accuracy						X	X	X	X
	IFR Precision Approaches M ILS						X	X	X	X
	[ ] MLS						X	X	X	X
	[ ] PAR						X	X	X	X
	IFR Nonprecision Approaches M NBD			A*	A*	X	X	X	X	X
	VOR A* - At least one nonprecision approach must be accomplished in a level A or higher simulator or the aircraft			A*	A*	X	X	X	X	X
	[ ] LOC Backcourse		A	X	X	X	X	X	X	X
	[ ] SDF/LDA Procedures		A	X	X	X	X	X	X	X
	[ ] TACAN Procedures		A	X	X	X	X	X	X	X
	[ ] ASR Procedures		A	X	X	X	X	X	X	X
	[ ] RNAV Procedures		A	X	X	X	X	X	X	X
	[ ] LORAN C Procedures		A	X	X	X	X	X	X	X
	[ ] **Circling Approach M** (Simulator must be qualified for training/checking on the circling maneuver)							X	X	X
	MISSED APPROACHES M From Precision Approach					X	X	X	X	X
	From Nonprecision Approach					X	X	X	X	X
	NOTE: At least one MAP must be a complete approved procedure.									

TABLE 3.2.6.9.—Continued
FLIGHT TRAINING
PIC/SIC FLIGHT TRAINING (ALL TRAINING CATEGORIES): SINGLE-ENGINE AIRPLANES

FLIGHT PHASE	TRAINING EVENT	LEVEL OF FLT TRNG DEVICE				LEVEL OF FLT SIM				ACFT
		4	5	6	7	A	B	C	D	
						VIS	PH I	PH II	PH III	
LANDINGS	Normal							X	X	X
	Spot							X	X	X
	With Simulated Powerplant Failure							X	X	X
	With Pitch Mistrim PIC					X	X	X	X	X
	From Precision Instrument Approach							X	X	X
	Crosswind							X	X	X
	Short/Soft Field								X	X
	Glassy/Rough Water SEA								X	X
AFTER	Docking, Mooring, and Ramping SEA								X	X
LANDING	Parking #						X	X	X	X
	Emergency Evacuation #			X	X	X	X	X	X	X
OTHER FLIGHT	Holding			X	X	X	X	X	X	X
PROCEDURES	Ice Accumulation On Airframe #					X	X	X	X	X
DURING ANY	Air Hazard Avoidance #					X	X	X	X	X
AIRBORNE PHASE	Windshear/Microburst				X	X	X	X	X	X
SYSTEMS	Pneumatic/Pressurization	A	A	X	X	X	X	X	X	X
PROCEDURES	Air Conditioning	A	A	X	X	X	X	X	X	X
TRAINING	Fuel and Oil	A	A	X	X	X	X	X	X	X
DURING ANY	Electrical	A	A	X	X	X	X	X	X	X
AIRBORNE	Hydraulic	A	A	X	X	X	X	X	X	X
PHASE	Flight Controls	A	A	X	X	X	X	X	X	X
	Anti-Icing and Deicing Systems			X	X	X	X	X	X	X
	Autopilot		A	X	X	X	X	X	X	X
-Normal	Flight Management and Guidance Systems and/or Automatic or Other Approach & Landing Aids		A	X	X	X	X	X	X	X
-Abnormal	Stall Warning Devices/Stall Avoidance Devices			X	X	X	X	X	X	X
-Alternate	Airborne Weather Radar	A	A	X	X	X	X	X	X	X
	Flight Instrument System Malfunctions		A	X	X	X	X	X	X	X
	Communications Equipment	A	A	X	X	X	X	X	X	X
	Navigation Systems	A	A	X	X	X	X	X	X	X
SYSTEMS PROCEDURES	Aircraft Fires	A	A	X	X	X	X	X	X	X
TRAINING	Smoke Control	A	A	X	X	X	X	X	X	X
DURING ANY	Powerplant Malfunctions	A	A	X	X	X	X	X	X	X
AIRBORNE	Electrical, Hydraulic, Pneumatic Systems	A	A	X	X	X	X	X	X	X
PHASE	Flight Control System Malfunction	A	A	X	X	X	X	X	X	X
-Emergency	Landing Gear and Flap System Malfunction	A	A	X	X	X	X	X	X	X

511. PIC/SIC FLIGHT TRAINING (ALL TRAINING CATEGORIES): HELICOPTERS.

A. *Required Maneuvers and Procedures.* Training in the maneuvers and procedures table 3.2.6.10. must be conducted for satisfactory completion of each category of flight training. Those training events annotated with a "SEA" symbol are only required for an operator engaged in water operations.

(1) PIC's must complete training in each training event in this table.

(2) SIC's must complete training in each training event in this table. SIC training in the following events does not require manipulation of the primary aircraft controls but should emphasize the duties of the pilot-not-flying:

- Category "A" vertical and/or edge takeoffs and landings
- Approach and landing with anti-torque malfunctions

NOTE: The levels of training devices and/or simulators to be used for the training events listed in table 3.2.6.10. are currently under development.

B. *Training Emphasis Considerations.* A POI should ensure that the operator's flight training emphasizes the appropriate areas for these categories of training:

- For initial new-hire training, emphasis should be on specific company procedures
- For transition training, emphasis should be on the handling characteristics and the maneuvers and procedures pertinent to the specific aircraft type
- For upgrade training, emphasis should be on the specific duties and responsibilities pertinent to the crewmember position
- For recurrent training, emphasis should be on new or revised maneuvers or procedures pertinent to line operations.

C. *FAR Part 135 Recurrent Flight Training (RFT).* Recurrent flight training must be conducted periodically for both PIC's and SIC's, at least once every 12 months. FAR § 135.351(c) specifies that recurrent flight training for pilots must include at least, "...flight training in the maneuvers or procedures in this subpart except that satisfactory completion of the check required by FAR § 135.293 (the competency check)... may be substituted for recurrent flight training". The competency check may include any of the maneuvers and procedures currently required for the original issuance of the particular pilot certificate, for the operations authorized, and appropriate to the category, class, and type of aircraft involved. The instrument proficiency check, as specified in FAR § 135.293(c), may be substituted for the competency check. Additionally, there are no provisions in FAR Part 135 which allow recurrent flight training to substitute for required checks or tests. There are no training appendices in FAR Part 135 containing lists of the required maneuvers and procedures for flight training or checking. Training on the events in the applicable tables in this section, however, does meet the FAR Part 135 competency and instrument proficiency check requirements and therefore, the recurrent flight training requirements.

D. *Helicopter Flight Training Device and Flight Simulator Usage.* The criteria for the use of helicopter flight training devices and flight simulators are currently under development. Several helicopter training devices and simulators have been individually approved using interim criteria. These devices and simulators may continue to be used in FAR Part 135 training and checking activities in accordance with specific approvals currently in effect.

512. - 522. RESERVED

TABLE 3.2.6.10.
FLIGHT TRAINING
PIC/SIC FLIGHT TRAINING (ALL TRAINING CATEGORIES): HELICOPTER

FLIGHT PHASE	TRAINING EVENT	CURRENTLY BEING DEVELOPED								ACFT
		LEVEL OF FLT TRNG DEVICE				LEVEL OF FLT SIM				
		4	5	6	7	A	B	C	D	
PREPARATION	Visual Inspection									
	Pretaxi Procedures									
	Performance Limitations									
SURFACE OPERATIONS	Starting									
	Rotor Engagement									
	Rotor Engagement on Water **SEA**									
	Taxiing									
	Water Taxiing **SEA**									
	Lift-to-Hover IGE/OGE **M**									
	Hover Turns IGE/OGE									
	Sideward/Rearward Hovering									
	Slope Operations **M**									
	Liftoff									
	Landing									
	Taxiing									
TAKEOFF	Normal **M**									
	Instrument									
	Obstacle Clearance **M**									
	Running (High Altitude) **M**									
	Category "A" **M**									
	Category "A" **M** With Powerplant Failure Before CDP									
	Category "A" **M** With Powerplant Failure After CDP									
	Rejected Takeoff **M**									
CLIMB	Normal									
	Best Rate									
	Best Angle									
EN ROUTE	Medium-Banked Turns									
	Powerplant Shutdown and Restart									
	Low Speed Characteristics									
	High Speed Characteristics									
DESCENT	Normal									
	Maximum Rate									
	Autorotative Glide									
APPROACHES	**VFR Procedures M** Normal									
	Obstacle Clearance									
	High Altitude									
	Elevated Landing Site									
	With Degraded Control Augmentation									
	Balked Landing **M**									
	IFR Precision Approaches M ILS/Normal									
	ILS/One-Engine Inoperative									
	[ ] MLS/Normal									
	[ ] MLS/One-Engine Inoperative									
	[ ] PAR/Normal									
	[ ] PAR/One-Engine Inoperative #									
	IFR Nonprecision Approaches M NDB/Normal									

TABLE 3.2.6.10.
FLIGHT TRAINING
PIC/SIC FLIGHT TRAINING (ALL TRAINING CATEGORIES): HELICOPTER

FLIGHT PHASE	TRAINING EVENT	CURRENTLY BEING DEVELOPED								ACFT
		LEVEL OF FLT TRNG DEVICE				LEVEL OF FLT SIM				
		4	5	6	7	A	B	C	D	
APPROACHES (Cont'd)	VOR/Normal									
	[ ] LOC Backcourse Procedures									
	[ ] SDF/LDA Procedures									
	[ ] TACAN Procedures									
	[ ] ASR Procedures									
	[ ] RNAV Procedures									
	[ ] LORAN C Procedures [ ] **Circling Approach M** (Simulator must be qualified for training/checking on the circling maneuver)									
	MISSED APPROACHES M From Precision Approach									
	From Nonprecision Approach									
	NOTE: At least one MAP must be a complete approved procedure.									
	With Powerplant Failure									
LANDINGS	Normal									
	Normal-to-the-Water **SEA**									
	[ ] Category "A"									
	[ ] Category "A" With Powerplant Failure after LDP									
	Crosswind									
	From a Precision Approach									
	From a Precision Approach With at Least 50% Power Deficiency									
	With Degraded Control Augmentation									
AFTER LANDING	Taxi									
	Parking #									
	Stopping the Rotors									
	Emergency Evacuation #									
UNPREPARED SITE OPERATIONS	Confined Areas									
	Pinnacles									
	Rideglines									
	Water Sites **SEA**									
OTHER FLIGHT PROCEDURES DURING ANY AIRBORNE PHASE	Holding									
	Ice Accumulation On Airframe #									
	Air Hazard Avoidance #									
	Windshear/Microburst									
SYSTEMS PROCEDURES TRAINING DURING ANY AIRBORNE PHASE	Pneumatic/Pressurization									
	Air Conditioning									
	Fuel and Oil									
	Electrical									
	Hydraulic									
	Flight Controls									
	Anti-Icing and Deicing Systems									
	Auto Flight Systems									
-Normal	Flight Management and Guidance Systems									
-Abnormal	Automatic or Other Approach & Landing Aids									
-Alternate	Loss of Anti-Torque Effectiveness **M**									
	Airborne Radar Systems									
	Flight Instrument System Malfunctions									
	Communications Equipment									
	Navigation Systems									

TABLE 3.2.6.10.—Continued
FLIGHT TRAINING
PIC/SIC FLIGHT TRAINING (ALL TRAINING CATEGORIES): HELICOPTER

FLIGHT PHASE	TRAINING EVENT	CURRENTLY BEING DEVELOPED								ACFT
		LEVEL OF FLT TRNG DEVICE				LEVEL OF FLT SIM				
		4	5	6	7	A	B	C	D	
SYSTEMS	Aircraft Fires									
PROCEDURES	Smoke Control									
TRAINING	Powerplant Malfunctions									
DURING ANY	Electrical, Hydraulic, Pneumatic Systems									
PHASE	Landing Gear Malfunctions									
	Anti-Torque Failure M									
-Emergency	Settling-with-Power									

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CHAPTER 3. CHECK AIRMAN, INSTRUCTOR, AND SUPERVISOR PROGRAMS

SECTION 1. GENERAL

637. INTRODUCTION. This chapter contains guidance concerning check airman, air transportation instructor, and air transportation supervisor programs for Federal Aviation Regulations (FAR) Parts 121 and 135 operators. Section 1 addresses the roles and purposes of check airmen, of air transportation flight instructors, of air transportation ground instructors, and of air transportation supervisors. Also in section 1 are regulatory requirements, qualifications, and functional responsibilities. Section 2 addresses Federal Aviation Administration (FAA) approval and surveillance of FAR Part 121 and FAR Part 135 check airmen. Section 3 addresses training requirements.

639. REGULATORY REQUIREMENTS. FAR § 121.401(a)(4) and FAR § 135.323(a)(4) require operators to provide enough flight instructors and check airmen to conduct the flight training and flight checks required in FAR Parts 121 and 135. FAR § 121.401(c) and FAR § 135.323(c) specify that each instructor, supervisor, or check airman responsible for a particular training curriculum or curriculum segment (including ground and flight training segments and flight checks or competency checks) shall certify the proficiency and knowledge of individuals receiving the training or checks. FAR § 121.411 and FAR § 121.413 or FAR § 135.337 and FAR § 135.339, as applicable, specify the qualification and training requirements for check airmen and flight instructors. FAR § 121.421(b) and FAR § 121.422(b) require that flight attendants and aircraft dispatchers be given competency checks, which may be given by appropriately qualified air transportation supervisors or ground instructors. FAR § 121.434(e) requires that flight attendants receive operating experience (OE) under the supervision of a qualified flight attendant supervisor.

640. EXEMPTIONS. A process to petition for relief from regulatory requirements is provided under the terms and procedures set forth in FAR Part 11. The language contained in exemptions granted under this process is viewed as regulatory language, and must be respected in exactly the same manner as the regulations themselves.

NOTE: Confusion often arises when policy guidance appears to be inconsistent with regulations. Inspectors and operators must bear in mind that Public Laws and Federal Aviation Regulations—including exemptions—comprise the body of requirements that can not be changed by policy. Policy guidance documents such as Advisory Circulars, handbooks, and bulletins to the handbooks are always subordinate to those requirements.

641. DEFINITIONS. For purposes of standardization, definitions follow which apply to check airmen, air transportation flight and ground instructors, and air transportation supervisors (who teach and check under FAR Part 121 and FAR Part 135 training programs:

- *Check Airman:* A check airman is an airman approved by the FAA who has the appropriate training, experience, and demonstrated ability to evaluate and to certify the knowledge and skills of other airmen. Evaluation is made on the basis of various checks conducted as modules in a specified operator's FAA-approved training program. A check airman is authorized to conduct proficiency or competency checks, line checks, and special qualification checks; to supervise the re-establishment of landing currency; and to supervise the initial operating experience (OE) requirements of FAR §§ 121.434 and 135.244. A check airman may conduct flight training in the operator's approved program.

NOTE: FAR Part 121 requires that landing currency be re-established under the supervision of a check airman. FAR Part 135 does not have such a requirement.

- *Air Transportation Flight Instructor:* An air transportation flight instructor is an airman designated by a FAR Part 121 or FAR Part 135 operator, who has the appropriate training, experience, and demonstrated ability to instruct other airmen in a flight segment (curriculum segment) of that operator's training program. An air transportation flight instructor may certify the proficiency and

knowledge of other airmen and recommend them for proficiency or competency checks, certification flight checks, and other special qualification flight checks. An air transportation flight instructor may also conduct LOFT/LOS training under AQP and under FAR Part 121, Appendix H programs when all appropriate requirements have been met.

NOTE: An air transportation flight instructor is not required to hold an FAA Flight Instructor Certificate (CFI) when instructing in FAR Part 121 or FAR Part 135 training programs.

- *Air Transportation Ground Instructor:* An air transportation ground instructor is a person selected by the operator who has the appropriate knowledge, experience, training, and demonstrated ability to instruct crewmembers or aircraft dispatchers in curriculum segments other than flight curriculum segments. An air transportation ground instructor may certify the satisfactory completion of ground training curriculum segments by flightcrew member. An air transportation ground instructor who is specifically selected and qualified by the operator may conduct competency checks for flight attendants or for aircraft dispatchers, as applicable.

NOTE: An air transportation ground instructor is not required to hold an FAA Ground Instructor Certificate when conducting FAR Part 121 or FAR Part 135 training activities.

- *Supervisor:* For purposes of this handbook, a supervisor is an aircraft dispatcher or flight attendant chosen by the operator to conduct competency checks. A flight attendant supervisor may supervise flight attendant OE.

NOTE: Operators may define the term "supervisor" differently from the definition used in this handbook. Inspectors should ensure a mutual understanding of the term in discussions with operators.

643. CHECK AIRMAN ROLE AND CHARACTERISTICS. The roles of check airmen are (1) to ensure that the flight crewmember has met competency standards before the crewmember is released from training, and (2) to ensure that those standards are maintained while the crewmember remains in line service. Effective training and use of check airmen by an operator ensure that flight crewmembers are standardized in their job performance. A check airmen candidate must be knowledgeable in the applicable requirements of FAR Parts 61, 63, 65, 91, 121, 135, and other regulations; in applicable FAA policies; and in safe operating procedures required for particular crewmember positions. A check airman candidate must have achieved and maintained a favorable record as a flight crewmember. Once approved, a check airman's manner and professional reputation should always reflect positively upon the employer and the FAA.

NOTE: Under current regulations no normal term to expiration is specified for approvals of check airmen (unlike designated examiners, whose term is 12 months, per FAR Part 183). A check airman's approval may be given, limited, or withdrawn, in the discretion of the Principal Operations Inspector (POI).

645. CLASSIFICATIONS OF CHECK AIRMEN. There are six check airman classifications, five of which relate to pilots, one of which relates to flight engineers. Approval for each check airman classification is contingent on the check airman having been properly certificated in the applicable aircraft and crew position; having been trained in accordance with the operator's approved check airman training program for the specific classification; and having demonstrated to the FAA the ability to conduct a test event and to evaluate an airman's performance. The six check airman classifications are:

- Proficiency Check Airman - Aircraft
- Proficiency Check Airman - Simulator
- Line Check Airman - All Seats (left, right, observer's)
- Line Check Airman - Observer's Seat Only
- Check Airman - All Checks
- Check Flight Engineer

647. PROFICIENCY CHECK AIRMAN - AIRCRAFT (INCLUDES SIMULATOR).

A. *Eligibility.* For initial and continuing approval as a proficiency check airman - aircraft, an airman must meet the following eligibility requirements:

- Hold the required certificate and ratings for the specific aircraft to serve as pilot-in-command (PIC) in revenue service
- Hold a third class medical certificate for instructing or evaluating in an aircraft or in a simulator. For programs approved under FAR § 121.409b (and the sections referenced therein) a medical certificate is not required

NOTE: Rulemaking has been initiated to remove the requirement of FAR § 121.411 for

a medical certificate for instructors and check airmen in a simulator.

- Have completed the operator's air transportation flight instructor and check airman qualification training programs required by FAR §§ 121.411, 121.413 and Appendix H, or by FAR §§ 135.337 and 135.339, as applicable, covering such topics as:
  - Check ride briefings and debriefings

    for an applicant

    for supporting crew members

    for a safety pilot
  - Safety preparedness and countermeasures

    in an aircraft

    in a flight simulator (such as emergency exits, fire and smoke procedures, and simulator motion failures)
- Meet training and currency requirements to serve as PIC for that operator, including ground and flight training, proficiency or competency checks, and 90-day landing currency
- Maintain line currency as a flightcrew member with the operator, or be line familiar with the operator's procedures and line operation by participating in a line observation program that has been approved by the operator's POI. (Refer to Advisory Circular (AC) 120–35, as amended, for a discussion of terms) A medical certificate appropriate to the crew position occupied on the line is required for those instructors and check airmen who maintain line currency.
- Satisfactorily demonstrate, initially and at least biennially, to an FAA inspector the ability to conduct proficiency or competency checks in an aircraft in flight or in a simulator, or in both, as appropriate. Initial evaluation shall include evaluation in an aircraft. Evaluation of an instructor in a simulator shall include the individual's ability to operate the simulator while instructing.

B. *Authorized Activities.* A classification of proficiency check airman - aircraft authorizes a check airman to conduct the following activities:

- Pilot proficiency or competency checks conducted as a qualification curriculum segment in the operator's approved training program, from either pilot seat in an aircraft in flight, or in a simulator, as appropriate.
- Flight instruction in the operator's approved training program, from either pilot seat in an aircraft in flight, or in a simulator, or both, as appropriate.
- Supervision of the re-establishment of landing currency
- Special checks conducted as a qualification curriculum segment of the operator's approved training program, provided the check airman is qualified in the specific activity for which the special check is being conducted (such as CAT II and CAT III operations)
- Certification of the satisfactory proficiency and knowledge of airmen after completion of a flight training curriculum segment or flight training module
- When authorized by the operator, ground instruction for airmen, and certification of the satisfactory completion by an airman of a ground training curriculum segment

649. PROFICIENCY CHECK AIRMAN - SIMULATOR.

A. *Eligibility.* To be eligible for initial and continuing approval as proficiency check airman - simulator, an airman must meet the following eligibility requirements:

- Hold the required certificate and ratings to serve as PIC of the specific aircraft in revenue service
- Hold at least a valid third class medical certificate
- Have completed the operator's air transportation flight instructor and check airman qualification training programs as required by FAR §§ 121.411, 121.413 and Appendix H, or by FAR § 135.337 and FAR § 135.339, as applicable (The requirements of FAR § 121.413(c)(1) and FAR § 135.339(c)(1) may be accomplished entirely in a simulator), including such topics as:
  - Check ride briefings and debriefings

    for an applicant

    for supporting crew members
  - Safety preparedness and countermeasures in a flight simulator (such as emergency exits, fire and smoke procedures, and simulator motion failures)
- Meet the currency requirements to serve as PIC for the operator, including ground and flight

training and the required proficiency or competency checks. These requirements may be met by using a level B (or higher) flight simulator, in which case landing currency in the actual aircraft is not required. When the operator's training program includes single visit training under an exemption to FAR Part 121, or is approved for AQP, the instructor shall maintain currency as required by those programs.

- Maintain line currency as a flight deck crewmember with the operator, or be line familiar with the operator's procedures and line operation by participating in a line observation program that has been approved by the operator's POI. (Refer to AC 120-35, as amended, for a discussion of terms) A medical certificate appropriate to the crew position occupied on the line is required for those instructors and check airmen who maintain line currency.
- Satisfactorily demonstrate, initially and at least biennially, to an FAA inspector the ability to conduct proficiency or competency checks in simulated flight in a simulator. Part of the inspector's observation shall address the check airman's proficiency in evaluating an airman and operating the simulator simultaneously.

B. *Authorized Activities:* Approval as a proficiency check airman - simulator authorizes a check airman to conduct the following activities:

- Pilot proficiency or competency checks, as authorized, in an approved flight simulator or flight training device in a qualification curriculum segment in the operator's approved training program
- The simulator or training device segment, as authorized, of a two-segment proficiency or competency check, as a qualification curriculum segment of the operator's approved training program

NOTE: A two-segment check is one conducted partially in an approved training device or simulator and completed in flight in an aircraft.

- Flight instruction in a flight simulator or flight training device as a curriculum segment in the operator's approved training program
- Supervision of the re-establishment of landing currency
- Any special check as a module in the operator's approved training program, provided that the check airman is qualified in the specific activity for which the special check is being conducted (such as CAT II and CAT III operations)
- Certification of the satisfactory proficiency and knowledge of airmen after completion of a flight training curriculum segment or flight training module
- When authorized by the operator, ground instruction for airmen and certification of the satisfactory completion of a ground training curriculum segment

651. LINE CHECK AIRMAN - ALL SEATS (LEFT PILOT SEAT, RIGHT PILOT SEAT, AND OBSERVER'S SEAT).

A. *Eligibility.* For initial and continuing approval as a line check airman - all seats, an airman must meet the following eligibility requirements:

- Hold the required certificate and ratings for the specific aircraft to serve as PIC in revenue service
- Hold a valid medical certificate equal to the class required to act as PIC in revenue service
- Meet training and currency requirements to serve as PIC, including line currency, ground and flight training, proficiency or competency checks, line checks, and 90-day landing currency (These requirements may be met entirely in a level B or higher simulator.)
- Have completed the operator's check airman qualification training program equivalent to that required by FAR §§ 121.411 and 121.413, or FAR §§ 135.337 and 135.339, as applicable, including such topics as :
  - Briefings and debriefings

    for the PIC

    for other crewmembers
  - Safety preparedness and countermeasures

    in an aircraft
- Satisfactorily demonstrate, initially and at least biennially, to an FAA inspector the ability to conduct line checks from a pilot seat or to oversee operating experience and other activities

B. *Authorized Activities.* Approval as a line check airman - all seats authorizes a check airman to conduct the following activities:

- Pilot line checks from either pilot seat or the observer's seat

- Supervision of OE from either pilot seat

NOTE: OE may be conducted from the observer's seat, in accordance with FAR § 121.434(c)ii, provided that the PIC is completing a transition training curriculum by acquiring OE; the PIC has made at least two takeoffs and landings in the aircraft; and that the check airman is satisfied that the pilot is competent to perform as PIC.

- Training and checking in special operations as a module of the operator's approved training program, provided that the check airman is qualified in the specific operations being conducted (special airports or international routes)
- When authorized by the operator, ground instruction and certification of the satisfactory completion by an airman of a ground training curriculum segment

653. LINE CHECK AIRMAN - OBSERVER'S SEAT ONLY.

A. *Eligibility.* For approval as a line check airman - observers seat only, an airman must meet the following eligibility requirements:

- Hold the required certificate and ratings to serve as PIC in the particular aircraft
- Hold at least a valid third class medical certificate
- Meet the currency requirements to serve as PIC, including ground and flight training, proficiency or competency checks, and 90-day landing currency. These requirements may be met entirely in a level B (or higher) simulator for this designation.
- Have completed the operator's check airman qualification training program equivalent to that required by FAR §§ 121.411 and 121.413, or FAR §§ 135.337 and 135.339, as applicable, including such topics as :
  - Briefings and debriefings

    for the PIC

    for other crewmembers
  - Safety preparedness and countermeasures

    in an aircraft
- Satisfactorily demonstrate, initially and at least biennially, to an FAA inspector the ability to conduct line checks from the observer's seat when a second observer's seat is available: otherwise in LOFT
- Maintain line currency as a flight deck crewmember with the operator, or be line familiar with the operator's procedures and line operation by participating in a line observation program that has been approved by the operator's POI. (Refer to AC 120-35, as amended, for a discussion of terms) If the instructor and check airman want to maintain line currency, than the appropriate medical certificate is required.
- Be re-evaluated initially and at least biennially as a line check airman by an FAA inspector

NOTE: The operator must have procedures, published in it's operations manual, that shall be followed in the event that a line check airman determines that a pilot's performance does not meet standards that would allow the individual to continue to operate the aircraft. The crewmember shall not be allowed to continue the flight or trip. If the line check airman does not possess the appropriate class of medical certificate to substitute for the crewmember, specific alternative procedures shall be followed.

B. *Authorized Activities.* Approval as a line check airman - observer's seat only, authorizes a check airman to conduct the following activities as modules of the operator's approved training program, provided that the PIC and second-in-command (SIC) are current and fully qualified in the aircraft:

- Line checks from the observer's seat
- Training and checking for special operations, from the observer's seat, provided that the check airman is qualified in the specific operation (such as special airports and international routes)
- When authorized by the operator, ground instruction and certification of the satisfactory completion by an airman of a ground training curriculum segment

655. CHECK AIRMAN - ALL CHECKS. The airman must meet eligibility requirements for a proficiency check airman - aircraft, for a proficiency check airman - simulator, and for a line check airman - all seats, in accordance with earlier paragraphs in this section. Approval as a check airman - all checks authorizes a check airman to conduct all checks contained in the qualification curriculum segment of the operator's approved training program, including those checks and other activities of a line check airman - all seats; and, with the approval of the operator, to give flight and ground instruction in that training program.

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659. CHECK FLIGHT ENGINEER. Approval as a check flight engineer is appropriate for operators using aircraft exclusively for their flight engineer training programs. This approval is also appropriate for operators using flight simulators or flight training devices for part or all of those training programs.

A. *Eligibility.* For initial and continuing approval as a check flight engineer, an airman must meet the following eligibility requirements:

- Hold the required certificate and class ratings to serve as a flight engineer on the specific aircraft in revenue service
- Hold a valid third class medical certificate when conducting simulator checks
- Hold a valid third class medical certificate when conducting aircraft training or checks in an aircraft in flight
- Have completed the operator's approved air transportation check airman training program for this function, including the training required by FAR §§ 121.411 and 121.413, as applicable to the flight engineer crew position, including topics such as:
  - Check ride briefings and debriefings

    for an applicant

    for supporting crew members
  - Safety preparedness and countermeasures

    in an aircraft (if applicable)

    in a flight simulator (such as emergency exits, fire and smoke procedures, and simulator motion failures)
- Meet the training and currency requirements to serve as a flight engineer for the operator in the specific aircraft, including ground training, flight training, and proficiency checks
- Maintain line currency as a flight deck crewmember with the operator, or be line familiar with the operator's procedures and line operation by participating in a line observation program that has been approved by the operator's POI. (Refer to AC 120-35, as amended, for a discussion of terms).
- Satisfactorily demonstrate, initially and at least biennially, to an FAA inspector the ability to conduct a flight engineer proficiency check in a flight simulator

NOTE: When the normal procedures portion of the check must be conducted in an aircraft and in flight, the check airman candidate shall be observed under those conditions. If the normal procedures segment of the check can be conducted in a simulator, the check airman may be evaluated either in the simulator or in an aircraft (refer to exemption #4901 as amended).

B. *Activities.* Approval as a "check flight engineer," makes a check airman eligible to conduct any or all of the following activities, subject to the specific terms (authorizations and limitations) shown in the Letter of Approval.

- Flight engineer proficiency checks in an approved flight training device or flight simulator, or in an aircraft, as a module of the qualification curriculum segment in the operator's approved training program
- Instruction of flight engineers in an approved flight training device or flight simulator, or in an aircraft, as a module in the operator's approved training program
- Certification of the satisfactory performance of airmen after completion of a flight training curriculum segment or flight training module
- When authorized by the operator, ground instruction and certification of the satisfactory completion by an airman of a ground training curriculum segment

661. AIR TRANSPORTATION INSTRUCTOR ROLE AND CHARACTERISTICS. An air transportation instructor is a person employed by an operator or training center for the purpose of training flight crewmembers in a FAR Part 121 or FAR Part 135 operator's approved ground training curriculum. The training shall be sufficient to ensure that acceptable performance standards are met. When selected and qualified by the operator, an air transportation instructor is responsible for certifying the knowledge and proficiency of each crewmember upon completion of a training curriculum or curriculum segment. Air transportation instructors shall be knowledgeable in the applicable requirements of FAR Parts 61, 63, 65, 91, 121, 135 (as appropriate), and in the operator's policies and procedures. An air transportation instructor should possess effective communication skills and a manner which always reflects professionalism and a positive attitude toward safety.

663. AIR TRANSPORTATION FLIGHT INSTRUCTOR - AIRCRAFT. An air transportation flight instructor in an aircraft may be a pilot

instructor, a flight engineer instructor, or both., and may also conduct flight training in a flight simulator, flight training device, or ground training.

A. *Eligibility.* An instructor candidate airman must meet the following eligibility requirements:

- Hold the certificate and ratings required to serve in revenue service in the specified crewmember duty position on the specific aircraft except that the certificates and ratings are not required for training programs approved under FAR § 121.409b (simulators)
- Hold a valid third class medical certificate for operations conducted under FAR 91 such as aircraft training and aircraft ferry operations
- Meet currency requirements to serve as PIC for the operator or as flight engineer for the operator, including ground and flight training, proficiency or competency checks, and (for pilots) 90-day landing currency
- For pilots, must complete an annual line check or line observation module of a recurrent qualification curriculum segment
- Have received flight instructor qualification training under the operator's approved training program, including the training required by FAR §§ 121.411, 121.413 and Appendix H, or FAR §§ 135.337 and 135.339, as applicable
- Maintain line currency as a flight deck crewmember with the operator, or be line familiar with the operator's procedures and line operation by participating in a line observation program that has been approved by the operator's POI. (Refer to AC 120-35, as amended, for a discussion of terms) A medical certificate appropriate to the crew position occupied on the line is required for those instructors and check airmen who maintain line currency.

B. *Authorized Activities.* An air transportation flight instructor in an aircraft, when authorized by the employer, may conduct the following flight instruction activities:

- Flight instruction for airmen in an aircraft in flight, including instruction in giving appropriate preflight and postflight briefings
- Certification of the satisfactory performance of an airman after completion of a flight training curriculum segment or flight training module
- When authorized by the operator, ground instruction and certification of the satisfactory completion by an airman of a ground training curriculum segment

665. AIR TRANSPORTATION FLIGHT INSTRUCTOR - SIMULATOR. An air transportation flight instructor in a simulator may instruct in a simulator or flight training device, and may be a pilot instructor or a flight engineer instructor, or both.

A. *Eligibility.* A candidate must meet the following eligibility requirements:

- Under a FAR Part 121 training program, a pilot simulator instructor candidate must hold at least an Airline Transport Pilot (ATP) certificate; additionally an approved type rating for initial instruction
- Under a FAR Part 135 training program, a pilot simulator instructor candidate must hold an ATP certificate and the appropriate type rating. A commercial certificate with an instrument rating is sufficient when operations of the aircraft does not require the PIC to hold an ATP certificate and type rating
- A flight engineer simulator instructor candidate must hold a flight engineer certificate and the appropriate class rating
- Pilot simulator instructor candidates must have received the training required by FAR Part 121 Appendix H, when applicable. All candidates must have received the simulator instructor qualification required by the operator's approved training program including that required by FAR §§ 121.411 and 121.413, or FAR §§ 135.337 and 135.339, as applicable, including such topics as:
  - Briefings and debriefings by the PIC

    to flight deck crewmembers

    to other crew members
  - Safety preparedness and countermeasures

  in a flight simulator (such as emergency exits, fire and smoke procedures, and simulator motion failures)

NOTE: The requirements of FAR § 121.413(c)(1) and FAR § 135.339(c)(1) may be accomplished entirely in a simulator.

- Maintain line currency as a flight deck crewmember with the operator, or be line familiar with the operator's procedures and line operation by participating in a line observation program that has been approved by the operator's POI. (Refer to AC 120-35, as amended, for a discussion of terms) A medical certificate

appropriate to the crew position occupied on the line is required for those instructors and check airmen who maintain line currency.

B. *Authorized Activities.* An air transportation flight instructor in a simulator, when authorized by the employer, may conduct the following flight instruction activities:

- Flight instruction of airmen in a flight simulator or flight training device, including instruction in giving the appropriate preflight and postflight briefings
- Certification of the performance of an airman after completion of the flight simulator or flight training device portion of a flight training curriculum segment or flight training module (FAR § 121.409(b))
- When authorized by the employer, ground instruction and certification of the satisfactory completion by an airman of a ground training curriculum segment

667. AIR TRANSPORTATION GROUND INSTRUCTOR.

A. *Eligibility.* Eligibility requirements for air transportation ground instructors are not specified in the FAR. However, FAR §§ 121.401(a)(2) and 135.323(a)(2), do require that operators provide adequate ground training facilities and properly qualified ground instructors. An operator's ground instruction should be monitored frequently to ensure that competent instructors teach the approved training curriculum and curriculum segments. Inspectors and check airmen conducting practical tests (oral exams and flight checks) shall evaluate the knowledge and competency of crewmembers who have completed the ground training curriculums. They should identify any deficiencies and effect any required corrections with respect to the trainee or the training program itself. POI's should monitor training records to ensure that air transportation ground instructors are properly qualified.

B. *Authorized Activities.* An air transportation ground instructor, when authorized by the employer, may conduct the following types of ground instruction activities:

- Instruction in specified ground training curriculum segments

NOTE: The use of any training device, including mockups, flight training devices and flight simulators, is appropriate provided that the use of such a device is an integral part of an approved ground training curriculum segment.

C. *Training and Qualification Records.* The operator shall maintain documentation of the training and qualification for each air transportation ground instructor and supervisor, and shall make that documentation conveniently accessible for inspection by the FAA.

669. FAR PART 121 SUPERVISORS, FLIGHT ATTENDANT AND AIRCRAFT DISPATCHER.

An air carrier operating under FAR Part 121 engaged in passenger-carrying operations shall establish and maintain a program to train and qualify flight attendant supervisors. Domestic and flag operators shall also establish and maintain a program to train and qualify aircraft dispatcher supervisors. Those supervisors are authorized to conduct the competency checks required by FAR Part 121 for flight attendants and aircraft dispatchers. FAR § 121.401(c) specifies that ground instructors and supervisors responsible for a particular ground training curriculum segment or competency check shall certify the proficiency and knowledge of flight attendant crewmembers and aircraft dispatchers after completion of the competency check. When these ground instructors are chosen by their employers to conduct competency checks for aircraft dispatchers and flight attendants, they are termed air transportation supervisors, as defined in this handbook. To qualify, these supervisors must (themselves) complete the appropriate training curriculum and the required competency check. To maintain qualification, supervisors must complete the required recurrent training curriculum. POI's should monitor training records to ensure that air transportation supervisors who conduct flight attendant competency or aircraft dispatcher competency checks are properly qualified (see preceding paragraph 667 C).

670.–680. RESERVED.

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CHAPTER 3. CHECK AIRMEN, INSTRUCTOR, AND SUPERVISOR PROGRAMS

SECTION 2. CHECK AIRMAN APPROVAL AND SURVEILLANCE

681. GENERAL.

PTRS CODES:

- 1346 - Pilot
- 1347 - Flight Engineer
- 1349 - Oceanic Navigation

This section addresses procedures for approval and surveillance of check airmen. All check airmen must be approved by an operator's principal operations inspector (POI). Approval is based on an airman having the proper certificates and ratings; being qualified in accordance with the operator's approved initial, transition, or upgrade training program; having completed the operator's approved check airman training program for the appropriate check airman functions; and having demonstrated the ability to conduct flight checks and to evaluate the performance of airmen to the satisfaction of an Federal Aviation Administration (FAA) inspector. The check airman approval process follows the five phases of the general process described in volume 1, chapter 4, section 6. A job aid for POI's to use in this process is in figure 3.3.2.6.

683. PHASE ONE—OPERATOR FAMILIARIZATION WITH CHECK AIRMAN REQUIREMENTS, AND LETTER OF REQUEST. The first phase of the check airman approval process involves a discussion between the operator and the POI. The POI should ensure that the operator understands the check airman training requirements and that a check airman candidate must satisfactorily demonstrate the ability to perform check airman functions to an FAA inspector before approval. The POI should also ensure that the operator has a knowledge of the necessary documentation for initiating the approval process, which is as follows:

- The Letter of Request constitutes the operator's nomination. It originates from the operator, not a training center, candidate, or some other party. It includes the airman's full name, business address, applicable airman's certificate number, current crewmember position, requested check airman classification, and aircraft type
- Brief resume of the airman's aviation background and experience
- Copies of the airman's appropriate airman certificates
- Copy of the airman's medical certificate

NOTE: A POI may require that this information be expanded to suit circumstances.

685. PHASE TWO—SUBMISSION OF DOCUMENTATION. Phase two begins when the operator submits the requested documentation to the POI for evaluation. This submission may be transmitted by conventional or electronic mail, by fax, or by other means mutually acceptable to the operator and the POI. The POI shall initially review the information to determine if the check airman candidate meets the basic qualification requirements for the type of check airman approval sought (see section 1 of this chapter). If the operator's submission is unacceptable, the POI should return the submitted documentation with a statement of the reason for nonacceptance. If the operator's submission is acceptable, the POI should initiate phase three.

687. PHASE THREE—REVIEW OF DOCUMENTATION.

A. The POI shall verify the check airman candidate's certificates and background using the Flight Standards Information System (FSIS) and local office procedures. The POI shall then create a file for the individual in the check airman section of the Vital Information Subsystem (VIS).

NOTE: Creation of the VIS file at this point in the process will allow for documentation of subsequent action regarding the individual without having the records reject. During the upload/download process, check airman surveillance records are cross-checked (last name and certificate number) against the check airman ancillary file in the VIS data base file for the operator.

B. Before the POI can evaluate an airman for approval as a check airman, all required training must

be completed. The airman's training records must show satisfactory completion of initial, transition, or upgrade training and all training required under the operator's approved check airman training program for the specified classification. (Including Appendix H requirements. It may be covered by the use of all training required.) The approved training program must contain all training required by FAR §§ 121.411 and 121.413 or FAR §§ 135.337 and 135.339 that is applicable to the approval being sought. When the airman's records show that the airman has previously completed a required curriculum segment, the segment does not have to be repeated.

C. If, after reviewing the documentation, the POI determines that the candidate does not qualify as a check airman, the POI shall provide the operator with a statement of the reason for nonacceptance.

689. PHASE FOUR—CHECK AIRMAN EVALUATION.

PTRS 1631 - Check Airman Surveillance

In order to evaluate a check airman candidate effectively, inspectors must become thoroughly familiar with the operator's procedures. Inspectors must also become familiar with any special regulatory requirements affecting the operator, such as special conditions contained in the operations specifications and exemptions.

A. *Choosing Airmen as Subjects.* The inspector conducting an evaluation for an original check airman approval shall observe the check airman candidate conducting an actual check. The purpose of the check airman evaluation is to ensure that the candidate has achieved the required skills for briefing, evaluating, and debriefing an airman. The airman receiving the check should be a line crewmember who is due for an evaluation. The airman shall not be an instructor or check airman unless previous approval has been received from the POI. Such approval is reserved for unusual circumstances.

B. *Check Airman Candidate's Flying Skills.* Except for an initial cadre approval, a check airman evaluation does not entail an evaluation of the candidate's flying skills in a crew position. An operator should not request approval of an individual as a check airman when there is any question about the airman's flying skills in a crew position. Should the POI have reason to question the candidate's proficiency, the check airman evaluation shall not be conducted until the candidate's proficiency is verified. An acceptable way to verify the airman's proficiency is to check the check airman candidate. An inspector may conduct a proficiency check, a competency check, or a line check of the check airman candidate, scheduled at some time before the official check airman evaluation. (Such checks are not routinely required.)

C. *Satisfactory Evaluation.* If the inspector determines that a check airman candidate meets criteria for the requested check airman approval, the inspector shall inform the candidate that a recommendation of approval will be reported to the POI. In this case, the check airman candidate shall certify the proficiency of the airman receiving the check and complete the necessary record keeping tasks. The POI may permit the new check airman to be scheduled immediately as a check airman, even though processing of the Letter of Approval has not been completed.

D. *Unsatisfactory Evaluation.* If the inspector determines a candidate does not qualify for the requested check airman approval, the inspector shall inform the candidate that approval is withheld. In such a case, the inspector shall determine whether the airman receiving the check performed satisfactorily, and must certify the airman's proficiency and complete the necessary records.

NOTE: The failure of a check airman candidate is uncommon and usually ends a candidate's eligibility for check airman status. In rare circumstances the POI may allow a reevaluation. In such a case, the operator must conduct sufficient additional training, recertify the candidate's proficiency, and arrange for another evaluation to be conducted by an FAA inspector.

E. *Content of Check Airman Evaluation.* The following guidance applies to an inspector's evaluation in respect to each of the six classifications of check airmen.

(1) *Proficiency Check Airman - Aircraft.* An inspector shall evaluate this candidate while the candidate conducts a proficiency check or competency check in an aircraft in flight. The inspector should observe the candidate conducting the entire check in the aircraft. The candidate should be evaluated on his/her ability to evaluate an individual while, at the same time, performing the crewmember activities normally associated with the seat the check airman candidate occupies. With approval of POI, the inspector may observe part of the check in the aircraft and the remainder in a simulator or an approved flight training device (FTD).

(2) *Proficiency Check Airman - Simulator.* An inspector shall evaluate this candidate while the candidate conducts the simulator (or FTD) segment of an actual proficiency check, or competency check, as applicable. The candidate should be evaluated on his/her ability to evaluate an individual while, at the same time, demonstrating proficiency in operating the

simulator or training device. Time management and the ability to adapt to events that might disrupt a planned sequence of events should be considered. If the entire proficiency check or competency check can be accomplished in a flight simulator, the candidate must be observed conducting the entire check.

(3) *Line Check Airman - All Seats.* An inspector shall evaluate this candidate while the candidate conducts an actual line check from either pilot seat. Satisfactory performance will also permit the candidate to conduct a line check from the forward observer's seat, during line-oriented flight training (LOFT), during revenue service or during non-revenue service. A candidate for line check airman - all seats must be qualified to be the pilot-in-command (PIC) for that operator and hold a first class medical certificate.

NOTE: The operator must have procedures, published in it's operations manual, that shall be followed in the event that a line check airman determines that a pilot's performance does not meet standards that would allow the individual to continue to operate the aircraft. The crewmember shall not be allowed to continue the flight series or trip. If the line check airman does not possess the appropriate class of medical certificate to substitute for the crewmember, specific alternative procedures shall be followed.

(4) *Line Check Airman - Observer's Seat Only.* An inspector shall evaluate this candidate while the candidate conducts an actual line check from the forward observer's seat, during revenue or during ferry service. When the evaluation is conducted during revenue service, in an aircraft with only one observer's seat, a candidate who holds a second class medical certificate, who has not yet reached 60 years of age and is otherwise qualified for FAR Part 121 operations (does not apply to FAR Part 135 operations) may be evaluated while conducting a line check from the right pilot seat. In this case, the PIC must be fully qualified and line current. When the evaluation is conducted during nonrevenue operations in an aircraft with only one observer's seat, a candidate who holds at least a third class medical certificate and who is over 60 years of age and is otherwise qualified for FAR Part 121 operations (does not apply to FAR Part 135 operations) may be evaluated while conducting a line check from the right pilot seat. A check airman who is approved to conduct line checks from the observer's seat and who does not maintain line currency, must be observed by an inspector at least once every 24 calendar months. If an evaluation within this time period is not given, the check airman is not authorized to conduct line checks.

NOTE: The operator must have procedures, published in it's operations manual, that shall be followed in the event that a line check airman determines that a pilot's performance does not meet standards that would allow the individual to continue to operate the aircraft. The crewmember shall not be allowed to continue the flight series or trip. If the line check airman is not qualified (including appropriate medical certificate) to substitute for the crewmember, specific alternative procedures shall be followed.

(5) *Check Airman - All Checks.* An inspector shall evaluate this candidate in accordance with preceding paragraphs. The evaluations for this approval may be treated cumulatively.

NOTE: An airman may have been a proficiency check airman - aircraft for a number of years and then qualify as a line check airman - all seats. If the operator does not use simulators in the training program, then upon satisfactory completion of the line check evaluation, the check airman could be approved to conduct all of the forgoing checks.

(6) *Check Flight Engineer.* An inspector shall evaluate this candidate while the candidate conducts a flight engineer proficiency check in a simulator or approved FTD. The normal, abnormal, and emergency procedures segments of the check are normally accomplished in a simulator or approved FTD. In those instances when a check flight engineer candidate is to conduct any portion of a check in an airplane in flight, the check airman candidate must be a qualified and current flight engineer and must be evaluated during actual flight.

F. *Conducting a Check Airman Evaluation.*

(1) *Pre-Evaluation Briefing.* An inspector conducting a check airman evaluation shall arrange to meet with the candidate in sufficient time for a pre-evaluation briefing. The inspector shall explain the purpose of the evaluation and some ground rules, including: (1) that the check should be conducted as if the candidate were fully qualified in the role of check airman; (2) that during the briefing, the inspector may ask questions of the check airman candidate as part of the evaluation; and (3) that the inspector will not ask questions while the check is in progress.

(2) *Observing and Debriefing the Candidate.* While the check is in progress, the inspector shall observe, but should not interrupt or otherwise interfere with the check airman candidate's management of the check. The inspector shall determine that all required events and maneuvers were conducted properly; that the check airman candidate's evaluation of the airman's performance was objective and accurate; and

that the check airman candidate's debriefing of the airman was thorough and constructive.

691. PHASE FIVE - CHECK AIRMAN APPROVAL. All check airmen approved for FAR Part 121 or FAR Part 135 operations must be approved by the operator's POI.

A. *Letter of Approval.* Approval of a check airman shall be in the form of a Letter of Approval addressed to a responsible official of the operator and signed by the POI, or a representative approved by the POI. This Letter of Approval may be transmitted to the operator by conventional or electronic mail, by fax, or by other means acceptable to the operator and the POI. The letter shall contain the following:

- Check airman's name and applicable FAA airman's certificate number
- Approved check airman classification (1-6)
- Specified category, class, or type of aircraft
- Authorizations and limitations

NOTE: A POI may approve a check airman only for operators under that POI's oversight.

- Effective date of each approval (since different approvals may occur at different times, this information simplifies record checks. The date on which the check airman was recommended for approval by an inspector shall be the effective date of the approval.)

See figures 3.3.2.1. and 3.3.2.2. for sample letters of approval.

NOTE: Under current regulations no normal term to expiration is specified for approvals of check airmen (unlike designated examiners, whose term is 12 months, per FAR Part 183). A check airman's approval may be given, limited, or withdrawn, in the discretion of the POI.

B. *One Letter of Approval.* A check airman shall be approved only in the (six) classifications covered earlier in this chapter. A flight standards district office (FSDO) shall issue only one Letter of Approval for a check airman, listing the operator(s) and classification(s).

NOTE: A check airman file in the VIS must be entered into the system that reflects the operator for which the check airman is associated. A forthcoming change to the VIS will result in a single file for each check airman, and will permit the listing of all operator and training center affiliations and classifications. The file will be keyed to the airman's certificate number. The new VIS capability will be implemented after the effective date of FAR Part 142.

C. *Letter of Approval - Other Copies.* (1) The original copy of the Letter of Approval shall be retained in the individual check airman's training records file; (2) a copy shall be sent to the geographic program manager having surveillance responsibility for the check airman. (3) when the individual is a training center instructor approved to evaluate an operator's personnel, a copy of the Letter of Approval shall be provided to the training center for inclusion in its records. A copy shall be maintained in the FAA office files of the overseeing inspector for 2 years after the approval is withdrawn or superseded.

D. *PTRS and VIS.* The POI shall ensure that a record of the approval is entered in the Program Tracking and Reporting Subsystem (PTRS). Each time a check airman approval is given or withdrawn, the POI shall ensure that the operator's VIS file accurately reflects: (1) the current number of active check airmen approved for the operator, and (2) the correct status of the individual.

693. WITHDRAWN—CHG 11

695. APPROVAL OF INITIAL CADRE CHECK AIRMEN. During the early phases of establishing a check airman program, initial cadre check airman are required. Initial check airman candidates must first become fully qualified as flight crewmembers and then be trained, evaluated, and approved as check airmen. Since the regulatory language of FAR Parts 121 and 135 does not address a training process for initial cadre check airmen, guidance is provided in this handbook. The process that follows is valuable for start-up operations for at least two reasons: (1) it is a practical way to bootstrap a check airman program into existence; and (2) it takes advantage of proving flights, when the operator/applicant is under close FAA scrutiny—with desirable effects on the check airman program.

A. *Letter of Request from Operator.* The overseeing inspector shall arrange with the operator/applicant to approve one or more likely check airman candidates to form an initial cadre of temporary check airmen. The operator/applicant shall submit a letter of request, as described earlier in this section. This letter comprises the request for initial cadre check airmen and a description of the training that they will undergo.

B. *Letter of Approval.* The POI shall approve the candidates using procedures described earlier in this section. Usually initial cadre check airmen are approved to function as check airman - all checks or check flight engineer, so that they may conduct all

types of checks and supervise OE during the period that the start-up operation is beginning. The initial cadre check airman Letter of Approval is a temporary approval, to be replaced with a permanent Letter of Approval after the check airman is fully qualified. The initial cadre check airman letter shall contain a statement similar to the following:

(Name) is approved as an initial cadre check airman to function as a check airman - all checks or as a check flight engineer for the purpose of initiating operations with the (type of aircraft) for (name or operator). This approval expires on (expiration date).

696. TRAINING, CERTIFICATION, AND QUALIFICATION—START-UP. The operator shall provide a full qualification process for its initial cadre check airmen.

A. *Initial Training and Certification.* The operator must first arrange to have initial cadre check airmen trained and appropriately certificated for their cockpit duty positions. The operator may provide the training by contracting with a manufacturer, with another operator, or with properly qualified individuals. An inspector or a designated examiner may certificate the initial cadre airmen, provided that the examiner is employed by a U.S. Air Carrier Operator or FAR Part 142 training center.

B. *Gaining Proficiency as Instructors.* After the initial training and certification, initial cadre check airmen shall become proficient in the operator's proposed training program by instructing each other, or in the case of a single initial cadre check airman, by self training. During this training an operator may arrange for a pilot from the manufacturer, from another operator, or from another source to act as the safety pilot or instructor pilot.

C. *Proficiency and Competency Checks.* After the first initial cadre check airmen have become proficient as instructors, they may then begin the training and checking of other initial cadre check airmen in accordance with the operator's initially-approved flight training and qualification curriculum segments. Each check shall be observed by an FAA inspector who holds the appropriate airman's certificate, and the appropriate type rating, when applicable. If the inspector determines that the performance of an initial cadre check airman conducting a certain check is satisfactory, the inspector shall recommend to the overseeing inspector that the airman be approved as a check airman for that type of check. One initial cadre check airman may check another, with the process repeated until each candidate has been approved as a check airman or has been terminated from the program. If only one person is being considered to be the initial cadre check airman, an inspector shall observe that person conducting a check of another airman. If the candidate's performance is satisfactory, the inspector shall recommend to the POI that the candidate be removed from temporary status and approved for full-time check airman duty with the operator.

D. *Operating Experience (OE).* Initial cadre check airmen shall be permitted to acquire OE flight hours on any flight that can be credited toward the proving test flight hour requirement (including training flights, ferry flights, and representative en route proving flights). OE flight hours may be accrued by initial cadre check airmen while they are: (1) conducting aircraft checks, (2) overseeing the OE of other airmen, (3) being checked, or (4) acquiring OE under the supervision of other initial cadre check airmen. Initial cadre check airmen shall receive a line check and conduct a line check during an en route proving flight or a ferry flight. The same process (above) shall apply: one initial cadre check airman line checks another while being observed by an FAA inspector. If the airman's performance is satisfactory, the inspector may recommend that the person be removed from temporary status and approved for full-time duty as a check airman for the operator. If there is only one initial cadre check airman, then the FAA inspector shall conduct the line check.

697. APPROVAL OF A CHECK AIRMAN IN MULTIPLE AIRCRAFT. Before an airman may be approved as a check airman in more than one type of aircraft, the operator must show that there is a need. The airman must be fully qualified and current in each of the aircraft types. Overseeing inspectors shall be judicious in approving check airmen and vigilant in overseeing their performance. There are various acceptable combinations of check airman approvals.

A. A check airman may be approved to serve in all single-engine, normal or commuter category airplanes that an operator operates under FAR Part 135.

B. A check airman may be approved to serve in two different types of helicopters.

C. For FAR Part 135 operations, a check airman may be approved to serve in a combination of two of the following aircraft families:

- One series of multiengine, normal or commuter category airplanes
- Single-engine, normal or commuter category airplanes
- Helicopters

D. Before a candidate may be approved as a check airman in two commuter category aircraft types or two transport category types, Overseeing inspectors shall ensure that the following conditions are met:

- For proficiency check airman–aircraft or simulator the candidate must have logged at least 500 hours as PIC in each type
- For line check airmen the candidate must have logged at least 100 hours as PIC in each type and at least 1,000 hours as PIC in transport or commuter category airplanes
- For check flight engineer the candidate must have logged at least 500 hours as a flight engineer in each type

699. APPROVAL OF A CHECK AIRMAN FOR MULTIPLE OPERATORS. This paragraph provides a standard method for approving a check airman to serve multiple operators. The approval of a check airman to serve more than one operator is limited to those cases in which the operators' aircraft, aircraft operating manuals, procedures, and checklists are compatible in the judgment of the overseeing inspector(s). Provision for multiple check airman approvals is made for FAR Part 135 single-pilot operators, FAR Part 135 single-PIC operators, and for FAR Part 121 and FAR Part 135 operators who contract with FAA-approved training centers for training under programs that are compatible, in the judgment of the overseeing inspector(s). Overseeing inspectors may also approve a check airman to serve multiple FAR Part 121 or FAR Part 135 operators on a temporary basis, when a start-up operation is initiated or when new equipment is being introduced. Other multiple approvals may be made with the concurrence of the regional flight standards division (RFSD) when justified.

700. CHECK AIRMEN EMPLOYED BY TRAINING CENTERS. Training centers have made simulator training and checking available to a broad range of aviation users, including air carriers with smaller fleets and smaller aircraft. Check airmen (and instructors) may serve one or more air carrier operators at training centers under certain exemptions to FAR Part 121 and FAR Part 135. Rulemaking currently in progress proposes to codify the management of training centers, including check airmen at training centers, under a new FAR, Part 142. Training centers would maintain certificates, and would no longer need to operate under special exemptions. The guidance contained in this section applies to check airmen employed by training centers so long as it does not conflict with provisions of any applicable exemption or of FAR Part 142, when it is issued.

A. *TCPM Qualifies the Check Airman Candidate.* Experience has shown that the Training Center Program Manager (TCPM) is usually in the best position to make quality assessments at training centers on behalf of the Administrator. The TCPM continually assesses training programs conducted by a training center for certification of airmen under FAR Parts 61, 63, and 65. Similarly, the TCPM assesses the instructors and training center evaluators (TCE) employed by a training center. The TCPM may judge a training program, an instructor, or a TCE *qualified for* use by certificate holding air carrier operators, which may contract for services with the training center. For business reasons, some training centers maintain current lists of those programs and persons qualified by the TCPM for air carrier use.

B. *POI Approves the Check Airman Candidate.* Only the POI may approve a check airman qualified by a training center's TCPM for use in an air carrier's training program. Normal procedures apply, including a Letter of Request from the operator, and a Letter of Approval from the operator's POI.

NOTE: Check airman may currently be approved for training centers under exemptions to FAR Part 121 or FAR Part 135. Rulemaking is currently in progress to standardize the management of training centers and to regulate the use of check airmen and designated examiners working for training centers. The guidance contained in this section may be applied to check airmen employed by training centers as long as it does not conflict with the provisions of any applicable FAR or exemption, and until FAR Part 142 is published. At that time, the guidance of this section will be revised.

A. *Scheduling Multiple-Use Check Airmen and Maintaining Check Airman Status.* Before a multiple approval is made, the overseeing inspector shall ensure that the operators understand that the scheduling and use of the check airman is their responsibility. An operator entering into a multiple-use arrangement may employ a check airman on a part-time basis, may contract with another operator or training center to provide a check airman, or may contract directly with the check airman.

NOTE: Each operator shall be responsible for ensuring that the check airman maintains currency as specified in section 1 of this chapter and performs adequately when serving the operator.

B. *Adding an Operator to a Check Airman's Letter of Approval.* An operator seeking check airman approval for an individual who is serving as a check airman for another operator, shall provide the nec-

essary information to its POI. The operator's POI shall consider the means the operator will use to train, to qualify, and to maintain qualification of the check airman candidate and the documentation that will be required. The check airman may be able to meet recurrent training requirements for more than one operator simultaneously. When the operator and the POI have agreed on the training and qualification necessary for the check airman, the operator shall submit a written Letter of Request to the POI, as described earlier in this chapter. A copy of the candidate's current check airman Letter of Approval shall be attached to the Letter of Request. When the POI approves the individual as a check airman for his/her operator, a copy of the approval letter will be provided to the POI(s) of all other operators for which the individual has been approved as a check airman.

NOTE: The check airman file in the VIS is being modified to allow for a single file for each individual who has been approved as a check airman for an operator. This modification is linked to the airman's certificate number and will permit multiple entries for aircraft and operator combinations.

C. *Primary Oversight Responsibility.* Each overseeing inspector must agree on two points: (1) the means by which the check airman will maintain qualification; and (2) which inspector will have primary responsibility for oversight of the check airman. The overseeing inspector who first approves the check airman usually retains this responsibility. When the check airman is employed by a training center, the FAA training center program manager (TCPM) usually assumes this responsibility. The POI not having primary oversight responsibility may conduct surveillance activities at any time.

D. *One Letter of Approval - Revision Procedures.* A check airman may hold only one Letter of Approval as a check airman. When approved as a check airman for an additional operator, the POI of that operator shall issue a revised Letter of Approval showing the additional operator, the additional type of equipment, and the additional types of checks, as appropriate. Sample check airman Letters of Approval are shown in figures 3.3.2.3. through 3.3.2.5. The POI issuing a revised Letter of Approval shall send a copy to each operator and to each POI affected. Conversely, should any POI need to withdraw a check airman's approval, that POI shall prepare the revised Letter of Approval and mail it to each operator and to each POI affected.

E. *Recordkeeping.* Each operator is required by FAR's to maintain training and qualification records for its check airmen. By agreement, one operator or training center may keep a check airman's training and qualification records for all operators for which the check airman serves. This agreement must be acceptable to each overseeing inspector affected. Each overseeing inspector shall retain a document showing agreement in the operator's file. A copy of that document should also be provided for use by the operator.

701. CREWMEMBER FAILURE RATES. The repetitive failure of a single crewmember, or the failure of several crewmembers during proficiency or competency checks may indicate a training program deficiency. Overseeing inspectors must establish procedures with their certificate holders that provide for FAA notification when unsatisfactory performance occurs. Identified deficiencies should be promptly investigated and corrective action taken. A comparison of failure rates between checks conducted by inspectors and those conducted by check airmen should also be made. If a significant difference in failure rates exists, additional observations and counseling should be conducted. The overseeing inspector shall discuss the matter with the appropriate official responsible for the certificate holder's training and checking activities. Should these discussions not lead to an improvement in the quality of training and evaluations, consideration shall be given to withdrawing approval of any check airmen involved or, if appropriate, withdrawing approval for a specific part or for the entire training program.

703. SURVEILLANCE OF CHECK AIRMEN. Overseeing inspectors shall establish a surveillance program for each check airman at the time of approval. The POI must determine which geographic surveillance unit is to have responsibility for the check airman's surveillance program and notify that geographic unit of the check airman's approval. Notification may be accomplished by the POI sending a copy of the check airman's Letter of Approval to the geographic unit.

A. *Biennial Check Airman Observation.* FAA Notice 1800.134, "Required National Flight Standards Program Work Functions," establishes a requirement for surveillance inspection (PTRS activity code 1631) of 50% of each operator's check airman each year. The surveillance program for each office shall include a specific observation by an FAA inspector of each approved check airman in their area of responsibility at least once in every 24 months. Check airman inspections should be conducted while the check airman is conducting an approved checking activity. For example, a check airman approved to conduct proficiency checks and line checks should be observed conducting a proficiency check in the aircraft or simulator, or conducting a line check, or overseeing initial operating experience (OE).

(1) *Surveillance of Check Airmen by Geographic Units.* POI's shall monitor the activity of geographic units conducting check airman surveillance by consolidating the results, evaluating any trends, and providing the results to the operator and geographic program managers. POI's responsible for operators having 100 pilots or more shall accomplish this task semi-annually. POI's responsible for operators having more than 10 pilots, and less than 30 pilots, shall accomplish this annually. POI's of operators having 10 pilots or less shall monitor the results of the surveillance. When significant events are reported, the POI should provide feedback to the operator.

(2) *Constraints of Aircraft with Two Pilot Seats.* Inspectors may encounter difficulties in conducting the surveillance of check airmen whose activities are restricted to two-place airplanes or helicopters. In such cases, it may not be possible for an inspector to observe the check airman conducting actual checks. In lieu of these observations, the POI may review the check airman's activities and arrange for an inspector to administer the check airman's competency and line checks.

B. *Periodic Report by the Operator.* The POI should arrange to have the operator provide the POI with a periodic report of each check airman's checking activities, including a pass/fail rate, to coincide with the POI's periodic review (annual, semiannual, or other). POI's may arrange for these reports to arrive at a time that meets the POI's needs. A check airman should be active enough to retain the required knowledge and skills. This activity level may vary depending on the check airman function, the size of the operator, and the number of approved check airmen. Usually a check airman should conduct at least eight authorized check airman activities during a 12-month period (including supervision of OE). The POI should specifically re-assess the operator's need for those check airmen whose records indicate low activity levels.

C. *Withdrawing Check Airman Approval.* The POI's reasons for withdrawing the approval of a check airman may include a lack of check airman activity, a request by the operator, or an unsatisfactory performance on the part of the check airman. To withdraw approval of a check airman, the POI must notify the operator by letter that approval is withdrawn. The letter should include the name of the check airman, the effective date of withdrawal, and the reason approval is being withdrawn. If the approval of a check airman is withdrawn because of unsatisfactory performance, the letter of withdrawal must be sent to the operator by certified mail - return receipt requested.

NOTE: Under current regulations no normal term to expiration is specified for approvals of check airmen (unlike designated examiners, whose term is 12 months, per FAR Part 183).

A check airman's approval may be given, limited, or withdrawn, in the discretion of the POI.

704.–712. RESERVED

FIGURE 3.3.2.1.

CHECK AIRMAN LETTER OF APPROVAL - SAMPLE A

February 24, 1990

Mr. Sam A. Frost
Chief Pilot
Transcon Express, Inc.
48 Perimeter Rd.
Utica, OH 22032

Dear Mr. Frost:

John R. Smith, FAA certificate number 467120928, is approved as a check airman. This check airman is approved to conduct checks in the Douglas DC-9 aircraft for employees of the Transcon Express, Inc. This approval is applicable for the following checking functions:

[ ] Proficiency Check Airman - Aircraft	Effective_____
[X] Proficiency Check Airman - Simulator	Effective 8/27/89
[ ] Line Check Airman - All Seats	Effective_____
[X] Line Check Airman - Observer's Seat Only	Effective 02/20/90
[ ] Check Airman - All Checks	Effective_____
[ ] Check Flight Engineer	Effective_____

Please retain a copy of this letter in Mr. Smith's individual flight training records or database.

Sincerely,

James J. Jones
Principal Operations Inspector

FIGURE 3.3.2.1.

CHECK AIRMAN LETTER OF APPROVAL - SAMPLE A

February 24, 1990

Mr. Sam A. Frost
Chief Pilot
Transcon Express, Inc.
48 Perimeter Rd.
Utica, OH 22032

Dear Mr. Frost:

John R. Smith, FAA certificate number 467120928, is approved as a check airman. This check airman is approved to conduct checks in the Douglas DC-9 aircraft for employees of the Transcon Express, Inc. This approval is applicable for the following checking functions:

[ ] Proficiency Check Airman - Aircraft	Effective_____
[X] Proficiency Check Airman - Simulator	Effective 8/27/89
[ ] Line Check Airman - All Seats	Effective_____
[X] Line Check Airman - Observer's Seat Only	Effective 02/20/90
[ ] Check Airman - All Checks	Effective_____
[ ] Check Flight Engineer	Effective_____

Please retain a copy of this letter in Mr. Smith's individual flight training records or database.

Sincerely,

James J. Jones
Principal Operations Inspector

FIGURE 3.3.2.3.

CHECK AIRMAN LETTER OF APPROVAL

FOR MULTIPLE OPERATORS - SAMPLE A

February 24, 1990
Mr. Sam A. Frost
Chief Pilot
Trans Regional Airlines, Inc.
48 Perimeter Road
Utica, OH 22032

Dear Mr. Frost:

John R. Brown, FAA certificate number 467219028, is approved as a check airman. This check airman is approved to conduct checks in multiengine Cessna, reciprocating-series airplanes and all single-engine airplanes to pilots that are employed by:

1. Trans Regional Airlines, Inc.	Effective 02/24/90
2. Transylvania Charter Services	Effective 11/15/87

This approval is applicable for the following approved functions:

[2] Proficiency Check Airman - Aircraft	Effective_____
[ ] Proficiency Check Airman - Simulator	Effective_____
[1,2] Line Check Airman - All Seats	Effective_____
[ ] Line Check Airman - Observer's Seat Only	Effective_____
[1] Check Airman - All Checks	Effective 02/24/90

Please retain a copy of this letter in Mr. Brown's individual flight training records.

Sincerely,

James J. Jones
Principal Operations Inspector

FIGURE 3.3.2.4.

CHECK AIRMAN LETTER OF APPROVAL

FOR MULTIPLE OPERATORS - SAMPLE B

Febuary 24, 1990

Mr. Sam A. Frost
Chief Pilot
Trans Regional Airlines, Inc.
48 Perimeter Road
Utica, OH 22032

Dear Mr. Frost:

John R. Brown, FAA certificate number 467219028, an employee of High Flight Training Center has been designated as a Training Center Evaluator. Mr. Brown is approved as a check airman and is authorized to conduct checks in Cessna Citation airplanes to pilots that are employed by Trans Regional Airlines, Inc. This approval is applicable for the following functions:

[ ]	Proficiency Check Airman - Aircraft	Effective_____
[ ]	Proficiency Check Airman - Simulator	Effective_____
[ ]	Line Check Airman - All Seats	Effective_____
[ ]	Line Check Airman - Observer's Seat Only	Effective_____
[X]	Check Airman - All Checks	Effective 02/24/90

Mr. Brown is approved to conduct checks in Cessna Citation airplanes to pilots that are employed by Transylvania Charter Services. This approval is applicable to the following functions:

[ ]	Proficiency Check Airman - Aircraft,	Effective_____
[X]	Proficiency Check Airman - Simulator	Effective 01/15/90
[ ]	Line Check Airman - All Seats	Effective_____
[ ]	Line Check Airman - Observer's Seat Only	Effective_____
[ ]	Check Airman - All Checks	Effective_____

This letter is valid only during the period that a contract exists between your company and High Flight Training Center for training your flight crewmembers. Please retain a copy of this letter in Mr. Brown's individual training records and provide a copy to High Flight Training Center for their records.

Sincerely,

James J. Jones
Principal Operations Inspector

cc: Training Center Program Manager, High Flight Training Center

FIGURE 3.3.2.5.

CHECK AIRMAN APPROVAL JOB AID

1. ☐ Operator's Letter of Request contains necessary information:
   - ☐ Full name of candidate
   - ☐ Business address of candidate
   - ☐ Crew position and aircraft type
   - ☐ Type of check airman approval requested
2. ☐ Certificates (copies)
   - ☐ Applicable airman
   - ☐ Medical
   - ☐ Any valid check airman Letters of Approval
3. ☐ Training Records (copies)
   - ☐ Initial, transition, or upgrade to requested aircraft and crew position
   - ☐ Recurrent
   - ☐ Check airman
4. ☐ Resume of experience included
5. ☐ FSIS verification satisfactory
6. ☐ Check airman evaluation scheduled
7. ☐ Report of evaluation received from PTRS
8. ☐ Open VIS file

Favorable Report:

9. ☐ Prepare Letter of Approval
   - ☐ Original letter to operator
   - ☐ Copy to operator file
   - ☐ Copy to geographic unit supervisor
   - ☐ Copy to other POI (if check airman for another operator)
10. ☐ Update operator VIS file
11. ☐ Complete PTRS

Unfavorable Report

9. ☐ Prepare letter to operator indicating disapproval
10. ☐ Update operator VIS file
11. ☐ Complete PTRS

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CHAPTER 3. CHECK AIRMAN, INSTRUCTOR, AND SUPERVISOR PROGRAMS

SECTION 3. CHECK AIRMAN AND AIR TRANSPORTATION FLIGHT INSTRUCTOR TRAINING

713. GENERAL. This section provides guidance concerning the training requirements for check airmen and air transportation flight instructors.

A. *Candidates: Selection of Instructors and Nomination of Check Airmen.* The operator selects instructors and submits the selections for re view by the principal operations inspector (POI). The operator nominates check airman and submits the nominees for approval by the POI. Since the experience levels of pilots and flight engineers vary among operators, it is impractical to specify minimum experience levels for candidates. In some cases, such as cases involving new operators, candidates may have relatively little flight experience. Regardless of experience levels, however, candidates must be able to demonstrate high levels of knowledge and skill in the applicable job functions. POI's must ensure that adequate training for check airmen and air transportation flight instructors is completed and documented in the applicable records.

B. *Single Pilot-In-Command (PIC) Operators.* Operators using aircraft with a single PIC present questions about training that is not addressed in regulations. For such operators, a check airman who performs competency and line checks may qualify and maintain currency by one of three methods: (1) the check airman may receive competency and line checks from a check airman from another operator or training center approved by the operator's POI; (2) if a level B, C, or D flight simulator that replicates the aircraft being used is available and is approved for use in that operator's training program, the check airman may receive competency checks in that simulator from a check airman from another operator or training center approved by the operator's POI; or, (3) the check airman may receive competency and line checks from an Federal Aviation Administration (FAA) inspector.

715. TRAINING FOR FLIGHT INSTRUCTORS AND CHECK AIRMEN. To ensure that its flight instructor or proficiency check airmen are adequately trained, each operator's approved initial flight instructor training program and initial check airman training program shall include the training specified in Federal Aviation Regulations (FAR) §§ 121.411, 121.413 and Appendix H or FAR §§ 135.337 and 135.339, as applicable. Check airman and air transportation flight instructor candidates must satisfactorily complete the operator's approved initial, transition, or upgrade training programs for the desired aircraft and duty position. In addition, instructors must complete the operator's instructor training; check airmen must complete the operator's instructor and check airman training. Flight instructors and check airmen need not repeat curriculum segments in transition training that apply to more than one aircraft or duty position when they have completed those curriculum segments satisfactorily in previous training.

A. *Ground Training -*

- Pilot flight instructors (including flight instructors using simulators)
- Proficiency check airmen (including check airmen using simulators).
- Line check airmen.

Ground training for air transportation pilot flight instructors, pilot proficiency check airmen and line check airmen shall include the following topics:

- Fundamental principles of the teaching-learning process
- Teaching methods and procedures
- Instructor-student relationships

NOTE: FAR §§ 121.413(b) and 135.339(b) provide that these topics need not be included when the candidate holds a Flight Instructor Certificate (CFI) issued by the FAA. These regulations do not relieve the operator of the responsibility for ensuring that instructors and check airmen remain proficient in these areas.

- Regulatory and administrative functions of instructors and check airman, as appropriate

- Applicable FAR
- The operator's policies and procedures
- Methods, procedures, and techniques for conducting required checks
- Seat-dependent tasks for the specific aircraft
- Analysis of airman performance including identification of improper or insufficient training
- Crew resource management (CRM) concepts and vocabulary
- Appropriate corrective actions for unsatisfactory performance in training or evaluation
- Guidelines and safety measures for emergency situations likely to develop in conducting the required normal, abnormal, and emergency procedures in an aircraft and in a simulator, as appropriate
- The consequences of improper or untimely safety measures

B. *Flight Training -*

- Flight instructors - Aircraft - Simulators
- Proficiency check airmen - Aircraft - Simulators
- Line check airmen

Flight training shall include the following:

- Enough flight training and practice in conducting training (and flight checks for check airmen) from the left and right pilot seats using the required normal, abnormal, and emergency procedures to ensure the individual's competency in conducting the required flight training (and pilot flight checks if applicable). For an air transportation flight instructor–aircraft and a proficiency check pilot–aircraft, training and practice in the takeoff and landing events of the operator's approved training program must be conducted in an aircraft; the remainder of the training may be conducted in a simulator. For an air transportation flight instructor–simulator only and a proficiency check airman–simulator only, this training may be completed entirely in a flight simulator
- For proficiency check airmen/line check airman-aircraft training in flight in an aircraft supervising normal takeoffs and landings from either pilot seat. The operator shall ensure that the check airman candidate is thoroughly trained in second-in-command (SIC) functions and capable of accomplishing them competently while supervising and evaluating a new captain
- Guidelines and safety measures for emergency situations likely to develop in conducting the required normal, abnormal, and emergency procedures in an aircraft and in a simulator, as appropriate
- The consequences of improper or untimely safety measures

C. *Flight Training - Flight Engineer Instructors.* Flight training shall include the following:

- Enough flight training and practice to ensure the instructor's competency. Normal, abnormal, and emergency procedures shall be covered. For a flight engineer instructor - all checks, flight training may be completed entirely in a flight simulator device
- Guidelines and safety measures for emergency situations likely to develop in conducting the required normal, abnormal, and emergency procedures in an aircraft and in a simulator, as appropriate
- Consequences of improper or untimely safety measures

D. *Credit for Check Airman Training - Multiple Operators.* A POI may approve a check airman to serve more than one operator. Equivalent training completed with one operator may be credited toward the check airman training requirement for another operator, in the discretion of the POI. Creditable training may include parts of ground training and flight training. For example, a check airman might be eligible for training credit under the following conditions:

- Employed by a training center
- Regularly performing proficiency or competency checks
- Using the same procedures for all operators

When procedures, aircraft, or types of operations differ, the POI shall require that the check airman candidate (for service with an additional operator) complete appropriate additional training. Appropriate additional training shall address differences, and may comprise entire curriculum segments.

716.–726. RESERVED.

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716.–726. RESERVED.

CHAPTER 6. OPERATIONAL CONTROL

SECTION 5. FEDERAL AVIATION REGULATIONS PART 135 FLIGHT-LOCATING SYSTEMS AND OPERATING RULES

1253. GENERAL. This section contains direction and guidance to be used by inspectors concerning Federal Aviation Regulation (FAR) Part 135 flight-locating systems and operating rules. Inspectors should use this section with section 1 of this chapter when reviewing an operator's general operations manual (GOM) and when conducting inspections of FAR Part 135 operators.

1255. GENERAL REQUIREMENTS. Although FAR § 135.77 explicitly requires that each operator exercise operational control, the method by which an operator does so is not closely defined by the FAR. FAR Part 135 operations range from visual flight rules (VFR) operations in simple aircraft to extended overwater operations in highly sophisticated jet transports. FAR § 135.77 provides operators with the latitude necessary to design systems that fit the conditions surrounding the operations they conduct. Operators and principal operations inspectors (POI) must ensure, however, that each operator's system provides adequate control of the operation being conducted. Inspectors should be aware of the following requirements regarding operational functions:

A. *Formal Releases.* FAR Part 135 does not require operators to prepare a formal release authorizing a specific flight. FAR § 135.69 does require that the operator restrict or suspend operations when either the pilot-in-command (PIC) or the operator becomes aware of a hazardous condition. One acceptable means an operator may use to comply with this requirement is to use a formal release system.

B. *GOM Requirements.* The operator's GOM must contain adequate briefing and trip planning procedures to ensure that all safety requirements are fulfilled. POI's shall ensure that each operator's GOM contains detailed policies, conditions, and specific procedures for each category of employee responsible for the authorization or planning of a flight.

C. *Delegation of Authority.* FAR Part 135 operators commonly delegate the authority to PIC's for initiating flights. Such delegation has generally proven to be adequate for the operation of general purpose, single-engine and multiengine airplanes and helicopters in on-demand operations. Such systems may be inappropriate, however, for commuter operations, air ambulance services, jet transport operations, operations conducted beyond the contiguous states, extended overwater operations, and complex operations requiring extensive planning or coordination. POI's should strongly recommend that operators establish operational control systems that require the concurrence of an individual authorized to exercise operational control and the PIC for all flight release decisions. National Aeronautics and Space Administration (NASA) statistics show that police and air ambulance service operators who have adopted such systems have had significantly better safety records than operators of the same type who have not had such systems.

1257. FLIGHT-LOCATING SYSTEMS. FAR § 135.79 requires that each operator maintain a flight-locating system. The system must provide for the timely notification of an FAA facility or a search-and-rescue facility if an aircraft is overdue or missing. The operator's notification must be at least as prompt as notifications provided by FAA procedures and facilities.

A. *Flightplans Filed by PIC's.* FAR Part 135 operators may require PIC's to file and activate air traffic control (ATC) flightplans as one means of complying with FAR § 135.79. In this case, the operator's GOM must prohibit the PIC from operating without an activated flightplan until arrival at the destination airport. Operators may find that requiring the PIC to file a flightplan to satisfy the requirements of FAR § 135.79 precludes certain operations. For example, it is impractical for a PIC to conduct a flight to a non-controlled field by cancelling instrument flight rules (IFR) at the last radio navigation fix and then proceeding under VFR to destination on a VFR flightplan. ATC does not accept composite IFR/VFR flightplans. Normally, ATC will not activate a VFR flight on an air traffic control frequency. A PIC who cancels IFR and then changes to a flight-watch frequency to activate a VFR flightplan is not in compliance with FAR § 135.79. One acceptable means an operator may use to comply with FAR § 135.79 is to require the PIC to telephone the person exercising

operational control upon arrival at a destination not served by an ATC facility.

B. *Procedures in Lieu of Flightplans.* When an FAA flightplan is not filed, operators must have established procedures for following and locating each flight. The individual authorized to conduct operational control must be provided with at least the information required in a VFR flightplan.

C. *Flight-Locating Information When Radio Contact Cannot Be Maintained.* FAR Part 135 operators are not required to maintain the capability to contact flights while they are airborne. When operations are conducted in an area in which radio contact cannot be maintained with ATC, the individual authorized to exercise operational control must be provided with the location, date, and estimated time at which the PIC will re-establish radio or telephone communications. Flight-locating information must be retained at the operator's principal base of operations, or at other places designated by the operator, until the completion of the flight. Operators should maintain sufficient records to show compliance with these requirements.

D. *Flight Followers.* FAR Part 135 does not specify the qualifications or titles of individuals authorized to authorize or follow flights. FAR § 135.77 does, however, require the operator to list the name of each individual authorized to perform these duties in the GOM.

E. *Contractors.* FAR Part 135 operators may contract with other operators or organizations to perform direct operational control functions. The operator remains fully responsible for ensuring that the operations conducted comply with the FAR, the operator's GOM, and with safe operating practices. The name of each employee of the contractor authorized to perform operational control functions for the operator must be placed in the operator's GOM.

F. *Training.* Operators are responsible for ensuring that individuals authorized to exercise operational control are adequately trained to perform their assigned duties. One acceptable means an operator may use to meet this requirement is to establish a training and qualification program such as that described in chapter 5 of this volume.

NOTE: Individuals exercising operational control must be knowledgeable of, and have access to, appropriate sections of the operator's GOM while performing their assigned duties.

1259. FAR PART 135 FUEL-PLANNING REQUIREMENTS. The fuel-planning requirements of FAR Parts 91 and 135 are based on IFR and VFR Class I navigation within the contiguous states. Other types of operations or operations outside of the contiguous states may require additional or special planning.

A. *VFR Operations in Airplanes.* FAR § 135.209(a) prohibits takeoff in an airplane under VFR rules unless the airplane has enough fuel to fly to the airport of first intended landing. Thereafter the airplane must have enough fuel (computed at normal cruise) to either fly for 30 minutes during the day or for 45 minutes at night.

B. *VFR Operations in Helicopters.* FAR § 135.209(b) prohibits takeoff in a helicopter under VFR rules unless the helicopter has enough fuel to fly to the airport of first intended landing, and then to fly for 20 minutes at normal cruising fuel consumption.

C. *IFR Operations in Airplanes.* FAR § 135.223 prohibits takeoff in an airplane in IFR conditions unless the airplane has enough fuel to complete the flight to the airport of first intended landing. Thereafter, the airplane must have enough fuel to fly to the alternate airport, and then to fly for 45 minutes at normal cruise fuel consumption.

D. *IFR Operations in Helicopters.* FAR § 135.223 prohibits takeoff in a helicopter in IFR conditions unless the helicopter has enough fuel to complete the flight to the airport of first intended landing. Thereafter, the helicopter must have enough fuel to fly to the designated alternate airport, and then to fly for 30 minutes at normal cruise fuel consumption.

E. *Contingency Fuel.* FAR Part 135 does not specifically require a specific increment of contingency fuel. FAR § 91.103, however, does require that such contingencies be considered in preflight planning. Therefore, an increment of fuel to compensate for foreseeable contingencies must be on board for takeoff. One such contingency would be a delay in receiving takeoff clearance at major terminals. The operator's GOM should contain specific policies and instructions for computing the amount of contingency fuel to be carried under the circumstances likely to be encountered in the operator's specific operation.

F. *En Route Requirements.* The fuel planning requirements discussed in subparagraphs A through E apply for takeoff. FAR Part 135 does not specify the action the PIC must take if an alternate airport goes below minimums when the flight is en route, or how much fuel must be on board when the flight arrives overhead a destination or alternate airport. FAR § 135.69(b) allows a PIC to continue toward a destination when a hazard to safe operations may reasonably be expected to be corrected before arrival. FAR § 135.69(b) does prohibit a PIC from continu-

ing a flight toward a destination, however, when the operator or the PIC knows of conditions that make continuation of the flight hazardous. The operator's GOM should contain specific policies and instructions on how the PIC is to proceed in foreseeable circumstances that may be encountered in the operator's specific operation.

1261. WEATHER REQUIREMENTS. FAR § 135.213 requires that weather reports and forecasts used in FAR Part 135 operations be prepared by the National Weather Service (NWS), a source approved by the NWS, or a source approved by the FAA (see section 1 of this chapter). Inspectors should ensure that FAR Part 135 operators are conducting operations in compliance with FAR weather provisions, as follows:

A. *VFR Operations.* A flight may not depart under VFR rules unless the ceiling and visibility en route are forecast to be above the applicable VFR minimums until the aircraft arrives at the destination airport.

(1) All available reports and forecasts must show that the flight can be completed in visual meteorological conditions. Available reports include pilot reports (PIREP's), which must be obtained and used when available.

(2) When there is no information available from an approved source, FAR § 135.213(a) authorizes PIC's to use their own observations or those of another competent person for operations under VFR. This authority is limited to only those situations in which a report from an approved source is not available. For example, these procedures might be appropriate for floatplane operations at remote lakes where no weather observer is stationed. This provision does not relieve PIC's and operational control personnel from obtaining and using the information that is available, such as area forecasts and PIREP's.

(3) The operator's GOM must specify the circumstances under which PIC's may use the provision of FAR § 135.213(a). If observers other than PIC's are used, operators must specify the training and qualifications of these observers.

B. *Point of Departure - IFR Operations.* A flight may not be originated when the weather at the departure point is below that specified in paragraph C57 or paragraph H106 of the operator's operations specifications.

(1) Takeoff weather minimums may be below the authorized landing minimums. For takeoff in such conditions, an alternate airport must be available within 1 hour of flying time from the departure airport at normal cruise speed.

(2) Operators may be authorized to use "lower-than-standard" takeoff minimums by paragraph C57(e)(1) of the operations specifications. POI's, operators, and PIC's must be aware of the limitations associated with this authority. The operator must have an approved "lower-than-standard takeoff" training program and qualification module. The PIC (and second-in-command (SIC), when applicable) must have satisfactorily demonstrated competency on their last competency check (FAR § 135.293) or instrument proficiency check (FAR § 135.297). A single pilot may not conduct lower-than-standard takeoffs in weather conditions below Category I (CAT I) landing minimums.

C. *Destination Weather - IFR.* A flight may not depart under IFR or over-the-top rules unless appropriate weather reports or forecasts indicate that conditions will be at or above the minimums required by the operations specifications at the destination airport at the estimated time of arrival (ETA). The reports or forecasts used must be the most currently available at the time of takeoff. CAT I weather minimums are contained in paragraphs C53, C54, and H103 of the operations specifications. CAT II and CAT III minimums are listed in paragraphs C59, C60, H108, and H109.

D. *Designation of Alternate Airports.* FAR § 135.223 specifies when an alternate airport is required for IFR operations or over-the-top operations. An alternate airport does not have to be designated when, for at least 1 hour before and 1 hour after the ETA at the destination airport, the appropriate weather reports or forecasts (or any combination of them), show the ceiling will be as follows:

(1) At least 1,500 feet above the lowest circling MDA, if a circling approach is authorized for the airport; or

(2) If a circling approach is not authorized, at least 1,500 feet above the lowest published instrument approach minimum or 2,000 feet above the airport elevation, whichever is greater; and

(3) The visibility at that airport will be at least 3 miles, or 2 miles more than the lowest applicable visibility minimums, whichever is greater, for the instrument approach procedures to be used.

E. *Alternate Airport Weather.* The forecast weather at the designated alternate airport must exceed the requirements of the table in either paragraph C55 or paragraph H105 of the operations specifications, as applicable.

1263. IFR PASSENGER-CARRYING, OVER-THE-TOP OPERATIONS. FAR Part 135 contains a set of rules that limit IFR passenger-carrying, over-the-top flights. These limitations do not apply to cargo-only FAR Part 135 flights.

A. *Operation of Single-Engine Airplane and Helicopter Operations in IFR Conditions.* In general, FAR § 135.181 prohibits the operation of single-engine aircraft (either airplanes or helicopters) while carrying passengers in IFR conditions. FAR § 135.181(c)(2) only allows the following limited exceptions:

(1) A flight may depart in IFR conditions if VFR conditions can be reached within 15 minutes of departure. The flight may climb through an overcast to reach VFR on top conditions.

(2) An aircraft may be operated in IFR conditions and conduct an instrument approach when unforecasted IFR conditions are encountered and it is more prudent to continue in IFR conditions rather than remain in VFR conditions. POI's shall investigate reports of these incidents to ensure that IFR operations were more prudent.

NOTE: FAR § 135.181 does not prohibit a pilot from operating an aircraft in VFR conditions on an IFR clearance. An aircraft must be IFR-equipped and the pilot or pilots must be qualified according to FAR Part 135 before an IFR clearance may be requested or IFR weather conditions are entered.

B. *Operation of Single-Engine Aircraft in Over-The-Top Operations.* FAR § 135.181 prohibits the operation of single- engine aircraft (airplanes and helicopters) in over-the-top operations unless the following conditions can be met:

(1) The flight may be planned to climb to VFR over-the-top conditions as described in previous subparagraph A.

(2) If a ceiling exists, VFR conditions must be forecast to exist under the ceiling along the planned route from the time the flight begins operating over-the-top until 1 hour after the flight is estimated to reach the destination.

(3) At all points along the route, upon reaching destination, and for 1 hour thereafter, the forecast must show that the flight will be able to descend in VFR conditions (clear of clouds), should an engine fail.

C. *Operation of Multiengine Aircraft in IFR, Over-The-Top, Passenger-Carrying Operations.* A multiengine aircraft (airplane or helicopter) may be released for IFR or VFR over-the-top, passenger–carrying operations under the following circumstances:

(1) The flight may be operated under the conditions described in subparagraphs A and B, or;

(2) The operator may limit the takeoff weight so that the aircraft can climb at 50 feet per minute at the MEA of the route to be flown or at 5,000 feet MSL, whichever is higher, with the critical engine inoperative. Passenger-carrying, multiengine helicopters flying offshore may be started when the helicopter can climb at 50 feet per minute at the MEA or at 1,500 feet MSL, whichever is higher, with the critical engine inoperative.

(3) A flight may start when weather forecasts and reports indicate that the flight will be able to operate in VFR conditions until it reaches the destination and then descend in VFR conditions to beneath the ceiling. Conditions at the destination must allow a VFR descent for the period of the ETA to 1 hour after ETA. While operating over-the-top, the flight must be able to comply with subparagraphs (1) or (2).

(4) A flight may start when it can be operated clear of the clouds until it reaches the final approach fix at the initial approach altitude under VFR conditions and then conduct an instrument approach.

1265. OVERWATER, PASSENGER-CARRYING OPERATIONS. Except for takeoffs, landings, and operations within gliding distance of land, all passenger-carrying flights operated over water must be operated as follows:

A. *Airplanes.* Operators must limit the takeoff weight of an airplane so that it can climb at 50 feet per minute at an altitude of 1,000 feet above the surface with the critical engine inoperative.

B. *Helicopters.* Helicopters must be equipped with flotation devices.

1267. FAR PART 135 EXTENDED OVERWATER OPERATIONS. Although FAR Part 135 does not specifically address the requirements for extended overwater operations, FAR § 135.21(a) requires that each operator develop a manual establishing the policies and procedures for operations that are acceptable to the FAA Administrator. One means, but not the only means, that a FAR Part 135 operator may use to develop acceptable extended overwater operations procedures is to show compliance with those portions of FAR Part 121 that correspond to the operation conducted.

A. *Flight Planning and Navigation.* Flight planning and navigational requirements do not differ from

those of FAR Part 121 operators conducting operations in the same airspace (see sections 1 and 4 of this chapter and section 8 of chapter 8 in this volume).

B. *Fuel Planning.* The operator must provide adequate procedures for compensating with the limitations of forecast winds. One acceptable means an operator may use is to comply with the requirements of FAR § 121.641 for reciprocating or turbopropeller aircraft and with the requirements of FAR § 121.645 for turbojet aircraft. These FAR provide for appropriate en route reserves.

C. *Engine-Out En Route Performance Limits.* The operator must develop procedures to comply with the engine-out performance limitations of FAR Part 135, Subpart I. The operator's analysis must show compliance at the most critical point on the route. Under most conditions, engine-out operations require driftdown procedures. Inspectors must ensure that the operator's analysis considers how oxygen and aircraft systems are affected by engine loss (see volume 4, section 3).

1268. - 1400. RESERVED.

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1268. - 1400. RESERVED.

CHAPTER 10. EMERGENCY EVACUATION AND DITCHING DEMONSTRATIONS

SECTION 2. THE ABORTED TAKEOFF EMERGENCY EVACUATION DEMONSTRATION

1693. THE ABORTED TAKEOFF DEMONSTRATION: PHASE ONE.

A. The regulatory requirements previously outlined in this chapter identify the three occasions when a Federal Aviation Regulation (FAR) Part 121 operator must conduct an emergency evacuation demonstration. An emergency evacuation demonstration is required when the operator proposes to operate a specific airplane type and model:

- For the first time (either a new or existing operator)
- When there is a "significant change" in the number of flight attendants, their seating location, their evacuation duties, or emergency procedures (as determined by the principal operation inspector (POI))
- When there is a change in the number, location, type of emergency exits, or type of opening mechanism on the emergency exits used for aircraft evacuation (as determined by the Director of Flight Standards (AFS-1))

NOTE: If an operator proposes to conduct operations with an aircraft configured with less than 44 seats (even though the aircraft may have been previously type–certificated with more than 44 seats) neither a full-scale nor a partial demonstration is required.

B. When an operator's situation meets one or more of these conditions, the principal inspector (or CPM) must determine the requirement for either a full-scale or a partial aborted takeoff evacuation demonstration.

(1) A full-scale demonstration is required in the following situations:

- When the airplane type and model and its proposed full passenger seating capacity has not been previously demonstrated by another U.S. operator (in accordance with FAR § 121.291(a) in effect on October 24, 1967) or by a U.S. or foreign manufacturer (in accordance with FAR § 25.803 in effect on December 1, 1978 and FAR § 121.291(a))
- When an airplane has undergone a change in its exit configuration and/or design (as determined by AFS-1)

(2) A partial demonstration is required in the following situations:

- When an airplane (new to an operator) has previously had a full-scale demonstration, conducted by a FAR Part 121 operator or manufacturer, for the maximum seating configuration to be used by the operator acquiring the airplane
- When the operator is undergoing original certification
- If the POI determines that a change has occurred in the number of flight attendants, their location, or their duties and emergency procedures
- If AFS-1 determines a change has occurred in seating configuration, exits, or some other material alteration of the airplane's original design that would require a partial demonstration

C. The most commonly performed demonstration is the partial aborted takeoff emergency evacuation demonstration. The general criteria (with the exception of the 15 second time limit and passenger participants) is similar to the full-scale aborted takeoff demonstration. For the purposes of this handbook, the discussion of the partial and full-scale evacuation demonstration process is combined into one section. Additional requirements, exclusively imposed by the full-scale evacuation demonstration, are shown in an appropriately titled box as in the following illustration.

FULL—SCALE DEMONSTRATION
_____
_____
_____
_____

1695. BRIEFING THE OPERATOR ON DEMONSTRATION REQUIREMENTS. After the principal inspectors (certification project manager (CPM) if applicable) determine whether a partial or full-scale demonstration is required, the operator must develop a plan outlining the manner in which the demonstration is to be conducted. Federal Aviation Administration (FAA) inspectors must meet with the operator as often as necessary to ensure the operator clearly understands which documents and information are required for the plan to be accepted for evaluation. The operator shall be given the following information in addition to the specific information described in paragraph 1697 of this section.

FULL-SCALE DEMONSTRATION

A. In a full-scale aborted takeoff emergency evacuation demonstration, the operator must assemble a representative passenger complement in accordance with FAR Part 121, Appendix D(a)(7). The operator must ensure the passenger participants meet the following criteria before conducting the demonstration. If passenger participants do not meet the criteria, the operator shall be required to repeat the demonstration.

(1) They must be representative of a normal passenger complement as outlined in the following table.

Passengers	Age	Percentage of Full Seating Capacity
Adult Females	12-50	40% minimum
Adult Males	12-50	60% maximum
Adult Males and Females (Proportionate mix)	over 50	35% minimum of which at least 15% must be female.
Life-sized dolls	—	3

(2) The "life-sized dolls" referred to above must be carried by passengers to simulate infants 2 years or younger.

(3) None of the passengers may be crewmembers, mechanics, or training personnel who maintain or operate the airplane.

(4) No employee of certificate holder or manufacturer may be seated next to an exit.

(5) It may not always be possible to have children between the ages of 3 through 11 participating in a full-scale evacuation demonstration due to child labor laws in force in certain localities. In these situations a proportionate mix of the overall passenger complement may be substituted.

B. The operator may not practice, rehearse, or describe the demonstration for the passengers nor may any participant have taken part in this type of demonstration within the preceding six months.

C. Company officials, such as directors of operations and maintenance, must be available at the site for either a full-scale or partial demonstration. These individuals must have authority to direct modifications to the emergency evacuation demonstration plan at the time of the demonstration. Additionally, they must be able to respond to FAA requirements for specific corrective actions due to deficiencies which occur during the demonstration. Other company personnel present at the demonstration site should have a direct role in conducting the demonstration. The company should be informed that, although other company personnel may observe the demonstration, it is the company's responsibility to ensure that these persons do not pose a distraction or affect the demonstration's outcome.

FULL—SCALE DEMONSTRATION

D. The company should provide safety personnel at strategic locations around the aircraft to protect passenger participant evacuees in a full-scale evacuation demonstration. Safety personnel shall not provide any assistance to crewmembers such as positioning slides, assisting evacuees through exits, or in any manner that contributes to the efficiency of the evacuation. Safety personnel are used only to ensure passengers are not injured from accidents such as slipping off wings or falling from exits.

E. Non-company personnel, who are not FAA personnel, must have specific reasons to observe the emergency evacuation demonstration. Usually, these individuals will be representatives of the aircraft manufacturer, manufacturers of other items of equipment used during the demonstration, or other such organizations which have a direct interest in aviation safety.

F. The flight attendant complement must consist of the minimum number of flight attendants which the operator proposes to use on the airplane during FAR Part 121 operations, and in no case shall the minimum number be less than that specified in FAR § 121.391.

G. The airplane must be positioned in a normal ground attitude and configured for takeoff. Each passenger compartment door or curtain must be positioned as it would be for a normal takeoff.

1697. THE OPERATOR'S PLAN. FAR § 121.291(c)(2) requires the operator to obtain FAA approval before conducting the emergency evacuation demonstration (full-scale or partial). The operator should submit the plan as far in advance as possible. However, FAA policy is that the plan be submitted at least 30 working days in advance of a full-scale demonstration and 15 working days in advance of a partial demonstration. The operator's plan shall contain the following information:

A. A letter of request which states the following:

(1) The applicable regulation (FAR § 121.291(a) or (b)), which requires a full-scale or partial emergency evacuation demonstration be conducted.

(2) The airplane type and model and full seating capacity (including crewmembers) to be demonstrated.

NOTE: Section 7 lists the maximum seating capacity previously demonstrated for air transport category airplanes used in FAR Part 121 operations.

(3) The number of flight attendants and their duty assignment positions to be used during the demonstration.

(4) The proposed date, time, and location of the evacuation demonstration.

(5) The name and telephone number of the company's evacuation demonstration coordinator (spokesman).

FULL—SCALE DEMONSTRATION

(6) For a full-scale demonstration, a statement that the representative passenger complement will meet the requirements set forth in Far Part 121, Appendix D, (a)(7). (See paragraph 995.A.)

(7) A clear description of how the operator proposes to initiate the demonstration, the signal to be used for the purpose of timing, and how the operator intends to block exits which are not to be used, must also be in the plan. The operator must understand that the signal has to be given to both cabin and ground personnel simultaneously to initiate the demonstration. It should be emphasized that the operator is responsible for developing the initiation procedure and the method for blocking exits. The team leader will thoroughly review this procedure for adequacy.

B. A diagram, representative of the airplane to be demonstrated, which includes the following:

(1) The location and designation of all exits by type and the designated exit pairs.

(2) The assigned seating location of each required crewmember during takeoff.

(3) The interior cabin configuration showing the location of each passenger seat, the galleys, aisles, lavatories, and passenger compartment partitions and bulkheads.

(4) The location and type of emergency equipment on the aircraft including:

- Fire extinguishers
- Portable oxygen bottles/masks
- Megaphones
- Crash axes
- Emergency ropes/tapes
- Liferafts/sliderafts
- Individual floatation devices or life preservers
- First aid and medical kits

C. Copies of the appropriate crewmember manual pages describing emergency evacuation duties and responsibilities.

D. A copy of the passenger information card which will be used on the aircraft during revenue operations.

E. A description of the emergency equipment installed on the aircraft including at least the type and model of each item of equipment, as applicable.

F. A list of crewmembers (both flight deck and cabin), who are or will be qualified to participate in the demonstration must be in the operator's plan. The flightcrew must be qualified in the aircraft to be used, however, the initial operating experience requirement need not be completed. Flight attendant personnel (in accordance with FAR § 121.291(c)(3)) must have completed an FAA-approved training program and passed a written or practical examination on the type aircraft, emergency equipment, and procedures. Flight attendants designated by the FAA to participate in the demonstration shall not be provided emergency training or aircraft emergency equipment familiarization more than that specified in the operator's approved training program before the demonstration.

NOTE: The flight crew must take no active role in assisting others inside the cabin during the demonstration.

G. A description must be in the plan of how the operator will ensure the demonstration is conducted in the "dark of the night," or in conditions which simulate the "dark of the night." The regulations do not define "dark of the night." For the purpose of emergency evacuation demonstrations, "dark of the night" shall mean a level of illumination that approximates the natural illumination that occurs 90 minutes after official sunset under clear sky conditions. This lower level of illumination is needed to properly evaluate the airplane's emergency lighting system and passenger and crewmember performance in darkened conditions. Levels of illumination significantly darker can interfere with a proper evaluation of the demonstration. Therefore, this approximate level of illumination should be maintained by natural or artificial means. The most effective way of controlling the level of illumination is to conduct the demonstration in a darkened hangar. FAR Part 121, Appendix D, (a)(1), specifies that the full evacuation demonstration shall be conducted during the "dark of night." Although FAR § 121.291(c) stipulates criteria for the "partial" demonstration, it does not specifically require "dark of the night" conditions. It is FAA policy that such conditions are required for evaluating the aircraft's emergency lighting system and the performance of the crewmembers in a darkened environment.

H. A description of how the operator plans to ensure that the airplane is positioned in a location, either indoors or outdoors, which will allow the unobstructed deployment of all emergency evacuation slides or sliderafts, as applicable

1699. THE ABORTED TAKEOFF DEMONSTRATION: PHASE TWO. When the operator's emergency evacuation demonstration plan is submitted, the principal inspectors or the certification team, if applicable, must make a cursory review of the submission to ensure all the required information and documents discussed in phase one are included. While a thorough analysis of the submission is conducted during phase three, in phase two the FAA should respond to the operator's plan in a timely manner. Minor omissions or deficiencies can often be

resolved by contacting the company's evacuation demonstration coordinator. If discrepancies can be resolved quickly, the process moves to phase three. If the operator's plan has a significant number of required items or documents missing or is obviously incomplete, the entire submission must be returned to the operator with a written explanation of why it is unacceptable. The operator shall be advised that the FAA will take no further action until an acceptable plan is submitted.

1701. THE ABORTED TAKEOFF DEMONSTRATION: PHASE THREE. During phase three the principal inspectors, or the certification team, if applicable, conduct a thorough analysis and evaluation of the operator's plan.

A. The principal inspectors (or CPM, if applicable) must ensure that the information in or attached to the operator's letter of request is acceptable and consistent with the proposed type of demonstration. During this analysis and review the POI shall ensure the following:

- The operator's emergency training program has been FAA-approved
- Evacuation procedures in the operator's manuals, including individual crewmember assignments, are realistic, can be practically accomplished, and comply with FAR § 121.397(a) and (b)
- The passenger information card is understandable and consistent with the type and model of airplane to be demonstrated. Guidance is provided in AC 121-24A, "Passenger Safety Information Briefing and Briefing Cards"
- The emergency equipment is acceptable for the type of operation proposed

B. Certain items in the proposal may require on-site evaluations. For example, the hangar or ramp area the operator intends to use for the demonstration should be inspected for its adequacy. The inspector should determine that the operator has, or is making provisions for participant safety during the demonstration including the use of safety observers, stands, padding, mats, and any other appropriate safety measures.

C. Deficiencies noted during this analysis and review must be resolved with the company's evacuation demonstration coordinator. If major discrepancies surface during the FAA evaluation or if the FAA and the operator are unable to resolve significant issues, the operator's plan must be returned with a letter explaining why it is being returned. The operator shall be informed that the discrepancies outlined in the letter must be corrected and a plan resubmitted before the FAA takes further action. If, after a detailed evaluation, the submission is found acceptable, the operator shall be notified that it has been accepted by the FAA.

1703. THE ABORTED TAKEOFF DEMONSTRATION: PHASE FOUR. During phase four, the FAA plans, observes, and evaluates the operator's aborted takeoff emergency evacuation demonstration. The planning segment of this phase is particularly important and normally requires thorough coordination and clear instruction and guidance for both the FAA and company participants to ensure that the demonstration is conducted and evaluated objectively. Specific guidance and instruction for planning and conducting the full-scale and partial aborted takeoff evacuation demonstrations are in section 3.

1705. THE ABORTED TAKEOFF DEMONSTRATION: PHASE FIVE. Upon successful completion of an aborted takeoff emergency evacuation demonstration, the operator shall be immediately notified at the site of the demonstration. The results of the demonstration are reported as specified in section 6. The maximum demonstrated passenger seating capacity and the minimum required number of flight attendants for that airplane type and model must be listed and approved in Part A, paragraph A3 of the operations specifications.

1706.–1710. RESERVED.

resolved by contacting the company's evacuation demonstration coordinator. If discrepancies can be resolved quickly, the process moves to phase three. If the operator's plan has a significant number of required items or documents missing or is obviously incomplete, the entire submission must be returned to the operator with a written explanation of why it is unacceptable. The operator shall be advised that the FAA will take no further action until an acceptable plan is submitted.

1701. THE ABORTED TAKEOFF DEMONSTRATION: PHASE THREE. During phase three the principal inspectors, or the certification team, if applicable, conduct a thorough analysis and evaluation of the operator's plan.

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- The operator's emergency training program has been FAA-approved
- Evacuation procedures in the operator's manuals, including individual crewmember assignments, are realistic, can be practically accomplished, and comply with FAR § 121.397(a) and (b)
- The passenger information card is understandable and consistent with the type and model of airplane to be demonstrated. Guidance is provided in AC 121-24A, "Passenger Safety Information Briefing and Briefing Cards"
- The emergency equipment is acceptable for the type of operation proposed

B. Certain items in the proposal may require on-site evaluations. For example, the hangar or ramp area the operator intends to use for the demonstration should be inspected for its adequacy. The inspector should determine that the operator has, or is making provisions for participant safety during the demonstration including the use of safety observers, stands, padding, mats, and any other appropriate safety measures.

C. Deficiencies noted during this analysis and review must be resolved with the company's evacuation demonstration coordinator. If major discrepancies surface during the FAA evaluation or if the FAA and the operator are unable to resolve significant issues, the operator's plan must be returned with a letter explaining why it is being returned. The operator shall be informed that the discrepancies outlined in the letter must be corrected and a plan resubmitted before the FAA takes further action. If, after a detailed evaluation, the submission is found acceptable, the operator shall be notified that it has been accepted by the FAA.

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1705. THE ABORTED TAKEOFF DEMONSTRATION: PHASE FIVE. Upon successful completion of an aborted takeoff emergency evacuation demonstration, the operator shall be immediately notified at the site of the demonstration. The results of the demonstration are reported as specified in section 6. The maximum demonstrated passenger seating capacity and the minimum required number of flight attendants for that airplane type and model must be listed and approved in Part A, paragraph A3 of the operations specifications.

1706.–1710. RESERVED.

TABLE 3.10.7.1. MAXIMUM APPROVED PASSENGER SEATING CAPACITY FOR TRANSPORT CATEGORY AIRPLANES TYPICALLY USED IN AIR CARRIER SERVICE

AIRPLANE MANUFACTURER AND MODEL	PAX[1] CAP.	EXIT CONFIGURATION	METHOD[2] OF COMPLIANCE	NOTES ON[3] SPECIAL FEATURES
AEROSPATIALE				
ATR 42	60*	Data to be added at next revision	Demo	
ATR 42	34*	Data to be added at next revision	Demo	In combi configuration
ATR 72	66		Full Scale Demo and (As indicated on U.S. Type Data Sheet)	
AIRBUS				
A300	345*	Three pair Type A and one pair Type I exits	Analysis	Dual aisle interior configuration
A310	265	Two pair Type A and one pair Type I exits	Demo	Dual aisle interior configuration
A320	179	Two pair Type I and two pair Type III doors	Demo	
A340-200	375	Three pair Type A and one pair of Type I exit **OR** four pair Type A exits	Analysis	
BOEING				
707-100	189*	Two pair Type I and two pair Type III exits	Refer to Footnote [2]	
707-300	189*	Two pair Type I and two pair Type III exits	Refer to Footnote [2]	
720-048	149*	Two pair Type I and one pair Type III exits	Refer to Footnote [2]	
727-100	119	One pair Type I, one pair Type III, and one pair Type IV exits	Refer to Footnote [2]	
727-100	129*	One pair Type I, one pair Type III, one pair Type IV exits and ventral stair with emergency extension system	Refer to Footnote [2]	

* [1, 2, 3] Refer to footnotes at end of table

TABLE 3.10.7.1. MAXIMUM APPROVED PASSENGER SEATING CAPACITY FOR TRANSPORT CATEGORY AIRPLANES TYPICALLY USED IN AIR CARRIER SERVICE—Continued

AIRPLANE MANUFACTURER AND MODEL	PAX[1] CAP.	EXIT CONFIGURATION	METHOD[2] OF COMPLIANCE	NOTES ON[3] SPECIAL FEATURES
BOEING (Continued)				
727-200	189*	Two pair Type I and two pair Type III exits	Analysis	Analysis is based on previous demonstrations and analyzed to 189
737-100	124	Two pair Type I and one pair Type III exits	Analysis	Analysis based on 737-200 demo, and reconfirmed by 737-300 demo
737-200	136	Two pair Type I and one pair Type III exits	Analysis	Analysis based on evacuation of 130 passengers plus 5% and reconfirmed by 737-300 demo
737-300	149*	Two pair Type I and one pair Type III exits	Demo	
737-400	188	Two pair Type I and one pair Type III exits	Demo	
737-500	140	Two pair Type I and one pair Type III exits	Analysis	
747-100, -200,SR	550*	Five pair Type A exits	Analysis	Dual aisle interior configuration, analysis based on demonstration
747SP	400	Four pair Type A exits	Analysis	Dual aisle interior configuration

The upper deck capacities for the 747-100, -200, SR, and SP airplanes are listed below. These capacities are not in addition to that of the main deck; they represent that portion of the main deck capacity that can occupy the upper deck during takeoff and landing.

	8*	One exit and slide	Demo	Circular or straight stair
	116*	One exit and improved slide	Demo	Circular or straight stair

* 1, 2, 3 Refer to footnotes at end of table

TABLE 3.10.7.1. MAXIMUM APPROVED PASSENGER SEATING CAPACITY FOR TRANSPORT CATEGORY AIRPLANES TYPICALLY USED IN AIR CARRIER SERVICE—Continued

AIRPLANE MANUFACTURER AND MODEL	PAX[1] CAP.	EXIT CONFIGURATION	METHOD[2] OF COMPLIANCE	NOTES ON[3] SPECIAL FEATURES
BOEING (Continued)	24*	One exit and slide 25 knot	Analysis	Straight stair
	32*	Two Type I exits and 25 knots slides	Analysis	Special Condition 25-61-NW-1 contains additional requirement. Contact the Seattle Aircraft Certification Office (SACO) for information on these requirements
	45*	Two Type I exits and 25 knot slides	Analysis	Special Condition 25-71-NW-3 contains additional requirements that must be complied with. Contact the SACO for information on these requirements
747-300, -400	Main Deck 550*	Five pair Type A exits	Analysis	
	Upper Deck 110*	One pair Type I exit	Analysis	Upper deck capacity is in addition to the main deck capacity
747-400 Combi				As per approved delivery configuration

747 CARGO AIRPLANES

The upper deck capacities for the 747 cargo airplanes are as follows:

	3*	Cockpit hatch and sufficient descent reels for crew	Analysis	Crew members only
	8*	Cockpit hatch with descent reels and one exit with slide	Analysis	3 crew plus 5 persons per Exemption 1870 B (Issued by the Office of Flight Standards)
	19*	Two exits with 25 knot slides	Analysis	3 crew plus 19 passengers, and 1 flight attendant
	19*	Cockpit hatch with descent reels and two exits with 25 knot slides	Analysis	3 crew plus 19 persons (ref. FAR 121.583 except para. (8)), and 1 flight attendant
757-200	219*	Four pair Type I exits	Demo	

* 1, 2, 3 Refer to footnotes at end of table

TABLE 3.10.7.1. MAXIMUM APPROVED PASSENGER SEATING CAPACITY FOR TRANSPORT CATEGORY AIRPLANES TYPICALLY USED IN AIR CARRIER SERVICE—Continued

AIRPLANE MANUFACTURER AND MODEL	PAX[1] CAP.	EXIT CONFIGURATION	METHOD[2] OF COMPLIANCE	NOTES ON[3] SPECIAL FEATURES
BOEING (Continued)	224*	Three pair Type I and two pair Type III exits	Demo	
	239*	Three pair Type I and one pair improved Type I exits	Analysis	An improved Type I exit is known as a Type "B"
767-200	255*	Two pair Type A and one pair Type III exits	Demo	Dual aisle interior configuration
767-200, -300	290*	Two pair Type A and two pair Type III exits	Analysis	Dual aisle interior configuration
BRITISH AEROSPACE CORPORATION				
HS-748	52	Data to be added at next revision		
BAC-111	79	Data to be added at next revision		
BAC-111	89	One pair Type I and one pair Type III exits and verbal stair exit shown in BAC Mod. No. 52-PM2508		Data to be added at next revision
BAE-146-100	90	Two pair Type I exits	Demo	Maximum seating capacity of 109 approved for -100 and -200 with two pairs of type I exits by Exemption 3639
BAE-146-200, -300	108	Two pair Type I exits	Demo	
CANADAIR CL-600-2B19 (Regional Jet)	50	One pair Type I and One pair Type III exits	Demo	Demo performed with one flight attendant
CARAVELLE				
S210	90	Other data not appropriate due to age of airplane		
CONVAIR				
CV440	54	Other data not appropriate due to age of airplane		
CV580	59	Other data not appropriate due to age of airplane		
CV880	119	Other data not appropriate due to age of airplane		
CV990	149	Other data not appropriate due to age of airplane		

* 1, 2, 3 Refer to footnotes at end of table

TABLE 3.10.7.1. MAXIMUM APPROVED PASSENGER SEATING CAPACITY FOR TRANSPORT CATEGORY AIRPLANES TYPICALLY USED IN AIR CARRIER SERVICE—Continued

AIRPLANE MANUFACTURER AND MODEL	PAX[1] CAP.	EXIT CONFIGURATION	METHOD[2] OF COMPLIANCE	NOTES ON[3] SPECIAL FEATURES
DEHAVILLAND				
DHC-7-100, -102	54	Data to be added at next revision		
DHC-7-101, -103	50	Data to be added at next revision		In combi configuration
FAIRCHILD F227	48	Data to be added at next revision		
FOKKER				
F.27 mk. 100, 200, 300, 400, 600, 700	48	One pair Type I and one pair Type IV	Demo and Analysis	1) RH rear exit is demonstrated equivalent to a Type I exit 2) Underwing exits are demonstrated equivalent to Type IV exits
F.27 mk. 500	60	Same as other mk's	Demo and Analysis	Same as other mk's
F.28 mk. 1000, 3000	65	One pair Type I and one pair Type III	Demo	70 pax after incorporation of Service Bulletin
F.28 mk. 2000	79*	One pair Type I and one pair Type III	Supp. demo based on demo for 65 pax.	
F.28 mk. 4000	85	One pair Type I and two pair Type III	Demo	
LOCKHEED				
L188	99	Other data not appropriate due to age of airplane		
L1011-385-1	362	Three pair Type A and one pair Type I exits	Analysis	Dual aisle interior configuration, 345 passengers were demonstrated
L1011-385-1	400	Four pair Type A exits	Demo	Demonstrated with 10 flight attendants in lieu of the minimum 8 required, dual aisle interior configuration
L1011-385-3 (L1011-500)	315	Three pair Type A exits	Analysis	Dual aisle interior configuration

* 1, 2, 3 Refer to footnotes at end of table

TABLE 3.10.7.1. MAXIMUM APPROVED PASSENGER SEATING CAPACITY FOR TRANSPORT CATEGORY AIRPLANES TYPICALLY USED IN AIR CARRIER SERVICE—Continued

AIRPLANE MANUFACTURER AND MODEL	PAX[1] CAP.	EXIT CONFIGURATION	METHOD[2] OF COMPLIANCE	NOTES ON[3] SPECIAL FEATURES
MCDONNELL-DOUGLAS				
DC-6	82	Other data not appropriate due to age of airplane		
DC-7	91	Other data not appropriate due to age of airplane		
DC-8 Basic	189	Two pair Type I and two pair Type III exits		Demo not required by CAR 4b
		The DC-9-80 Series includes: DC-8-11/DC-8-33/DC-8-52 DC-8-12/DC-8-41/DC-8-53 DC-8-21/DC-8-42/DC-8-55 DC-8-31/DC-8-43/DC-8-62** DC-8-32/DC-8-51/DC-8-72**		
DC-8F	214	Three pair Type I and two pair Type III exits	Analysis	
		The DC-8F Series includes: DC-8F-54 DC-8-62F DC-8F-55 DC-8-72F		
DC-8-60	269	Four Type I and two Type III exit pairs	Demo	Five percent increase is not possible due to the method used to conduct the demonstration. Contact Los Angeles Aircraft Certification Office for details

* 1, 2, 3 Refer to footnotes at end of table

**McDonnell Douglas delivered to United Airlines, a configuration of the DC-8-62 (or DC-8-72) with an extra pair of Type I exits. This configuration is equivalent to the DC-8-62F (or DC-8-72F) and therefore, has a capacity of 214.

TABLE 3.10.7.1. MAXIMUM APPROVED PASSENGER SEATING CAPACITY FOR TRANSPORT CATEGORY AIRPLANES TYPICALLY USED IN AIR CARRIER SERVICE—Continued

AIRPLANE MANUFACTURER AND MODEL	PAX[1] CAP.	EXIT CONFIGURATION	METHOD[2] OF COMPLIANCE	NOTES ON[3] SPECIAL FEATURES
MCDONNELL-DOUGLAS (Continued)		The DC-8-60 Series includes: DC-8-61/DC-8-71 DC-8-61F/DC-8-71F DC-8-63/DC-8-73 DC-8-63F/DC-8-73F		
DC-9-10/20	79	One pair Type I and one pair Type III exits		Demo not required by CAR 4b. Assist rope installed at tailcone, add 5 if inflatable slides are installed at the Type I exit pair
	94	One pair Type I and one pair Type III exits		Tailcone exit must comply with exemption 424: Contact Los Angeles Aircraft Certification Office (LAACO) for details. Add 5 if inflatable slides are installed at Type I exit pair
		The DC-9-10/20 series includes: DC-9-11 DC-9-12/DC-9-15 DC-9-15F DC-9-13/DC-9-21 DC-9-14		
DC-9-10/20/30 Series	109	One pair Type I and two pair Type III exits		Demo not required by CAR 4b. Assist rope installed at tailcone, add 5 if inflatable slides are installed at the Type I exit pair; aft Type IV qualification; Contact LAACO for details
		The DC-9-10/20/30 Series includes: DC-9-11/DC-9-15/DC-9-32F DC-9-12/DC-9-15F/DC-9-33F DC-9-13/DC-9-21/DC-9-34 DC-9-14/DC-9-32/DC-9-34F		

* 1, 2, 3 Refer to footnotes at end of table

TABLE 3.10.7.1. MAXIMUM APPROVED PASSENGER SEATING CAPACITY FOR TRANSPORT CATEGORY AIRPLANES TYPICALLY USED IN AIR CARRIER SERVICE—Continued

AIRPLANE MANUFACTURER AND MODEL	PAX[1] CAP.	EXIT CONFIGURATION	METHOD[2] OF COMPLIANCE	NOTES ON[3] SPECIAL FEATURES
DC-9-30	127	One pair Type I and two pair Type III exits	Demo	Tailcone exit must comply with FAR 25.807(c)(4)(ii); aft Type III exit pair may be limited to Type IV qualification; contact LAACO for details
		The DC-9-30 Series includes: DC-9-31/DC-9-33F DC-9-32/DC-9-34 DC-9-32F/DC-9-34F		
DC-9-41	128	One pair Type I and two pair Type III exits	Demo	Tailcone must comply with FAR 25.807(c)(4)(ii); aft Type III exit pair may be limited to Type IV qualifications; contact LAACO for details
DC-9-51	139*	One pair Type I and two pair Type III exits	Demo	Tailcone exit must comply with FAR 25.807(c)(4)(ii); aft Type III exit pair may be limited to Type IV qualification; contact LAACO for details
DC-9-80	172*	Two pair Type I and two pair Type III exits	Demo	Tailcone exit must comply with FAR letter to Douglas dated 11/16/77; contact LAACO for details
		The DC-9-80 Series includes: DC-9-81 (MD-81) DC-9-82 (MD-82) DC-9-83 (MD-83)		

* 1, 2, 3 Refer to footnotes at end of table

TABLE 3.10.7.1. MAXIMUM APPROVED PASSENGER SEATING CAPACITY FOR TRANSPORT CATEGORY AIRPLANES TYPICALLY USED IN AIR CARRIER SERVICE—Continued

AIRPLANE MANUFACTURER AND MODEL	PAX[1] CAP.	EXIT CONFIGURATION	METHOD[2] OF COMPLIANCE	NOTES ON[3] SPECIAL FEATURES
DC-9-30	127	One pair Type I and two pair Type III exits	Demo	Tailcone exit must comply with FAR 25.807(c)(4)(ii); aft Type III exit pair may be limited to Type IV qualification; contact LAACO for details
		The DC-9-30 Series includes: DC-9-31/DC-9-33F DC-9-32/DC-9-34 DC-9-32F/DC-9-34F		
DC-9-41	128	One pair Type I and two pair Type III exits	Demo	Tailcone must comply with FAR 25.807(c)(4)(ii); aft Type III exit pair may be limited to Type IV qualifications; contact LAACO for details
DC-9-51	139*	One pair Type I and two pair Type III exits	Demo	Tailcone exit must comply with FAR 25.807(c)(4)(ii); aft Type III exit pair may be limited to Type IV qualification; contact LAACO for details
DC-9-80	172*	Two pair Type I and two pair Type III exits	Demo	Tailcone exit must comply with FAR letter to Douglas dated 11/16/77; contact LAACO for details
		The DC-9-80 Series includes: DC-9-81 (MD-81) DC-9-82 (MD-82) DC-9-83 (MD-83)		

* 1, 2, 3 Refer to footnotes at end of table

TABLE 3.10.7.1. MAXIMUM APPROVED PASSENGER SEATING CAPACITY FOR TRANSPORT CATEGORY AIRPLANES TYPICALLY USED IN AIR CARRIER SERVICE—Continued

FOOTNOTES

[1]An asterisk (*) beside a passenger capacity value indicates that the capacity is restricted by the exit rating limit and no increase is allowed without a change to the number and/or type of exits used.

[2]The method of compliance indicates whether the capacity was approved based on the conduct of a full-scale evacuation demonstration (demo) or an analysis. An analysis is based on a previous full-scale demo and/or other tests that validate the analysis. In the case of airplanes with a certification basis of Civil Air Regulations (CAR) 4b, such as the Boeing 727, neither demonstration nor analysis is required. In these cases, certain criteria of FAR § 25.2 may be applicable for increases in passenger capacities; either the Seattle or Los Angeles Aircraft Certification Office should be contacted for details.

[3]This table and these notes describe special features pertinent to the listed passenger capacities. They may not represent all of the unique factors affecting the passenger capacities and interior configurations of the listed airplane models. For this reason, aircraft certification engineering personnel should be consulted, through either the Seattle Aircraft Evaluation Group, SEA AEG (206) 227-2280 and FAX: (206) 227-1270, or the Long Beach Aircraft Evaluation Group, LGB AEG (310) 988-5272 and FAX: (310) 988-5281, prior to approving a change to either the passenger capacity or interior configuration.

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JOB AID 3.11.3.1.—Continued
CREWMEMBER TRAINING AND QUALIFICATION RECORDS
PARTS 121 AND 135

Type of Record	Airmen Position	Relevant FAR(s)	Currency Period
Aircraft Dispatcher Competency Check/Test	Aircraft Dispatcher Competetency Check/Test	121.422 (initial)	permanent
		121.427	14 months
		135.351 (Recurrent quiz/review)	14 months
Recurrent Ground Training	Pilot, FE, Flight Attendant, Aircraft Dispatcher, and Navigator	121.427, 135.63, and 135.351	14 months
Recurrent Ground Training (Emergency Training ("Hands-on") and alternate drills)	Pilot, FE Flight Attendant, Aircraft Dispatcher and Navigator	121.417	50 months No recurrent ground training needed for: (1) fighting actual fire (2) egress via evacuation slide (3) protective breathing equipment
		135.351	14 months
Line Check	Pilots	121.440 and 135.63	14 months
* Special Airports, Route, and Area Qualifications (such as NOPAC, CEPAC, and MNPS)	Pilots	121.445	12 months
		135.63	12 months

* This record must reflect either current training or airport qualification for the airman's current duty assignments in accordance with any authorization, exemption, and additional limitation.

JOB AID 3.11.3.1.—Continued
CREWMEMBER TRAINING AND QUALIFICATION RECORDS
PARTS 121 AND 135

Type of Record	Airmen Position	Relevant FAR(s)	Currency Period
Recency of Experience	Pilots	121.439 and 135.63	90 days
	FE	121.453	6 months
Aircraft Dispatcher Initial Operating Familiarization	Aircraft Dispatcher	121.463	14 months
Aircraft Dispatcher Recurrent Operating Familiarization	Aircraft Dispatcher	121.463	14 months
Operating Experience (OE)	Pilot and FE	121.434 and 135.244	retain for current and previous aircraft
FAA Observation of OE	PIC	121	permanent
Flight Attendant Supervisor Designation	Flight Attendant Supervisor	121.434	permanent
Aircraft Dispatcher Supervisor or Designated Ground Instructor	Aircraft Dispatcher Supervisor or Designated Ground Instructor	121.422	permanent
APD/SDE Designations	Pilot and FE	183	retain for current aircraft
Check Pilot Authorizations		135.63	retain for current aircraft
Check Airman Initial Ground Training		121.413 and 135.63	retain for current aircraft

- Procedures for post-flight handling of passenger injury, illness, or incidents involving passenger altercations and interference with crewmembers
- Employee/passenger accidents and injuries
- Adverse weather conditions, such as tornadoes and hurricanes or other adverse conditions such as earthquakes (if such conditions are likely to occur at the operator's line stations)
- Emergency evacuation of aircraft while parked (This should include procedures for both the flightcrew and flight attendants (F/A) to activate the aircraft emergency lighting systems during an emergency evacuation, regardless of the perceived ease with which an evacuation can be accomplished; and passenger egress procedures for crewmembers and other operations personnel. These procedures should include the requirement that whenever passengers are on board the aircraft prior to airplane movement on the surface, that at least one floor-level exit must be usable for the egress of passengers through normal or emergency means.)
- Aircraft rescue and firefighting (ARFF) emergency notification procedures while parked (POI's shall encourage their assigned operators to develop explicit ARFF emergency notification procedures for crewmembers and other operations personnel to employ in the event of an emergency occurrence on their aircraft while they are parked.)

NOTE: ARFF notification procedures apply to situations where ARFF equipment is located both on and off airports. These procedures should include information concerning (1) whom to notify (such as airport fire department, airport control tower, alternate facility if control tower is closed); (2) the means of notification to be used (such as jetway telephone, including ARFF telephone numbers; and aircraft radio communication system, including ARFF radio frequencies); and (3) the persons by job title whom the operator determines shall implement notification procedures in the event of an emergency occurrence on the operator's aircraft.

- For passenger-carrying operations, if the operator's ARFF procedures require its crewmembers to implement these procedures, then the following guidance should be included:
- In the event of an aircraft fire or other emergency scenario involving aircraft evacuation, the first actions of crewmembers and/or other personnel qualified in accordance with FAR § 121.391(a) should be to initiate the evacuation of the aircraft occupants. Once the crew has determined that all aircraft occupants have been evacuated, then the crewmember(s) designated by the operator should initiate the ARFF emergency notification procedures.

(8) Contract Services. POI's must ensure that the GOM and GMM, as appropriate, contain policy and guidance concerning the interrelationship between the operator's personnel and the personnel of organizations who provide contract services at line stations. Contractor personnel are required to be trained on operator-specific procedures. The appropriate manual must contain the specifications for the following: the types of training to be given to contractor personnel, who is responsible for providing the training, and who is responsible for keeping records of the training. Although the contractor may be delegated this responsibility, the operator has final responsibility.

(9) Trip Records. POI's must ensure that the operator's GOM contains policies, procedures, and guidance concerning the preparation and disposition of trip records at line stations. Trip records include documents such as dispatch and flight releases, flight plans, weather, NOTAM's, oceanic plotting charts, load manifests, and weight and balance documents. The manual material must specify who is responsible for preparing the trip records, the coordination activities that must be accomplished during the trip record preparation process, and the intermediate and final disposition of the trip records. The POI must ensure that the policies, procedures, and guidance in this manual material consistently contain accurate information for crewmembers and flight operational control personnel.

(10) Local Conditions at Line Stations. Personnel at line stations have immediate access to and knowledge of various conditions and activities that could affect flight operations at those line stations. Examples of local conditions and activities include the following: weather conditions, runway and taxiway conditions, airport construction activities, and new obstacles observed in the airport takeoff flight paths. As such, inspectors must ensure that an operator's GOM contains instructions and procedures so that line station personnel can provide the operator with local condition reports. This manual material must contain clear instructions about the circumstances in which line station personnel are authorized to suspend or delay flight operations.

2149. PASSENGER BRIEFING PROCEDURES.

POI's must ensure that the operator's GOM or flight manual, as appropriate, specifies the procedures to be used for pre-takeoff, en route, and post-landing brief-

ings of passengers. Operators who use F/A's may publish F/A user manuals as sections in their GOM's. The GOM or F/A user manual must contain the briefings to be given. Passenger briefing cards must be used to supplement the oral briefings. These passenger briefing cards must depict the required items that are addressed during the oral briefings. AC 121–24A and AC 135-12A, "Passenger Safety Information Briefing and Briefing Cards," contains guidance on passenger safety information and briefing cards.

2151. EXIT SEATING PROGRAM. FAR §§ 121.585 and 135.129, "Exit Seating," regulate exit seating in aircraft operated by U.S. air carrier and commercial operators, except for on-demand operations with aircraft having 19 or fewer passenger seats and commuter operations with aircraft having 9 or fewer passenger seats. These regulations prescribe requirements relating to the seating of airline passengers near emergency exits. POI's must ensure that FAR Parts 121 and 135 operators' manuals, as appropriate, contain the applicable portions of the operators' approved exit seating program. Figure 3.15.3.1. provides POI's with a job aid containing guidance for determining operator compliance with FAR §§ 121.585 and 135.129.

2153. USE OF PORTABLE ELECTRONIC DEVICES. POI's and principal avionics inspectors (PAI) shall review the provisions contained in FAR § 91.21 and AC 91.21-1, "Use of Portable Electronic Devices Aboard Aircraft," with their assigned operators. POI's and PAI's shall ensure that their operators have adequate procedures in place to determine whether or not portable electronic devices are acceptable for passenger use on board their aircraft. POI's shall ensure that their operators specify in their operations manuals those portable electronic devices that may not be operated on board their aircraft. Although FAR §§ 121.571, 125.327, and 135.117 do not require the following briefing information to be given, POI's should encourage their assigned operators to include information regarding the operation of portable electronic devices in their operators' pre-takeoff passenger safety briefings. These briefings should include any specific restrictions that apply to passenger use of portable electronic devices. An example briefing might be the following: "Some portable electronic devices may interfere with the aircraft's communications and navigation systems. Please refrain from using any electronic device other than portable voice recorders, hearing aids, and [*the operator should add to this list of portable electronic devices, the generic identification of any device that it determines will not cause interference.*] For your safety and the safety of others, please stow all carry-on portable electronic devices during taxi, takeoff, and landing."

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VOLUME 4. AIRCRAFT EQUIPMENT AND OPERATIONAL AUTHORIZATIONS

CHAPTER 1. AIR NAVIGATION AND COMMUNICATIONS

SECTION 1. GENERAL NAVIGATION CONCEPTS, POLICIES, AND GUIDANCE

1. GENERAL. This chapter provides an explanation of navigational concepts, direction, and guidance used by Federal Aviation Administration (FAA) inspectors to evaluate requests for authorization to conduct en route operations not previously approved for a particular operator. This chapter discusses methods and requirements necessary to approve or deny requests for proposed operations using aircraft and/or navigation systems new to that operator and proposed operations into new areas of en route operation, using previously approved aircraft and navigational systems.

A. Due to the complex nature of air navigation, navigational requirements of domestic and international operations, and the wide variation in air traffic control (ATC) separation standards used in these operations, inspectors must evaluate each proposed operation while considering the following factors:

- The aircraft
- The navigational system
- The flightcrew
- The area of proposed operation
- The operator's experience with different aircraft and navigational systems in the area of proposed operation
- The operator's experience with the same aircraft and navigational systems, in different areas of operations

B. Standards are provided in this chapter for evaluating operations using navigational systems which have established operational characteristics and limitations within particular areas of en route operations. When an operator requests approval to use a means of navigation not addressed by these standards, the request must be forwarded through the regional flight standards division (RFSD) to AFS-200. AFS-200 will develop the necessary navigational concepts and provide national policies and guidance for evaluating such proposals.

3. THE OBJECTIVE OF AIR NAVIGATION. In aviation, navigation and navigational systems are necessary to satisfy two distinct safety objectives:

A. The first objective is to avoid all obstacles while en route and to arrive safely at the intended destination.

B. The second objective is to fly an intended route with enough precision to permit ATC to safely separate aircraft and prevent collisions.

5. GENERAL CONCEPTS. In the early period of aviation only a few aircraft operated within any given area at the same time. The most demanding navigational requirements were to avoid obstacles and arrive at the intended destination with enough fuel remaining to safely complete a landing. As aviation evolved, the volume of air traffic grew and a corresponding need to prevent collisions increased. Today, the most significant and demanding navigational requirement in aviation is the need to safely separate aircraft. There are several factors which must be understood concerning the separation of aircraft by ATC.

A. In many situations, ATC does not have an independent means such as radar to separate air traffic and must depend entirely on information relayed from an aircraft to determine its actual geographic position and altitude. In this situation, a flightcrew's precision in navigating the aircraft is critical to ATC's ability to provide safe separation.

B. Even when ATC has an independent means, such as radar to verify the aircraft's position, precise navigation and position reports, when required, are still the primary means of providing safe separation. In most situations, ATC does not have the capability or the responsibility for navigating the aircraft. ATC relies on precise navigation by the flightcrew. Therefore, flight safety in all instrument flight rules (IFR) operations depends directly on the operator's ability to achieve and maintain certain levels of navigational performance. ATC radar is used to monitor naviga-

tional performance, detect possible navigational errors, and expedite traffic flow.

C. Additionally, the control of air traffic requires that a certain level of navigational performance be achieved by visual flight rules VFR flights to ensure safe separation of aircraft and to expedite the flow of air traffic.

(1) During cruising flight, the VFR flight altitude appropriate to the direction of flight must be maintained to ensure the required vertical separation between VFR and IFR aircraft and to assist in the prevention of collision between VFR aircraft.

(2) Any aircraft operating in accordance with ATC instructions must navigate with the level of accuracy required to comply with ATC instructions.

(3) Aircraft must be navigated with sufficient precision to avoid airspace where prior ATC clearance or ATC instructions must be obtained.

(4) VFR aircraft must be navigated with sufficient precision to avoid weather conditions which would prevent visual contact with and avoidance of other VFR and IFR aircraft.

(5) VFR aircraft must navigate with sufficient precision to locate a suitable airport and land safely without requiring navigational assistance from ATC, which would adversely affect ATC's ability to control air traffic and expedite its flow.

7. THE CONCEPT OF AN ATC CLEARANCE. Issuance of an ATC clearance by a controller, and the acceptance of this clearance by a pilot is a negotiation process which establishes conditions for the prevention of collision hazards (inflight and terrain).

A. When a controller issues an IFR clearance, he agrees to reserve a three-dimensional block of airspace for that aircraft along the route defined in that clearance. The controller also agrees to issue clearances to all other controlled air traffic in a manner which ensures that all assigned routes of flight will be safely separated.

B. When a pilot accepts an ATC IFR clearance, that pilot is agreeing to continuously remain within that three-dimensional block of airspace assigned by ATC, and adhere to the rules of flight for that operation. The pilot is obligated to comply with this agreement unless he declares an emergency or receives an amended clearance.

C. Any deviation outside the three-dimensional block of airspace assigned by ATC creates a flight safety hazard. In such cases, the aircraft has failed to "navigate to the degree of accuracy required for air traffic control" and has failed to comply with Federal Aviation Regulations (FAR) and International Civil Aviation Organization (ICAO) requirements.

D. In a non-radar environment, ATC has no independent knowledge of the actual position of an aircraft or its relationship to other aircraft in adjacent airspace. Therefore, ATC's ability to detect a navigational blunder and resolve collision hazards is seriously degraded when a deviation from an agreed-to clearance occurs.

9. CONCEPT OF NAVIGATION PERFORMANCE. The concept of navigation performance involves the precision that must be maintained for both the assigned route and altitude by an aircraft operating within a particular area. Navigation performance is measured by the deviation (for any cause) from the exact centerline of a route of flight and altitude specified in the ATC clearance. This includes errors due to degraded accuracy and reliability caused by the design and maintenance of airborne and ground-based navigational equipment and the flightcrew's competency in using the equipment. Flightcrew competency involves both "flight technical errors" and possible navigational errors. "Flight technical error" is defined as the accuracy with which the pilot controls the aircraft as measured by his success in causing the indicated aircraft position to match the desired position.

A. Required levels of navigation performance (standards) vary from area to area depending on traffic density and complexity of the routes flown. The level of navigation performance must be more precise in domestic airspace than in oceanic and remote land areas since air traffic density in domestic airspace is much greater. For example, each year there are approximately 125,000 flight operations in the North Atlantic. This is significantly less than the 2 million flight operations conducted within Chicago Center's airspace each year. This variation in traffic density is reflected in the different separation minimums applied by ATC in these two areas. For example, the minimum lateral distance permitted between co-altitude aircraft in Chicago Center's airspace is 8 nautical miles (NM) (3 NM when radar is used), while in the North Atlantic Minimum Navigation Performance Specifications (MNPS) airspace it is 60 NM.

NOTE: The airspace assigned to an aircraft by ATC has lateral dimensions (on both sides of the exact centerline of the route of flight specified in the ATC clearance) equal to one-half of the lateral separation standard (minimum). For example, the overall level of lateral navigation performance necessary for flight safety must be better than +4 NM in Chicago Center's airspace and better than +30 NM in

the North Atlantic MNPS airspace (see figure 4.1.1.1.).

B. The concept of navigational performance is fundamental to the FAR and is best defined in FAR § 121.103 and FAR § 121.121 which state that each aircraft must be "navigated to the degree of accuracy required for air traffic control." The FAR § 91.123 requirements related to compliance with ATC clearances and instructions also reflect this fundamental concept. The concept of navigational performance is also inherent in ICAO Standards and Recommended Practices (SARP). For example, Annex 2 states that the aircraft "shall adhere to its current flight plan" (comply with the currently effective ATC clearance) and "when on an established air traffic service (ATS) route, operate along the defined centerline of that route."

11. CONCEPT OF THE DEGREE OF ACCURACY REQUIRED FOR CONTROL OF AIR TRAFFIC. The fundamental concept for all IFR navigation standards, practices, and procedures is that all IFR aircraft must be navigated to the degree of accuracy required for control of air traffic.

A. When a flight remains at all times within the three-dimensional block of airspace assigned by ATC, that aircraft is considered to be navigated to the degree of accuracy required for the control of air traffic. If an aircraft deviates outside its assigned block of airspace (except during a declared emergency), that aircraft has not been navigated to the degree of accuracy required for control of air traffic.

B. ATC separation minimums represent the minimum dimensions of a three-dimensional block of airspace which can be assigned by ATC to control flight. These separation minimums have been established for IFR operations in controlled airspace. These standards are usually established through international agreement and implemented through national regulations. These minimums are established for particular categories of navigational operation and specified areas. Examples of particular categories of navigational operations and specified areas include navigation on airways in the national airspace of ICAO member states and long-range navigation in oceanic or remote land areas.

(1) Separation minimums establish the minimum lateral, vertical, and longitudinal distances which can be used to safely separate aircraft operating within a specified area.

(2) Separation minimums also represent the minimum level of overall navigation performance which can be accommodated at any time without jeopardizing safety of flight.

C. Any aircraft deviating greater than one-half the separation minimums established for that operation has failed to meet the required level of navigational performance and to navigate to the degree of accuracy required for control of air traffic. For example, the vertical separation minimum for airplanes operating above flight level (FL) 290 in the United States is 2000 feet. Each aircraft's actual altitude must remain within ±1000 feet of the assigned altitude even when factors such as atmospheric pressure variations and instrument or pilot errors are considered.

D. For operations where air traffic services are provided by the United States, separation minimums are established by the FAR and air traffic control directives. For operations where air traffic services are provided by contracting ICAO member states, separation minimums are established by the national regulations of the member states (if established) and in ICAO documents. Operations in uncontrolled airspace are not provided air traffic control services (aircraft are not separated by ATC). Separation minimums are not normally established for uncontrolled airspace. The prevention of collision is dependent upon the "see and avoid" concept and other practices discussed in paragraph 73 and 153.

E. Separation minimums applied for operations in the U.S. National Airspace System (NAS) can be found in FAA Handbook 7110.65, "Air Traffic Control." FAA Order 7110.83, "Oceanic Air Traffic Control," prescribes separation minimums in international oceanic airspace delegated to the U.S. by ICAO. ICAO Document 7030/3, "Regional Supplementary Procedures," also prescribes separation minimums in international airspace.

13. CONCEPT OF OPERATIONAL SERVICE VOLUME. Operational service volume is that volume of airspace surrounding an ICAO standard airways navigation facility which is available for operational use. Within that volume of airspace a signal of usable strength exists and that signal is not operationally limited by co-channel interference. Within this volume of airspace (the operational service volume) an ICAO standard airways navigation aid (NAVAID) facility's signal-in-space conforms to flight inspection signal strength and course quality standards including frequency protection. ICAO standard NAVAID's are VOR, VOR/DME, and NDB. The national airspace systems of ICAO contracting member states are based on the operational service volume of these facilities. Navigational performance within the operational service volume and ATC separation minimums can be predicated on the use of these facilities. In contrast, the signal-in-space outside the operational service volume has not been shown to

meet the flight inspection signal strength, course quality, and frequency protection standards. Therefore, navigational performance and ATC separation minimums cannot be predicated on the use of these facilities alone. The concept of operational service volume is critical for understanding and applying the principles of air navigation as discussed in this handbook.

15. CATEGORIES OF NAVIGATIONAL OPERATIONS. A thorough comprehension of the categories of navigational operations is essential to understand air navigation concepts and requirements discussed in this handbook and other documents. Understanding the categories of navigational operations is also essential for evaluating an operator's ability to navigate to the degree of accuracy required for the control of air traffic. In the broad concept of air navigation, two major categories of navigational operations are identified as follows:

- Class I navigation
- Class II navigation

A. *Class I navigation.* Class I navigation is defined as any en route flight operation conducted in controlled or uncontrolled airspace which is entirely within operational service volumes of ICAO standard NAVAID's (VOR, VOR/DME, NDB).

(1) The operational service volume describes a three-dimensional volume of airspace within which any type of en route navigation is categorized as Class I navigation. For any type of navigation within this volume of airspace, IFR navigation performance must be at least as precise as IFR navigation is required to be using VOR, VOR/DME (or NDB in some countries). It is important to understand that the definition of Class I navigation is not dependent upon the equipment installed in the aircraft. For example, an aircraft equipped and approved to use Loran C in the U.S. as the sole means of en route navigation (no VOR, VOR/DME installed) is conducting Class I navigation when the flight is operating entirely within the operational service volume of federal VOR's and VOR/DME's. In this example, the IFR navigational performance of the Loran C must be as precise as IFR navigation is required to be using ICAO standard NAVAID's, if IFR operations are to be conducted. In another example, a VFR flight navigated by pilotage is conducting Class I navigation when operating entirely within the operational service volume. However, the VFR navigational performance in this example must be only as precise as VFR pilotage operations are required to be.

(2) A determination of the lateral and vertical extent of the airspace where Class I navigation is conducted is determined solely by the operational service volumes of ICAO standard NAVAID's. See section 3. Class I navigation cannot be conducted outside of this airspace. Class I navigation also includes VFR or IFR navigation operations on the following:

- Federal airways
- Published IFR direct routes in the U.S.
- Published IFR off-airway routes in the U.S.
- Airways, advisory routes (ADR's), direct routes, and off-airway routes published or approved by a foreign government provided that these routings are continuously within the operational service volume (or foreign equivalent) of ICAO standard NAVAID's

(3) Class I navigation requirements are directly related to separation minimums used by ATC. IFR separation minimums applied in the national airspace system of the United States and most other countries are based on the use of ICAO standard NAVAID's. These separation minimums, however, can only be applied by ATC within areas where the NAVAID's signal-in-space meets flight inspection signal strength and course quality standards. An ICAO standard NAVAID's signal-in-space conforms to flight inspection signal strength and course quality standards (including frequency protection) within its designated operational service volume. Therefore, air navigation and the safe separation of aircraft within that service volume can be predicated on the use of these facilities.

(4) Within areas where the safe separation of aircraft is based on the use of ICAO standard NAVAID's, any IFR operation must be navigated with at least the same precision as the precision specified by the appropriate national separation minimums. The illustration following this paragraph provides several examples of Class I navigation. A more detailed discussion of Class I navigation is in section 3.

B. *Class II navigation.* Class II navigation is any en route operation which is not categorized as Class I navigation and includes any operation or portion of an operation which takes place outside the operational service volumes of ICAO standard NAVAID's. For example, an aircraft equipped with only VOR conducts Class II navigation when the flight operates in an area outside the operational service volumes of federal VOR's/DME's.

(1) Class II navigation involves operations conducted in areas where the signals-in-space from ICAO standard NAVAID's have not been shown to meet flight inspection signal strength, course quality, and frequency protection standards. Therefore, ATC cannot predicate aircraft separation on the use of these

facilities alone and must apply larger separation criteria.

(2) When operating outside the operational service volume of ICAO standard NAVAID's, signals from these stations cannot be relied upon as the sole means of conducting long-range operations to the degree of accuracy required for the control of air traffic or as the sole means of obstacle avoidance. Therefore, when operating outside the designated operational service volumes of ICAO standard NAVAID's, operators must use long-range navigation systems (GPS, Omega, INS) or special navigational techniques (DR, pilotage, flight navigator, celestial) or both. These system and/or techniques are necessary to navigate to the degree of accuracy required for the control of air traffic and to avoid obstacles.

(3) It is important to understand that the definition of Class II navigation is not dependent upon the equipment installed in the aircraft. All airspace outside the operational service volume of ICAO standard NAVAID's is a three-dimensional volume of airspace within which any type of en route navigation is categorized as Class II navigation. For any type of navigation within this volume of airspace, the IFR navigational performance must be at least as precise as the navigational performance assumed during establishment of the ATC separation minimums for that volume of airspace. For example, if the ATC lateral separation minimums established for an oceanic area is 90 NM, the long-range navigation equipment, operational procedures, and operational techniques used must provide a level of navigational performance which ensures that unauthorized deviations beyond 45 NM from centerline (one-half the separation standard) do not occur at any time. The navigational performance for VFR operations in a Class II navigation volume of airspace must be only as precise as VFR navigation operations are required to be.

(4) In many cases where ATC lateral separation minimums are large (usually 90 NM or greater), and the Class II navigation portion of the flight is short (less than 1 hour), it is possible to meet required levels of navigational performance and conduct Class II navigation using ICAO standard NAVAID's supplemented with special navigational techniques such as dead reckoning. For example, it is possible in turbojet airplanes (with proper procedures and training) to fly many routes between the southeastern United States, the Caribbean Islands, and South America with VOR/DME and NDB equipment. In these situations, Class II navigation requirements can be met even though significant portions of these routes (less than 1 hour) are outside (beyond) the operational service volumes of ICAO standard NAVAID's. In the domestic U.S., it is not uncommon for VFR flights at low altitude with aircraft such as helicopters to conduct Class II navigation while outside the operational service volumes of ICAO standard NAVAID's when operating over routes of less than 100 NM in length. Obviously, Class II navigation includes transoceanic operations and operations in desolate/remote land areas such as the Arctic. Figure 4.1.1.2. provides several examples of Class I and Class II navigation. A more detailed discussion of Class II navigation is provided in section 4.

NOTE: It is important to understand that Class II navigation does not automatically require the use of long-range navigation systems (INS, Omega, Loran C, Doppler, or flight navigator). In many instances Class II navigation can be conducted with conventional NAVAID's (VOR, DME, NDB) if special navigational techniques are used to supplement these NAVAID's.

17. U.S. PUBLIC LAW, INTERNATIONAL AGREEMENTS, AND STANDARDS RELATED TO AIR NAVIGATION.

A. *Title 49 of the United States Code (U.S.C.) (formerly, the Federal Aviation Act of 1958 (FA Act).* The FAA authorities and responsibilities related to air navigation and navigation systems, practices, and procedures originated in the U.S.C. Two important sections of the code are summarized as follows:

(1) 49 U.S.C. § 40103 (formerly § 307 of the FA Act) states that "The Secretary of Transportation is authorized and directed to develop plans for and formulate policy with respect to the use of the navigable airspace; and assign by rule, regulation, or order the use of the navigable airspace under such terms, conditions, and limitations, (operational procedures and navigation performance requirements) as he may deem necessary in order to ensure the safety of aircraft and the efficient utilization of such airspace."

(2) 49 U.S.C. § 44701 (formerly § 601(a) of the FA Act) empowers the Secretary to "promote safety of flight of civil aircraft in air commerce by prescribing and revising from time to time. . . minimum standards governing the. . . performance of aircraft. . . and appliances (navigation performance and navigation systems) as may be required in the interest of safety. . . reasonable rules and regulations, or minimum standards, governing other practices, methods, and procedure. . . necessary to provide adequately for national security and safety in air commerce."

B. *Articles of the ICAO Convention.* The Articles of the Convention represent international law and are equivalent to the U.S.C.. The foundation for the International Civil Aviation Organization was estab-

lished on December 7, 1944, when the text of the convention on International Civil Aviation was opened for signature in Chicago, Illinois. This document (DOC 7300) is referred to as the "ICAO Convention" or the "Chicago Convention." This "Convention" contains 96 Articles known as the Articles of the Convention. By signing the Convention, a government (state) agreed to abide by "certain principles and arrangements in order that international civil aviation may be developed in a safe and orderly manner and that international air transport services may be established on the basis of equality of opportunity and operated soundly and economically." The Articles of the Convention represent those certain principles and arrangements and serve as the foundation for international aviation laws, standards, recommended practices and guidance material. Articles 44 through 66 established the International Civil Aviation Organization (ICAO) as a body within the United Nations. Articles 1 through 43 established general principles concerning international air navigation. Some of the more significant articles that relate to air navigation are as follows:

- Article 1 recognizes that each state has complete and exclusive sovereignty over the airspace above its territory
- Article 3 states that the convention applies only to civil aircraft and that each state will require their state aircraft to operate with due regard for the safety of navigation of civil aircraft
- Article 11 requires that the international air navigation laws and regulations of a contracting state relating to "the operation and navigation of such aircraft while within its territory, shall be applied to the aircraft of all contracting states without distinction to nationality, and shall be complied with by such aircraft upon entering or departing from or while within the territory of that state"
- Article 12 is the most significant requirement related to flight operations (Rules of the Air). This Article requires that "each contracting state undertakes to adopt measures to ensure that every aircraft over or maneuvering within its territory and that every aircraft carrying its nationality mark, wherever such aircraft may be, shall comply with the rules and regulations relating to the flight and maneuver of aircraft, there in force." This Article also requires that "over the high seas, the rules in force shall be those established under this convention. Each contracting state undertakes to ensure the prosecution of all persons violating the regulations applicable"
- Article 37 requires each contracting state to achieve the highest practicable degree of uniformity with ICAO standards and recommended practices, in matters related to the safety, regularity, and efficiency of air navigation

C. *The ICAO Annexes.* The Articles of the ICAO convention contain basic principles which are the foundation for ICAO annexes. ICAO annexes contain the SARP's which have been adopted through international agreement to ensure the safety, regularity, and efficiency of air navigation. An ICAO standard is worded in mandatory language (shall, must, will) and is directive in nature. A recommended practice is worded in permissive language (should, may, can) and is not directive. Recommended practices represent practices which, although internationally recognized as safe operating practices, are not sufficiently comprehensive or lack the mature development appropriate for an international standard. The ICAO annexes which are most significant to FAA operations inspectors, are Annex 2, Rules of the Air, and Annex 6, Operation of Aircraft.

(1) *ICAO Annex 2, Rules of the Air.* Annex 2 specifies international rules of the air agreed upon by ICAO member states. These rules are equivalent to the U.S. rules for operating within the territory of the United States (FAR Part 91). However, for operations over the high seas, Annex 2 is unique since it relates to flight and maneuver of aircraft within the meaning of Article 12 of the convention. Over the high seas, Annex 2 applies without exception (compliance is mandatory for all civil aircraft). Annex 2 is incorporated by reference into FAR Part 91. FAR § 91.703(a) requires each person operating a civil aircraft of U.S. registry outside the United States to comply with Annex 2 when operating over the high seas. The sections of Annex 2 most relevant to the discussion of air navigation are Chapter 3, General Rules and Chapter 5, Instrument Flight Rules.

(a) Chapter 3, paragraph 3.3 specifies requirements for ATC flight plans and paragraph 3.6 specifies requirements for air traffic control services.

(b) Chapter 3, paragraph 3.6.2 requires an aircraft to adhere to its "current flight plan" (currently effective ATC clearance), to operate along the defined centerline of any ATS route used, and on any other route to operate directly between the points defining that route.

(c) Chapter 3, paragraph 3.6.5 requires that the flightcrew of any aircraft operated as a controlled flight to maintain a continuous listening watch on the appropriate radio frequency of, and establish two-way communication as necessary with (as required for air traffic control), the appropriate air traffic control unit.

(d) Chapter 5, paragraph 5.1.1 requires aircraft to be equipped with suitable instruments and navigational equipment appropriate to the route to be flown.

(e) Chapter 5, paragraph 5.2.1 requires all IFR flights to comply with the provisions of paragraph 3.6 when operating in controlled airspace (see previous discussion in subparagraphs (b) and (c)).

(f) These requirements, as specified in chapters 3 and 5 of Annex 2, mean that the aircraft must be navigated to the degree of accuracy required for air traffic control. Flightcrews must maintain a continuous listening watch and communicate with ATC as necessary for the purpose of air traffic control.

(2) *ICAO Annex 6, Operation of Aircraft.* Annex 6 has two parts. Part I specifies requirements for airplanes engaged in scheduled international air services and nonscheduled international air transport operations for compensation or hire. Part I specifies requirements for FAR Parts 121 and 135 operation. Part II specifies requirements for international general aviation operations. The purpose of Annex 6, Part I is to facilitate safety in international airspace by providing standards for safe navigational operating practices. Part I also contributes to the efficiency and regularity of international air navigation by encouraging states to facilitate passage of other states' airplanes over their territories by operating in conformity with such standards. The application of Annex 2 to international operations differs slightly from Annex 6. A state may take exception (have different criteria) to Annex 2 standards, for operations conducted in its sovereign airspace. However, no state can take exception to Annex 2 standards for operations conducted over the high seas. Annex 2, which specifies the international rules of the air, applies to all operations over the high seas without exception. Under Annex 6 standards, a state may take exception for operations in its sovereign airspace and for operation of its aircraft over the high seas. For air navigation, the most relevant section of Annex 6 is Chapter 7, Aeroplane Communication and Navigation Equipment. This chapter contains ICAO SARP's related to navigation and communication. Pertinent elements of these SARP's are described as follows:

(a) *Communication.* Each airplane shall have radio communication equipment capable of receiving meteorological information during the flight and conducting two-way communication at anytime during the flight with aeronautical stations on frequencies prescribed by the appropriate authority. This requirement cannot be routinely satisfied by relaying reports through other aircraft.

(b) *Navigation Equipment.* Each airplane shall have navigational equipment which enables it to proceed in accordance with its operational flight plan and the requirements of air traffic services. Operations in MNPS airspace require navigational equipment which continuously provides information to the flightcrew of adherence to or departure from track with respect to the required degree of accuracy at any point along that track. Any operation in MNPS airspace must be authorized by the state responsible for that operator.

(c) *Equipment Redundancy.* Each airplane must have enough navigation equipment installed and operational to ensure that, if one item of equipment fails at any time during the flight, the remaining equipment will be sufficient to enable navigation to the degree of accuracy required for air traffic control. Additionally, failure of any single unit required for communication or navigation purposes or both, must not result in the loss of another required unit.

19. RELATIONSHIP BETWEEN THE FAR, ICAO, SARP's, AND NATIONAL REGULATIONS. The U.S.C. is the authority for the FAR. The FAR represent the regulatory implementation of the responsibilities assigned by the U.S.C. and the implementation of the principles derived from the ICAO convention. The relationship between the FAR, ICAO, SARP's, and foreign national regulations are discussed in the following subparagraphs.

A. *FAR Part 91.* Part 91 regulates the operation of all civil and public aircraft within the United States and specifies minimum capabilities necessary to navigate to the degree of accuracy required for air traffic control. It also regulates the operation of civil aircraft of U.S. registry outside the United States. The following are examples of FAR Part 91 regulations applicable outside the U.S.:

(1) FAR § 91.703 requires each person operating a U.S. aircraft to comply with ICAO Annex 2 when over the high seas and to comply with the regulations of a foreign country when operating within that country's airspace.

(2) FAR § 91.703(a)(3) requires compliance with FAR Part 91 Subparts A (General), C (Maintenance), and D (Large and Turbine Powered Multiengine Airplanes) when not in conflict with the regulations of a foreign nation or Annex 2. Aircraft operating

under FAR Parts 121 and 135 are not required to comply with most of Subpart C or any of Subpart D.

(3) FAR § 91.705 and Appendix C specify minimum standards for operation in NAT MNPS airspace.

B. *FAR Part 135.* For operators conducting operations under FAR Part 135, FAR § 135.3 requires compliance with that part while operating within the U.S. It also specifies that while operating outside the U.S. these operators must comply with the following:

- Annex 2 when operating over the high seas
- Rules of a foreign country when operating within that country
- All the regulations of FAR Parts 61, 91, and 135, which are more restrictive than Annex 2 or regulations of a foreign country when compliance with these U.S. regulations would not violate requirements of Annex 2 or the foreign country

C. *FAR Part 121.* For operators conducting operations under FAR Part 121, FAR § 121.1 requires compliance with that Part while operating within or outside the U.S.. FAR § 121.11 specifies that these operators, when operating within a foreign country, must comply with the air traffic rules of the country concerned and any local airport rules which may be in force. FAR § 121.11 also requires that all rules of FAR Part 121 that are more restrictive than a foreign country's rules must be followed, if it can be done without violating the rules of that country. Additionally, air carriers operating under FAR Part 121 must comply with Annex 2 when over the high seas in accordance with FAR § 91.703.

21. RELATIONSHIP OF U.S. OPERATIONAL FAR TO AIR NAVIGATION. Many FAR have evolved over a period of time to satisfy two basic objectives of air navigation. FAR related to air navigation have been promulgated and frequently changed to accommodate the need to efficiently handle a continuous growth in air traffic. Significant advances in air navigation technology, air traffic control techniques, and air traffic control equipment have permitted and required these regulations to evolve to their current status. Over the past years, numerous operational FAR have been adopted to specifically satisfy the critical air navigation objective of safely separating aircraft. Certain FAR such as those requiring filing an ATC flight plan and complying with ATC clearances are clearly related to this objective. Other FAR are not as clearly related, but have a direct bearing on the overall plan used to separate aircraft. The ATC system presumes compliance with all of the regulations related to air navigation. Any non-compliance with these regulations can seriously degrade the ability to separate aircraft.

A. Examples of operational FAR related to air navigation and the objective of safely separating aircraft include the following:

(1) Far § 91.123- Compliance with ATC clearances and instructions.

(2) FAR § 91.169 - IFR Flight plan; information required.

(3) FAR § 91.129 - Operation in Class D airspace.

(4) FAR § 91.131 - Operation in Class B airspace.

(5) FAR § 91.137 - Temporary flight restrictions.

(6) FAR § 91.135 - Operations in Class A airspace.

(7) FAR § 91.143 - Flight limitation in the proximity of space flight operations.

(8) FAR § 91.157 - Special VFR weather minimums.

(9) FAR § 91.159 - VFR cruising altitude or flight level.

(10) FAR § 91.173 - ATC clearance and flight plan required.

(11) FAR § 91.179 - IFR cruising altitude or flight level.

(12) FAR § 91.181 - Course to be flown.

B. Subpart B of FAR Part 91 (§§ 91.101 through 91.149) does not, for the most part, apply to operations outside the U.S. However, FAR § 91.703 makes FAR §§ 91.117(c), 91.127, 91.129, and 91.131 applicable to operations technically outside the U.S. (for example, operations between 3 and 12 statute miles off shore). This is necessary because Class B airspace and Class C airspace may extend more than 3 miles outside the continental U.S.

C. FAR § 91.703(a)(2), FAR § 135.3(b), and FAR § 121.11 all require compliance with the operational and maneuver rules of a foreign country when operating in the airspace of that country. Most foreign countries have operational and maneuver rules which are similar to U.S. rules related to air navigation as previously discussed.

23. FAR SPECIFYING AIR NAVIGATION EQUIPMENT REQUIREMENTS. Many FAR require certain aircraft equipment. These requirements

relate directly to the air navigation objective of safely separating aircraft. Some of these equipment rules specifically relate to the operational requirement of navigating to the degree of accuracy required for air traffic control. The air navigation equipment rules of FAR Parts 121 and 135 are often supplemented by operations specifications which contain specific authorizations, limitations, and conditions that must be complied with by operators conducting flights under those Parts. The discussion which follows references air navigation equipment requirements and provides direction, guidance, and clarification when appropriate.

A. *FAR Part 91.* FAR Part 91 specifies navigation equipment necessary to be compatible for operations in the U.S. National Airspace System. The following is a list of FAR Part 91 requirements, with clarification when appropriate. Inspectors should read the appropriate FAR in conjunction with this material.

(1) FAR § 91.215 - ATC transponder and altitude reporting equipment and use.

(2) FAR § 91.171 - VOR equipment check for IFR operations.

(3) FAR § 91.205 - Powered civil aircraft with standard category U.S. airworthiness certificates; instrument and equipment requirements.

- FAR § 91.205(d)(2) requires air navigation equipment to be appropriate to the ground facilities to be used. The current U.S. national airspace system is based on VOR and VOR/DME ground facilities. Therefore, this regulation requires that VOR and/or VOR/DME equipment, or an area navigation system which meets the en route criteria of AC 90-45A be installed in the aircraft and operable if it is to be used for IFR flight in U.S. national airspace. This navigational equipment is necessary to navigate to the degree of accuracy required for air traffic control. If the route to be flown is predicated on NDB, then ADF airborne equipment is also required.

- FAR § 91.205(e) requires approved DME equipment when operating at or above 24.000 feet, MSL if the route or route segment is predicated on VOR. DME is not required, for example, when navigation is based on the use of an RNAV system which meets AC 90-45A en route performance and reliability criteria (or equivalent) without input from DME.

(4) FAR § 91.217 - Data correspondence between automatically reported pressure altitude data and the pilot's altitude reference.

(5) FAR § 91.219 - Altitude alerting system or device (turbojet powered civil airplanes).

(6) FAR § 91.209 - Aircraft lights.

(7) FAR § 91.215 - ATC transponder and altitude reporting equipment and use.

(8) FAR § 91.221 - Traffic alert and collision avoidance system and use.

B. *FAR Part 135.* FAR Part 135 specifies the navigational equipment necessary for all operations under FAR Part 135 including operations outside the United States. These requirements are in addition to the navigational equipment requirements of FAR Part 91 but do not require duplication of any equipment specified in FAR Part 91. The following is a list of Part 135 navigation equipment requirements, with clarification when appropriate. Inspectors should read the appropriate FAR in conjunction with this material.

(1) FAR § 135.143 - General requirements.

(2) FAR § 135.149 - Equipment requirements: General.

(3) FAR § 135.159 - Equipment requirements: Carrying passengers under VFR at night or under VFR over-the-top conditions.

(4) FAR § 135.161 - Radio and navigation equipment: Carrying passengers under VFR at night or VFR over-the-top. FAR 135.161 requires radio navigational equipment able to receive radio signals from the ground facilities to be used. The ground facilities and airborne equipment used must enable navigation to the degree of accuracy required for air traffic control. Airborne equipment requirements must also comply with Part B of the operations specifications

- If the route is navigated using an area navigation system approved under the en route criteria of AC 90-45A, the area navigation equipment must be installed and operable. VOR and/or ADF equipment are not required for en route operation where an area navigation system certified for IFR flight in accordance with AC 90-45A is installed and operable and all ground-based or space-based elements of the support system are serviceable

- Unless the route is navigated using an area navigation system certified for IFR flight in accordance with AC 90-45A, VOR equip-

ment must be installed and operable if the route is predicated on VOR. ADF equipment must be installed and operable if the route is predicated on NDB

(5) FAR § 135.163 - Equipment requirements: Aircraft carrying passengers under IFR.

(6) FAR § 135.165 - Radio and navigation equipment: Extended-overwater or IFR operation.

- The requirements of FAR § 135.165 are not Class II navigation equipment requirements. This rule addresses Class I navigational requirements (VOR, DME, NDB). FAR Part 135 does not have a rule which specifically addresses Class II navigation requirements. FAR Part 135 Class II navigation requirements are specified in Part B of the operations specifications
- This regulation requires two independent receivers for Class I navigation compatible with the facilities to be used. For en route navigation (excluding terminal operations), the facilities which must be used, whether self-contained, ground-based, or space-based, must enable navigation to the degree of accuracy required for air traffic control. Airborne equipment requirements must also comply with Part B of the operations specifications
- If the route is navigated using an area navigation system approved under the en route criteria of AC 90-45A, two independent area navigation systems must be installed and operable. Dual VOR and/or dual ADF equipment is not required for en route operations when two independent area navigation systems, certified for IFR flight in accordance with AC 90-45A, are installed and operable, and all elements of the support facilities are serviceable. For example, two independent Loran C systems or one independent Loran C system and some other approved independent area navigation system such as Omega would be acceptable configurations
- Part B of the operations specifications permits (under specified conditions) an approved area navigation system fix to be substituted for an ICAO standard NAVAID when that facility is temporarily out of service
- Unless routes are navigated using an area navigation system certified for IFR flight in accordance with AC 90-45A, two independent VOR systems must be installed and operable if the route is predicated on VOR, and two independent ADF systems must be installed and operable if the route is predicated on NDB

(7) FAR § 135.175 - Airborne weather radar equipment requirements.

NOTE: Airborne weather radar is normally used for thunderstorm detection and avoidance, however, Part B of the operations specifications requires weather radar to be installed, operational, and used for ground mapping to assist in navigation when conducting certain operations in the North Pacific near the Commonwealth of Independent States (CIS) (the former Soviet Union) airspace.

(8) FAR § 135.215 - IFR: Operating limitations. This regulation specifies the degree of accuracy required when operating IFR outside controlled airspace. It also reflects the concept of "demonstrated ability" to safely conduct operations.

C. *FAR PART 121.* FAR Part 121 specifies the navigational equipment necessary for all operations conducted under that Part including operations outside the United States. These requirements are in addition to the navigational equipment requirements of FAR Part 91 but do not require duplication of any equipment specified in FAR Part 91. All of FAR Part 121 en route requirements reflect the concept of "demonstrated ability." The following is a list of FAR Part 121 navigation equipment requirements, with clarification appropriate. Inspectors should read the appropriate FAR in conjunction with this material.

(1) FAR §§ 121.93/121.113 - Area and route requirements: General

NOTE: The air carrier must show that it is able to conduct satisfactory operations over the routes and areas in which it operates. Approvals in areas and on specific routes are granted in operations specifications and listed by "area of en route operation" and by specific route when appropriate. The general requirements specified in FAR §§ 121.93 and 121.113 are not applicable to Class II navigation. Parts B and C of the operations specifications stipulate requirements for operations outside controlled airspace.

(2) FAR §§ 121.95/121.115 - Route width. These regulations specify the degree of lateral navigation precision necessary for the control of air traffic in Class I navigation. Part B of the operations specifications also stipulates certain route width requirements.

(3) FAR §§ 121.103/121.121 - En route navigational facilities. FAR §§ 121.103 and 121.121 are the basis of all other FAR Part 121 regulations for en route navigation requirements.

(a) FAR §§ 121.103(a) and 121.121(a) implement the concept of "navigation performance" when conducting IFR Class I navigation and certain types of Class II navigation that use nonvisual ground aids. Nonvisual ground aids are electronic NAVAID's but not necessarily limited to VOR, DME, or NDB. Omega and Loran C are examples of navigation systems considered nonvisual ground aids. Each FAR Part 121 operator must show that nonvisual ground aids are available and located to allow navigation to the degree of accuracy required for air traffic control and for the type of operation involved.

(b) Area navigational systems certified in accordance with the criteria in AC 90-45A meet the intent of FAR §§ 121.103 and 121.121 when conducting Class I navigation (including space-based systems such as NAVSTAR GPS).

(c) Certain long-range operations may be conducted under these regulations using the following navigational equipment:

- Omega systems certificated under AC 120-37
- Automatic Loran C systems certificated under AC 20-121A
- Operations using satellite-based systems such as NAVSTAR GPS

(d) When operating in the U.S. Positive Control Area (PCA), area navigation systems which have not been demonstrated to meet the criteria in AC 90-45A also meet the intent of these rules provided the ATC radar is serviceable and dual airborne VOR/DME equipment is installed and operable. Operations specifications provide authorization to conduct operations in the U.S. PCA using these area (or long-range) navigation systems.

(e) FAR §§ 121.103 and 121.121 do not specifically state or imply a redundant navigation equipment capability. In addition these regulations do not apply to VFR pilotage operations, operations with a flight navigator or long-range navigation operations using INS or Doppler.

(4) FAR § 121.305 - Flight and navigational equipment

(5) FAR § 121.323 - Instrument and equipment for operations at night

(6) FAR § 121.325 - Instruments and equipment for operations under IFR or over-the-top

(7) FAR § 121.345 - Radio Equipment.

(8) FAR § 121.347 - Radio equipment for operations under VFR over routes navigated by pilotage.

NOTE: FAR § 121.347(b) specifies that for night VFR pilotage operations the airplane must be equipped with the radio equipment necessary to receive radio navigational signals applicable to the route flown.

(a) If the route is navigated using an area navigational system, radio navigational signals compatible with the airborne area navigational system must be available if required for the system to perform its intended function. Unless the route is navigated using an area navigation system certified for IFR flight in accordance with criteria in AC 90-45A, airborne VOR equipment is required when the route is predicated on VOR. Airborne ADF equipment is required when it is predicated on NDB.

(b) Although FAR § 121.611 permits VFR en route operations, FAR Part 121 operators are generally prohibited from conducting VFR en route operations by Part B of the operations specification. Certain FAR Part 121 operators may be specifically authorized to conduct VFR en route operations in special situations (see volume 3, chapter 1).

(c) This rule does not apply to Class II navigation.

(9) FAR § 121.349 - Radio equipment for operations under VFR over routes not navigated by pilotage or for operations under IFR or over-the-top. The essential requirement of this regulation is that airplanes must be equipped to receive radio navigational signals from all primary en route and approach navigational facilities intended to be used.

(a) The intent of this regulation is to require redundant airways navigation capability (VOR, VOR/DME, NDB) to ensure the ability to navigate to the degree of accuracy required for air traffic control when conducting Class I navigation. FAR §§ 121.103/121.121 clearly state the nonvisual ground aids are not required for operations over routes where celestial or other means of navigation are approved by the Administrator. Since all IFR primary en route and approach navigation facilities have historically been nonvisual ground aids (Standard ICAO NAVAID's), FAR § 121.349 is intended to apply only to operations over routes predicated on VOR, VOR/DME, or NDB.

(b) FAR § 121.349 applies only to Class I navigation operations and those Class II navigation

operations predicated on VOR, VOR/DME, and/or NDB. FAR §§ 121.103, 121.121 and 121.389 apply to all other Class II navigation operations. The intent of FAR § 121.349 is met when any Class I navigation operation is predicated on the following:

- VOR, provided dual independent VOR equipment is installed and operable in the airplane
- NDB, provided dual independent ADF equipment is installed and operable in the airplane. However, if one ADF system and a dual independent VOR system are installed and operable, the intent of FAR § 121.349 is met provided VOR NAVAID's are located at ground positions which would permit the flight to safely proceed (from any point along the route) to a suitable airport and complete an instrument approach without using ADF equipment
- Area navigational systems, provided dual independent area navigation systems certified under AC 90-45A are installed and operable
- Part B of the operations specifications permits (under specified conditions) an area navigational system fix to be substituted for an ICAO standard NAVAID when that facility is temporarily out of service.

(10) FAR § 121.351 - Radio equipment for extended-overwater operations and for certain other operations. This regulation applies only to Class I navigation and Class II navigation operations predicated on VOR, VOR/DME, and/or NDB. FAR §§ 121.103, 121.121, and 121.389 apply to all other Class II navigation operations.

(11) FAR § 121.357 - Airborne weather radar equipment requirements. Airborne weather radar is normally used for thunderstorm detection and avoidance; however, Part B of the operations specifications requires weather radar to be used for ground mapping to assist in navigation when conducting certain operations in the North Pacific near CIS airspace.

(12) FAR § 121.355 - Equipment for operations on which specialized means of navigation are used. This regulation limits the definition of "specialized means of navigation" as INS and Doppler operations when operating outside the United States. FAR § 121.355 is referenced in FAR § 121.389 which requires "specialized means of navigation" (INS or Doppler) to be approved in accordance with FAR § 121.355. INS and Doppler are Class II navigational systems, however, today other types of navigational systems are approved for Class II operations, i.e., Global Positioning System (GPS).

(13) FAR § 121.389 - Flight navigator and specialized navigation equipment. The conceptual basis of this regulation is the phrase "when its position cannot be reliably fixed for a period of more than 1 hour."

(a) "Reliably fixed" as defined in the operations specifications means station passage of a VOR, VORTAC, or NDB. A "reliable fix" also includes a VOR/DME fix, an NDB/DME fix, a VOR intersection, an NDB intersection, and a VOR/NDB intersection provided course guidance is available from one of the facilities and the fix lies within the operational service volume of both facilities which define the fix.

(b) FAR § 121.389 does not apply to those situations where the airplane's position can be reliably fixed, at least once each hour to the degree of accuracy required for the control of air traffic. If the operator can show compliance with FAR §§ 121.103/121.121, the requirements of FAR § 121.389 are automatically met by providing fixes more frequently than once an hour. Therefore, Class II navigation operations using Omega systems, Loran C, or GPS systems meet the requirements of FAR § 121.103 or FAR § 121.121 and are approved under these regulations.

(c) Class II operations with Doppler and INS systems are approved under FAR § 121.355 and FAR Part 121 Appendix G.

(d) Class II navigation systems are divided into two categories.

- INS and Doppler systems are defined as "specialized means of navigation" and are addressed in FAR §§ 121.389 and 121.355. They are self-contained, dead reckoning systems which have no "position fixing" capabilities.
- Loran C, GPS, and Omega systems, however, are "position fixing" or "position keeping" devices which receive signals from an external source. Loran C and Omega are nonvisual ground aids and are addressed in FAR §§ 121.103 and 121.121, en route navigational facilities.

(e) Class II navigation operations using VOR, VOR/DME, and/or NDB can be conducted under certain conditions (see section 4) provided the airplane's position is reliably fixed (at least once each hour) to the degree of accuracy required for the control of air traffic.

25. GPS NAVIGATION. GPS is a satellite-based radio navigation system that uses precise range measurements from GPS satellites to determine a precise position anywhere in the world. The GPS constellation consists of 24 satellites in various orbital planes approximately 11,000 nautical miles (NM) above the earth. The satellites broadcast a timing signal and data message that the airborne equipment processes to obtain satellite position and status data, and to measure how long each satellite's radio signal takes to reach the receiver. By knowing the precise location of each satellite and precisely matching timing with the atomic clocks on the satellites, the receiver can accurately measure the time the signal takes to arrive at the receiver and thus determine the satellite's precise position. A minimum of three satellites must be in view to determine a two-dimensional position. Four satellites are required to establish an accurate three-dimensional position. GPS equipment determines its position by precise measurement of the distance from selected satellites in the system and the satellite's known location. The accuracy of GPS position data can be affected by various factors. Many of these accuracy errors can be reduced or eliminated with mathematics and sophisticated modeling, while other sources of errors cannot be corrected. The following are examples of those errors which cannot be corrected:

- Atmospheric propagation delays can cause relatively small measurement errors, typically less than 100 feet. Ionospheric propagation delays can be partially corrected by sophisticated error-correction capabilities
- Slight inaccuracies in the atomic clocks on the satellites can cause a small position error of approximately 2 feet
- Receiver processing (such as mathematical rounding and electrical interference) may cause errors that are usually either very small (which may add a few feet of uncertainty into each measurement) or very large (which are easy to detect). Receiver errors are typically on the order of 4 feet
- Conditions that cause signal reflections before the satellite's transmitted signal gets to the receiver can cause small errors in position determination or momentary loss of the GPS signal. While advanced signal processing techniques and sophisticated antenna design are used to minimize this problem, some uncertainty can still be added to a GPS measurement
- A satellite's exact measured orbital parameters (ephemeris data) can contain a small error of approximately 4 feet

A. *System Operation.*

(1) The Department of Defense (DOD) is responsible for operating the GPS satellite constellation and constantly monitors the GPS satellites to ensure proper operation. Every satellite's ephemeris data are sent to each satellite for broadcast as part of the data message sent in the GPS signal. The GPS is a system of cartesian earth-centered, earth-fixed coordinates as specified in the DOD World Geodetic System 1984 (WGS-84). Navigation values, such as groundspeed and distance and bearing to a way point, are computed from the aircraft's latitude/longitude and the location of the waypoint. Course guidance is usually provided as a linear deviation from the desired track of a great circle course between defined way points.

(2) GPS navigation capability from the 24 satellite constellation is available 24 hours a day anywhere in the world. GPS status is broadcast as part of the data message transmitted by the satellites. Additionally, system status is planned to be available through Notices to Airmen (NOTAM). Status information is also available by means of a telephone data service from the U.S. Coast Guard. The GPS status recording is available 24 hours a day ((202) 313-5906). Availability of suitable navigation capability from the satellite constellation is expected to approach 100 percent.

(3) GPS signal integrity monitoring will be provided by the GPS navigation receiver using receiver autonomous integrity monitoring (RAIM). For GPS sensors that provide position data only to an integrated navigation system (e.g., FMS, multi–sensor navigation system), a level of GPS integrity equivalent to that of RAIM may be provided by the integrated navigation system. Availability of RAIM capability to meet non–precision approach requirements in the United States with the 24 satellite constellation is expected to exceed 99 percent.

B. *Selective Availability (SA).* SA is essentially a method by which DOD can artificially create a significant clock and ephemeris error in the satellites. This feature is designed to deny an enemy nation or terrorist organization the use of precise GPS positioning data. SA is the largest source of error in the GPS system. When SA is active, the DOD guarantees horizontal position accuracy will not be degraded beyond 100 meters 95 percent of the time, and beyond 300 meters 99.99 percent of the time.

C. *Portable Units.* All portable electronic systems and portable GPS units must be handled in accordance with the provisions of FAR § 91.21. The operator of the aircraft must determine that each portable electronic device will not cause interference with the navigation and communications systems of the aircraft on which it is to be used. Portable GPS units which are attached by Velcro tape or hard yoke mount that require an antenna (internally or externally mounted) are considered to be portable electronic devices and are subject to the provisions of FAR § 91.21. All portable GPS equipment attached to the aircraft by a mounting device must be installed in an approved manner and in accordance with FAR Part 43. Questions concerning installation should be referred to an avionics or airworthiness inspector. A critical aspect of any GPS installation is the installation of the antenna. Shadowing by the aircraft structure can adversely affect the operation of the GPS equipment. FAA approval of avionic components, including antennas, requires an evaluation of the applicable aircraft certification regulations prior to approval of an installation. The regulations require that the components perform their intended functions and be free of hazards in and of themselves and to other systems as installed. Pilots should be aware that a GPS signal is weak, typically below the value of the background noise. Electrical noise or static in the vicinity of the antenna can adversely affect the performance of the system. It is recommended that system installations be flight tested in conjunction with other navigation equipment prior to using the system for actual navigation. Unless a portable GPS receiver is TSO C-129 approved, it is not to be used as a basis for approval of IFR operations in the NAS or the NAT MNPS.

D. *Receiver Autonomous Integrity Monitoring (RAIM).* A technique whereby a civil GPS receiver/processor determines the integrity of the GPS navigation signals using only GPS signals or GPS signals augmented with altitude. This determination is achieved by a consistency check among a series of satellites being tracked. At least one satellite in addition to those required for navigation must be in view for the receiver to perform the RAIM function.

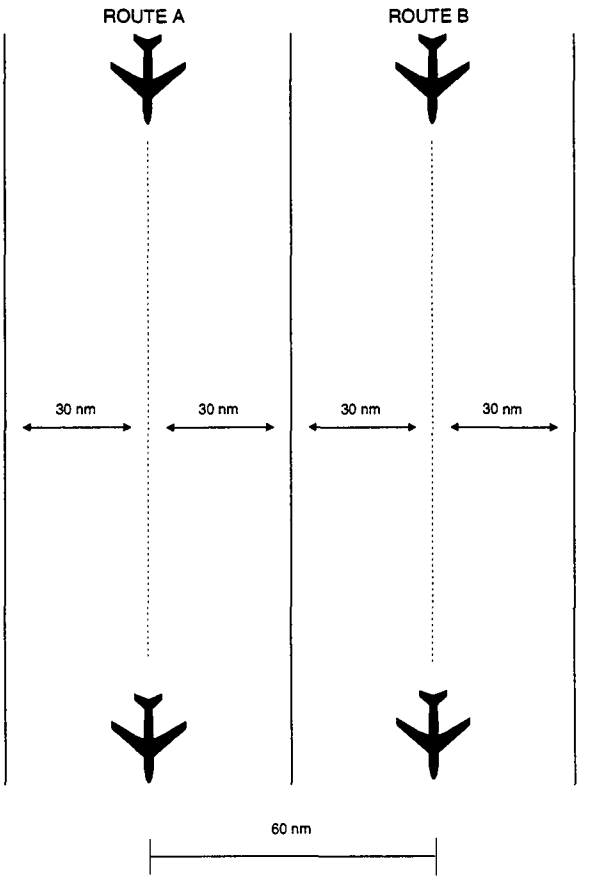
E. *System Availability.* The percentage of time (specified as 98 percent) that at least 21 of the 24 satellites must be operational and providing a usable navigation signal.

27. PROTECTION OF PERSONS AND PROPERTY. The need to ensure protection of persons and property both in flight and on the ground is fundamental to the FAR. Many of the design and performance requirements in aircraft certification rules are established to provide this protection. This protection is also extensively addressed in the operating and equipment rules related to air navigation. It is important that the regulations provide this protection equally to persons and property both in flight and on the ground. Approvals of route and areas of en route operation must take into account the need to protect persons and property on the ground as well as in flight.

28.–30. RESERVED.

FIGURE 4.1.1.1.
EXAMPLES OF LATERAL SEPARATION IN THE NORTH ATLANTIC MNPS AIRSPACE AND LATERAL SEPARATION ON FEDERAL AIRWAYS

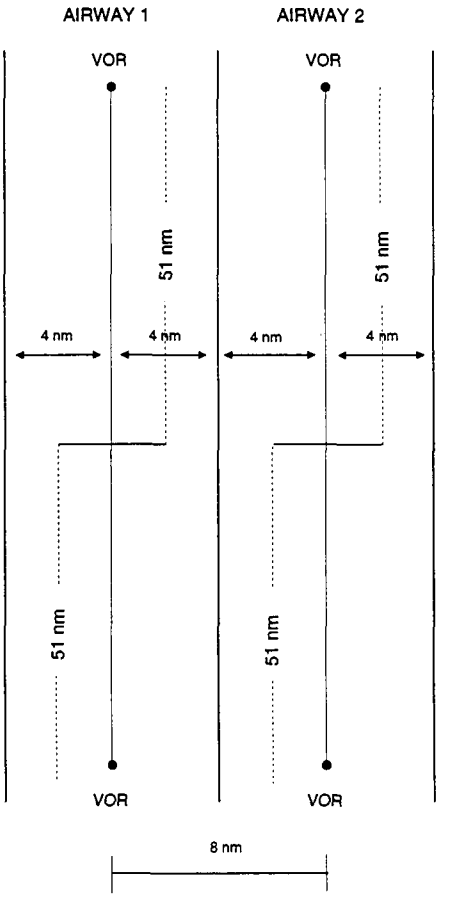
EXAMPLE OF LATERAL SEPARATION IN THE NORTH ATLANTIC MNPS AIRSPACE



Separation Standard

Minimum lateral distance between routes in the North Atlantic MNPS airspace is 60 nm. An aircraft deviating more than one-half the separation standard or 30 nm from centerline violates the protected airspace of the adjacent route.

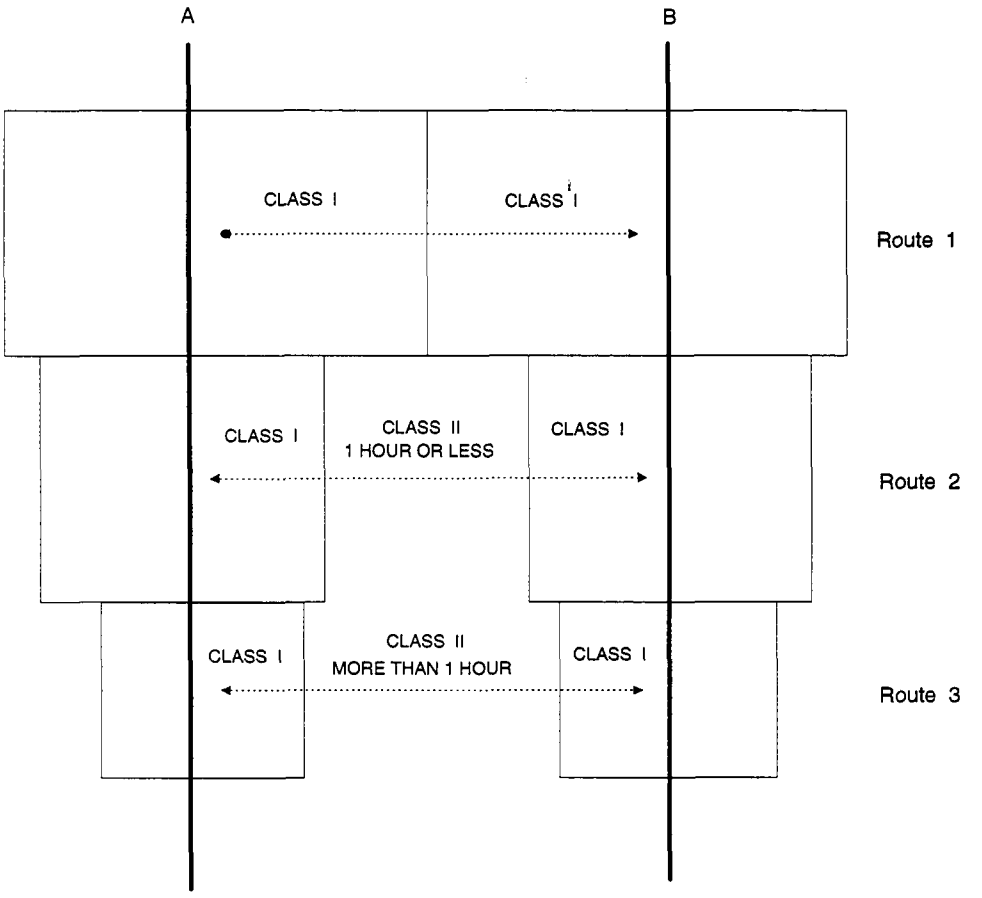
EXAMPLE OF LATERAL SEPARATION ON FEDERAL AIRWAYS



Separation Standard

Each federal airway includes the airspace within parallel boundary lines 4 nm either side of centerline up to a distance of 51 nm from the navigational aid. See FAR 71.5 for explanation of protected airspace beyond 51 nm. Minimum lateral distance between airways is 8 nm. An aircraft deviating more than one-half the separation standard or 4 nm from centerline violates the airspace of the adjacent airway.

FIGURE 4.1.1.2.
ILLUSTRATION OF CLASS I AND CLASS II NAVIGATION



NOTE: The area encompassed by the cylinders respresents the volume of airspace within the operational service volume (OSV) of ICOA standard NAVAID'S. The altitude of the aircraft with respect to the location of the NAVAID is a primary factor in determining OSV range.

Route 1. An aircraft navigating from A to B is conducting Class I navigation because it remains within the OSV of ICAO standards NAVAID's during the entire flight.

Route 2. An aircraft navigating from A to B is conducting Class I navigation, while within the OSV of the NAVAID's. It is conducting Class II navigation during the portion of the route outside the OSV of the NAVAID's. Because the duration of the Class II navigation is 1 hour or less, long-range navigation equipment or a flight navigator may not be required.

Route 3. An aircraft navigating from A to B is conducting Class I navigation while within the OSV of the NAVAID's. It is conducting Class II navigation when outside the OSV of the NAVAID's. The duration of the Class II navigation is more than 1 hour. Therefore, long-range navigation equipment or a flight navigator is required.

[PAGES 4-17 THROUGH 4-22 RESERVED]

CHAPTER 1. AIR NAVIGATION AND COMMUNICATIONS

SECTION 2. AIR NAVIGATION APPROVAL REQUIREMENTS

31. GENERAL. This section contains direction and guidance to be used by inspectors for approving operator requests for air navigation operations. Inspectors approve these operations by issuing appropriate operations specifications paragraphs, such as B36. Except for Class I navigation, the approval process normally requires validation testing. The five phases of the validation test process are described in volume 3, chapter 9, section 2. Volume 3, chapter 9, section 8, contains a detailed discussion of validation testing requirements. This section provides additional guidance specifically related to air navigation requirements.

33. INSPECTOR—SUBJECT FAMILIARIZATION AND APPROVAL REQUIREMENTS. Once an operator has requested approval for air navigation operations, it is essential that inspectors fully understand the concepts, national policies, standard practices, direction, and guidance related to the area of proposed operations. Section 1 and subsequent sections of this chapter contain much of this information and additional references for more detailed information and guidance. In addition, Federal Aviation Administration (FAA) navigation technical specialists are available to assist principal inspectors in understanding, evaluating and approving air navigation operations. When processing operator requests for air navigation operations (especially for new approvals), principal inspectors should request guidance from a navigation specialist at one of the following locations: the San Francisco (SFO) International Field Office (IFO) at (415) 876-2756, the New York (NYC) Flight Standards District Office (FSDO)–15 at (516) 228-8040 x229, or the operations section of AFS–400.

35. DETERMINING THE CLASS OF NAVIGATION. The first determination that must be made concerning an air navigation approval request is the category of operation proposed. The inspector must determine whether the proposed operation is Class I navigation, Class II navigation, or both. The decisive factor in this determination is the operational service volume of public navigational aids (NAVAID) within the proposed area of operation. If the minimum en route flight altitudes specified and the locations of the public NAVAID's ensure that the flight will always be within the operational service volume, the entire en route operation is Class I navigation. In situations where the entire area of operation (at the minimum flight altitude specified) is outside (beyond) the operational coverage volume of public NAVAID's, the operation is Class II navigation. When portions of the proposed area of operation ensure that flights are continuously within the operational service volumes of public NAVAID's, that portion of the flight is Class I navigation, and the remaining portion is Class II navigation (see sections 3 and 4 of this chapter for in-depth discussions of Class I and Class II navigation).

A. Flight Altitude. It is important to understand that the minimum flight altitude is a key factor in the determination of the category of navigation (Class I or Class II). The operational service volume of a particular public NAVAID is heavily influenced by flight altitude. For example, at high altitude (above flight level (FL) 180), most very high frequency omnidirectional range stations (VOR) published for use at these altitudes have an operational service volume that extends to a radius of at least 130 nautical miles (NM) from the facility. However, at low altitudes (below 10,000 feet), the operational service volume of many VOR's seldom exceeds 40 NM. Therefore, it is highly probable that, for a route length of 260 NM between VOR's, operations above FL 180 would be Class I navigation and operations conducted below 10,000 feet would include both Class I and Class II navigation. The Class II navigation portion would begin at the edge of the operational service volume of the first VOR and end at the edge of the operational service volume of the second VOR. If the inspector determines that the proposal only involves Class I navigation, the direction and guidance in section 3 will be used. If the proposal involves both Class I and Class II navigation, the direction and guidance in sections 3 and 4 will be used for evaluation and approval or denial of the proposal.

B. Range of NAVAID's. Generally, determination of the exact range (operational service volume) of the NAVAID's intended to be used is not necessary. A flight departing from the continental United States (U.S.) with a destination in Europe, for example, would obviously perform both Class I and Class II

navigation and require equipment appropriate for both. In other situations it can be readily determined that flight operations will be conducted entirely within the operational service volume of federal NAVAID's. However, sometimes a determination of the exact range of a NAVAID is required to evaluate compliance with the requirement for a reliable fix once each hour. In the U.S., the frequency management branch in each region may be contacted to determine if a particular NAVAID has been flight-checked to a range greater than standard.

C. U.S./Coastal Operations. Within the U.S. and in nearby coastal areas under U.S. control, the Class I/Class II determination is simplified since any published instrument flight procedure (victor or jet airway, standard instrument departure (SID), or standard terminal arrival (STAR)) must be within the operational service volume of federal NAVAID's. Therefore, within the U.S., any route or fix published for instrument flight can be authorized for Class I navigation provided that the flight is conducted at or above the specified instrument flight rules (IFR) minimum altitude and at or below any IFR maximum authorized altitude specified.

D. Foreign/Remote Operations. In foreign countries and in oceanic/remote areas, this determination is more complex. In these cases, the determination is based on an equivalence to U.S. standards. In general, VOR, VOR/distance measuring equipment (DME) routes and fixes published in those areas are within the operational service volume (or foreign equivalent) of the NAVAID's specified. However, most air traffic service (ATS) routes based on nondirectional beacons (NDB) in oceanic/remote areas are Class II navigation over a considerable portion of the route. For example, the standard service volume (or coverage) of high-powered NDB's seldom exceeds 75 NM. (In special cases, a few NDB's have been evaluated by flight inspection and have an officially designated extended service volume significantly greater than 75 NM.) The flight inspection field office (FIFO) assigned responsibility for the geographic areas in question is the best and most up-to-date source of information on the operational service volume of these NAVAID's.

37. SPECIAL OPERATIONS. After determining whether a particular operation is Class I navigation, Class II navigation, or a combination of both, another important step is to determine if the operation involves any specific navigation authorizations to operate into special areas of operation or to use special navigation equipment or special navigation techniques.

A. Special Areas of Operation. Examples of special areas of operation include the following:

- Areas of magnetic unreliability
- North Atlantic Minimum Navigation Performance Specification (NAT/MNPS) airspace
- Canadian MNPS airspace
- Central East Pacific (CEPAC) Composite airspace
- North Pacific (NOPAC) airspace
- Sensitive international areas
- Arctic Ocean or Antarctic Ocean
- Western Atlantic, the Caribbean Sea, and the Gulf of Mexico
- South Atlantic and Gulf of Mexico control areas (Atlantic and Gulf routes)

B. Special Navigation Equipment. Examples of special navigation equipment include the following:

- Private NAVAID's or broadcast stations
- Area Navigation (RNAV)
- Long-Range Navigation (Loran C)
- DECCA
- Tactical Air Navigation (TACAN)
- Omega
- Inertial Navigation Systems (INS) and Inertial Reference Systems (IRS)
- Doppler
- Global Positioning System (GPS)

C. Special Navigation Techniques. Examples of special navigation techniques and/or procedures include the following:

- Pilotage
- Flight navigator
- Dead reckoning (DR)
- Celestial
- Pressure pattern
- Free gyro or grid

39. AIRWORTHINESS OF NAVIGATION EQUIPMENT. After determining the requirements related to any special operation, another important step is to determine whether the navigational equipment and systems are airworthy and can perform their required functions. In all cases, it is necessary for the

operator to provide written evidence that the proposed navigational systems and equipment are certificated for the type of operation (visual flight rules (VFR) or IFR) and the category of operation (Class I or Class II). In certain cases involving special areas of operation, such as areas of magnetic unreliability and NAT/MNPS, the airworthiness approval must reflect that these special requirements are also met. The written evidence may take the form of a type certificate (TC), supplemental type certificate (STC), or a Field Approval (FAA Form 337, "Major Repair and Alteration (Airframe, Powerplant, Propeller, or Appliance)"). This determination must be coordinated closely with the principal avionics inspector (PAI), or the regional Flight Standards airworthiness branch.

A. Class I Navigation. In the case of Class I navigation with conventional navigation equipment (such as VOR, VOR/DME, NDB), a statement in the FAA-approved flight manual (or an STC) that the navigation system and/or equipment is approved for IFR flight is usually sufficient.

B. Area Navigation (RNAV). RNAV systems used for IFR Class I navigation (except operations in the U.S. Class A airspace) must reflect a statement that the system meets the reliability and performance criteria of Advisory Circular (AC) 90-45A, "Approval of Area Navigation Systems for Use in the U.S. National Airspace System," (or equivalent). RNAV systems used for VFR operations (Class I and/or Class II) must reflect an approval for VFR use.

C. Class II Navigation. Class II navigation systems used for IFR operations must reflect a statement that the system is approved for IFR flight and, if required, for any special areas of operation. The following are examples of Class II navigation systems requiring airworthiness approvals:

(1) Omega systems used as the sole means of Class II navigation must be approved under the provisions of AC 120-37, "Operational and Airworthiness Approval of Airborne Omega Radio Navigational Systems as a Sole Means of Long Range Navigation Outside the United States," (or equivalent).

(2) Omega systems used to update self-contained Class II navigation systems must be approved under the provisions of AC 120-31A, "Operational and Airworthiness Approval of Airborne Omega Radio Navigation Systems as a Means of Updating Self-Contained Navigation Systems," (or equivalent).

(3) Loran C systems must be approved for the area of operation under the provisions of AC 20-121A, "Airworthiness Approval of Airborne Loran C Navigation Systems for Use in the U.S. National Airspace System (NAS)," (or equivalent). See also AC 90-92, "Guidelines for the Operational Use of Loran C Navigation Systems Outside the U.S. National Airspace System (NAS)."

(4) Inertial-based and Doppler systems must be approved under the provision of Federal Aviation Regulations (FAR) § 121.355 and Appendix G. This approval is not specifically required for FAR Part 135, but the same approval criteria apply.

(5) GPS systems used for Class II navigation must be approved under TSO C–129. Additionally, Installation criteria is outlined in "Airworthiness Approval of Multi Sensor NAV System for Use in U.S. National Airspace System and Alaska," AC 20–130; and "Airworthiness Approval of Global Positioning System (GPS) Navigation Equipment for use as a VFR and IFR supplemental Navigation System," AC 20–138.

41. TRAINING PROGRAMS AND MANUALS. Other important areas that must be considered are training programs and company manuals for the equipment used. The training programs and company manuals must adequately address the special characteristics of the proposed area of operation and the operational (navigation) practices and procedures that must be used. Other sections of this chapter provide additional direction and guidance on some specific requirements for training programs and company manuals for the various navigation systems and/or areas of operation.

43. MINIMUM EQUIPMENT LISTS. Additionally, most approvals of navigation equipment and/or areas of operation new to a particular operator also require changes to the company minimum equipment list (MEL). In all cases, principal inspectors shall review the company MEL to ensure that complete and accurate direction and guidance are provided to company personnel.

45. NAVIGATION PRACTICES, TECHNIQUES, AND PROCEDURES. Navigation practices, techniques, and procedures are other important parts of the approval process. They are especially significant in long-range navigation systems and in operations using RNAV systems. The approval of these operations almost always necessitates changes in cockpit checklists and operating practices and procedures. Due to the complexity of these operations, the necessary changes must be determined on a case-by-case basis considering the operator, the equipment, and the area of operations. In the case of Class II navigation, it is FAA policy that the practices, techniques, and procedures in AC 90-79, "Recommended Practices and Procedures for the Use of Electronic Long-Range Navigation Equipment," (or equivalent)

shall be incorporated in the operator's approved long-range navigation programs.

47. VALIDATION TESTING REQUIREMENTS. It is essential for the inspector to evaluate the need for validation testing. In a simple case, such as approving Class I navigation in additional areas within the U.S. using conventional VOR/DME systems, a validation test is not necessary. However, in more complex cases, validation testing is essential to demonstrate the operator's capability and competence to safely conduct the proposed operation (see volume 3, chapter 9, section 8).

49. GUIDANCE FOR USE OF AIRCRAFT EQUIPMENT SUFFIX /G. This paragraph describes a new equipment suffix available for use by aircraft equipped with a flight management system (FMS) and the eligibility of these aircraft to use new and evolving terminal area and en route flight operations. POI's should refer to this paragraph for policy, guidance, and descriptions of the specific aircraft equipment capability required to use the /G suffix.

A. General. FAA Order 7100.11, "Flight Management System (FMS) Procedures Program," contains the criteria to develop FAR Part 97 procedures, SID's, and STAR's, which will contain the note "FOR USE BY SLANT GEE (/G) AIRCRAFT ONLY." The order defines "/G" as an aircraft equipment suffix denoting that the aircraft has an FMS that meets the requirements of the following: AC 20–129, "Airworthiness Approval of Vertical Navigation (VNAV) Systems for Use in the U.S. NAS and Alaska"; AC 20-130, "Airworthiness Approval of Multi-Sensor Navigation Systems for Use in the U.S. National Airspace System (NAS) and Alaska"; AC 25–15, "Approval of Flight Management Systems in Transport Category Airplanes"; ARINC Specification 424–11; and RTCA DO-187. (FAA Order 7110.65, "Air Traffic Control," and the "Airman's Information Manual" (AIM), paragraph 5–7, are being amended to avoid conflict in the collective definitions.) Compliance with the following criteria will enable the operator to file /G on flight plans. The /G designation will also permit air traffic service personnel to initiate clearances at their discretion without receiving prior requests from flightcrews. To be eligible to utilize the /G suffix on a flight plan, the following criteria must be met:

(1) Required Airborne Equipment. This consists of dual or single FMS's that meet the specifications of AC's 20–129, 20–130, and 25–15; or equivalent criteria accepted by the FAA.

(2) Additional Requirements.

(a) Flightcrews must have the procedural information and charts depicting the procedure to be flown.

(b) Unless otherwise authorized by the FAA, the waypoints describing any applicable route or procedure must be automatically loaded into the FMS flight plan from the FMS data base in the sequence they are to be flown. Manual input is not acceptable.

(c) Until international agreement is reached, use of the /G classification is authorized only in airspace where a U.S. air traffic facility provides air traffic separation service. For the /G designation to continue to be used in flight after a failure, the required navigation capability must still be met, or the flight plan classification must be downgraded to the appropriate capability classification (such as /R, /A).

B. Aircraft /G Eligibility and Assessment. Aircraft considered eligible to meet the criteria listed in this paragraph include the following:

- A-300-600; A-310; A-320; A-330; A-340
- B-737-300/400/500; B-747-400; B-757; B-767; B-777
- FK-100
- G-IV
- MD-11; MD-88

C. Inquiries. Any comments or inquiries concerning the criteria and guidance to qualify and use the /G equipment suffix or any requests for assessment of additional aircraft should be directed to the Technical Programs Division, AFS-400, at (202) 267–8452.

51. FAA APPROVAL OF GLOBAL POSITIONING SYSTEM (GPS) EQUIPMENT.

A. *GPS Equipment Classes.* GPS equipment is categorized into classes A(), B(), and C() (ref. Technical Standing Order (TSO)–C129). See figure 4.1.2.1.

(1) *Class A().* Equipment incorporating both the GPS sensor and navigation capability. This equipment incorporates Receiver Autonomous Integrity Monitoring (RAIM). Class A1 equipment includes en route, terminal, and nonprecision approach navigation capability. Class A2 equipment includes en route and terminal navigation capability only.

(2) *Class B().* Equipment consisting of a GPS sensor that provides data to an integrated navigation system (i.e., flight management system, multi-sensor navigation system, etc.). Class B1 equipment includes RAIM and provides en route, terminal, and nonprecision approach capability. Class B2 equipment includes

RAIM and provides en route and terminal capability only. Class B3 equipment requires the integrated navigation system to provide a level of GPS integrity equivalent to RAIM and provides en route, terminal, and nonprecision approach capability. Class B4 equipment requires the integrated navigation system to provide a level of GPS integrity equivalent to RAIM and provides en route and terminal capability only.

(3) *Class C().* Equipment consisting of a GPS sensor that provides data to an integrated navigation system (i.e., flight management system, multisensor navigation system, etc.), which provides enhanced guidance to an autopilot or flight director in order to reduce flight technical error. Class C1 equipment includes RAIM and provides en route, terminal, and nonprecision approach capability. Class C2 equipment includes RAIM and provides en route and terminal capability only. Class C3 equipment requires the integrated navigation system to provide a level of GPS integrity equivalent to RAIM and provides en route, terminal, and nonprecision approach capability. Class C4 equipment requires the integrated navigation system to provide a level of GPS integrity equivalent to RAIM and provides en route and terminal capability only.

B. *Approval Criteria.* A GPS installation with a TSO C-129 authorized navigation system in Class A1, A2, B1, B2, C1, or C2 may be used in combination with other approved LRNS for unrestricted operations in NAT MNPS airspace or may be used as the sole means of long-range navigation on the special routes that have been developed for aircraft equipped with only one LRNS and on the special routes developed for aircraft equipped with short-range navigation equipment. The basic integrity for these operations must be provided by RAIM or an equivalent method. A single GPS installation in Class A1, A2, B1, B2, C1, or C2 which provides RAIM for integrity monitoring may also be used on those short oceanic routes which have only one required means of long-range navigation.

C. *Avionics.* Documentation must be provided which validates approval of the installed GPS airborne receiver in accordance with Notices 8110.47, 8110.48, AC 20-129 and AC 20-130A, as appropriate, or other applicable airworthiness criteria established for GPS installations. When it has been established that the airborne system has been certified for GPS IFR operations, the following criteria should be used to determine the operational suitability of airborne systems for GPS IFR use.

D. *Initial Installations and Continued Airworthiness.* The operator must assure that the equipment is properly installed and maintained. No special requirements, other than the standard practices currently applicable to navigation or landing systems, have been identified that are unique to GPS e.g., Airworthiness Directives, Service Bulletins.

52.–70. RESERVED.

FIGURE 4.1.2.1.
GPS EQUIPMENT CLASSES

GPS IFR EQUIPMENT CLASSES/CATEGORIES (TSO-C129)						
Equip-ment Class	RAIM	Integrated Navigation System to Provide RAIM Equivalent	Oceanic	En Route	Terminal	NonPrecision Approach Capable
Class 1 - GPS sensor and navigation capability.						
A1	Yes		Yes	Yes	Yes	Yes
A2	Yes		Yes	Yes	Yes	No
Class B - GPS sensor data to an integrated navigation system (i.e. FMS, multi-sensor navigation system, etc.)						
B1	Yes		Yes	Yes	Yes	Yes
B2	Yes		Yes	Yes	Yes	No
B3		Yes	Yes	Yes	Yes	Yes
B4		Yes	Yes	Yes	Yes	No
Class C - GPS sensor data to an integrated nav. system (as in Class B) which provide enhanced guidance to an autopilot, or flight director, to reduce flight technical errors enhanced guidance to an autopilot, or flight director, to reduce flight technical errors						
C1	Yes		Yes	Yes	Yes	Yes
C2	Yes		Yes	Yes	Yes	No
C3		Yes	Yes	Yes	Yes	Yes
C4		Yes	Yes	Yes	Yes	No

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CHAPTER 1. AIR NAVIGATION AND COMMUNICATIONS

SECTION 4. CLASS II NAVIGATION

111. GENERAL.

A. This section provides concepts, direction, and guidance which shall be used by Federal Aviation Administration (FAA) inspectors to evaluate and approve or deny requests for authorization to conduct Class II navigation operations not previously approved for a particular operator. This section also amplifies the general concepts, direction, and guidance provided in section 1. Specific "standard practices" are provided in this section for evaluating Class II navigation operations using navigation systems which, within particular areas of en route operation, have well-known operational characteristics and limitations. When an operator requests approval to conduct Class II navigation using a means of navigation, or in areas not addressed by these standard practices, a request for direction and guidance must be forwarded through regional flight standards division (RFSD) to AFS-200.

B. Class II navigation is any en route flight operation or portion of a flight operation which is not Class I navigation. Any operation or portion of an en route operation which takes place outside (beyond) the officially designated operational service volumes of International Civil Aviation Organization (ICAO) standard navigational aids (NAVIAD) (VOR, VOR/DME, NDB) is Class II navigation. Additional information on the concept of Class II navigation is provided in sections 1 and 2. The various types of Class II navigation and the evaluation and approval or denial processes for these specific types are discussed in the following paragraphs.

113. VFR CLASS II NAVIGATION. VFR Class II navigation is any Class II navigation operation conducted under visual flight rules in VFR conditions (VMC in most foreign countries). The primary objectives of VFR Class II navigation and the navigational performance requirements are identical to the objectives and requirements for VFR Class I navigation. In addition, the types of VFR Class II navigation (pilotage and station-referenced) are identical to VFR Class I navigation. (See paragraphs 73 and 75)

A. The major difference between these two categories of VFR operation (Class II vs. Class I) are the navigation systems which must be used in certain special situations. For example, pilotage is not an acceptable means of conducting flight over desolate land areas or large bodies of water due to the absence of prominent landmarks. Therefore, VFR Class II navigation in these areas must use other navigational means. In addition, some navigation systems such as LORAN C have limited coverage and cannot be used for VFR Class II station-referenced operations in many areas of the world.

B. The factors which must be considered when approving VFR Class II navigation are essentially the same as VFR Class I navigation. Therefore, the direction and guidance in section 3 for approval of VFR Class I navigation shall be used for VFR Class II navigation approvals. When applying this direction and guidance, inspectors must evaluate the characteristics of the navigation system in the proposed area of operation and ensure that any ATC requirements unique to Class II navigation are met.

115. PART 135 AIRPLANE VFR CLASS II NAVIGATION STANDARD PRACTICES (TBD).

117. HELICOPTER VFR CLASS II NAVIGATION STANDARD PRACTICES (TBD).

119. IFR CLASS II NAVIGATION. IFR Class II navigation is any Class II navigation operation conducted under instrument flight rules. The primary generic IFR Class II navigation requirements are identical to the generic IFR Class I navigation requirements discussed in paragraph 85. However, in many cases, the means of navigation and the procedures/techniques necessary to satisfy these generic requirements are significantly different for IFR Class II navigation.

121. TYPES OF IFR CLASS II NAVIGATION. There are three generic types of IFR Class II navigation. These types are navigation by reference to ICAO standard NAVAID's supplemented by dead reckoning, navigation by use of pilot-operated electronic long-range navigation systems, and navigation by use of a flight navigator.

A. *ICAO Standard NAVAID's Supplemented by Dead Reckoning.* Sometimes, IFR Class II navigation requirements can be met using conventional NAVAID's (VOR, VOR/DME, and NDB) and special navigational techniques such as dead reckoning. IFR

Class II navigation using standard NAVAID's can only be conducted in areas where the air traffic control (ATC) lateral separation standards are large, 90 nautical miles (NM) or more.

(1) This type of IFR Class II navigation is based primarily on accurate dead reckoning with "reliable fixes" obtained periodically from VOR's, VOR/DME's and/or NDB's. IFR Class II navigation using ICAO standard NAVAID's supplemented by dead reckoning shall not be authorized if a reliable fix cannot be obtained for a period of more than 1 hour. Accurate dead reckoning requires that the following factors be accurate and reliable:

- Preflight planning
- Inflight planning
- Knowledge of upper air winds
- Aircraft heading information (within 2 degrees)
- Use of magnetic variation (grivation, if appropriate)
- Use of accepted dead reckoning navigation practices and procedures

(2) The major uncertainty in dead reckoning operations is the accuracy of upper air wind information (winds at altitude). Therefore, it is essential in these operations to accurately determine the actual wind (or drift correction) at specific locations and based on this known information, adjust the forecasted winds at other points along the route. This must be an ongoing process which uses the best available information to further refine the upper air wind information and adjust the aircraft's heading to account for changes in wind and magnetic variation (grivation if appropriate) to maintain the desired track. Navigational precision achieved by dead reckoning operations is directly related to the following factors:

- Flightcrew precision in accomplishing dead reckoning tasks
- Length of time between "reliable fixes"
- Accuracy of the navigation equipment used (VOR, VOR/DME, NDB)
- Accuracy of aircraft heading information
- Accuracy of the magnetic variation (grivation) used
- Magnitude of errors in determining the actual winds at flight altitude
- Latitude of the area of operation (higher latitude produces greater rhumb line vs. great circle errors)

(3) In this type of operation, the only practical way to establish the proper wind correction (drift angle) is to accurately track the outbound VOR radial (outbound course from NDB's) and establish the correction necessary to maintain route centerline. This wind correction must be compared to flight plan information to determine the necessary correction for subsequent legs. Usually, corrections determined in this manner remain reasonably accurate for periods of less than 1 hour and then only if there is no significant heading change en route between the NAVAID's used (that is, the course flown is a great circle between the NAVAID's).

B. *Pilot-Operated Electronic Long-Range Navigation Systems.* The vast majority of IFR Class II navigation operations are conducted using automatic pilot-operated electronic navigation systems. There are various types of automatic long-range navigation systems in use today. An automatic long-range navigation system must contain sensors which either detect motion or changes in geographic position and a computational capability which generates the guidance information necessary to adhere to the selected route centerline and determine arrival at selected waypoints. A system can consist of a single unit which combines these features or a combination of various sensors and computers such as the flight management system (FMS) in the B757/B767. Inertial, Doppler, and Omega navigation systems or combinations of these systems are the primary means of conducting IFR Class II navigation in most oceanic and remote land areas. Automatic Loran C navigation systems can also be used in certain limited areas of the northern hemisphere where reliable signal coverage exits. Space-based systems such as NAVSTAR Global Positioning System (GPS) are likely to provide highly accurate coverage over most of the world in the future. Sections 6 through 8 provide detailed discussion, guidance and direction related to the specifics of each of these systems. This section provides general direction and guidance which is appropriate to all automatic pilot-operated electronic long-range navigation systems. The basic types of automatic long-range navigation systems are described in the following subparagraphs.

(1) *Inertial Navigational Systems (INS).*

(a) INS functions as a high precision dead reckoning device. It is not a "position fixing" device. It is self-contained and does not depend on input from sources external to the aircraft. The initial geographic position must be inserted by a crewmember (align-

ment). The inertial sensors detect aircraft movement by measuring acceleration and velocity. These factors are applied to the initial position to calculate subsequent changes in position. These sensors can detect changes in velocity as small as 1 or 2 nautical miles per hour.

(b) Since INS is not a "position fixing" device, it does not have the ability to detect position errors. Errors induced while inserting the initial position can remain undetected by the system. If such errors are made, navigational guidance from the system will be erroneous throughout the flight unless the errors are detected and corrected by the flightcrew. INS errors are time dependant. That is, they increase with time (typically 1 NM to 2 NM per hour). The major limitations associated with INS are related to sensor inaccuracies, the dependance on proper alignment by the flightcrew, and the increase in error as flight time increases.

(2) *Doppler Navigation Systems (DNS).*

(a) DNS is a dead reckoning device; it is not a "position fixing" device. DNS detects aircraft velocity through changes in the radar signal reflected from the earth's surface using a phenomena called doppler shift or the doppler effect. Most doppler systems require input from the aircraft's compasses and as a result doppler systems are usually much less accurate than INS. Since DNS requires aircraft compass input they cannot be used in areas of magnetic unreliability unless special navigational techniques such as free gyro or grid are used.

(b) Special monitoring and compensation techniques must also be used with DNS to navigate to the degree of accuracy required for the control of air traffic. However, even when these special techniques are used, doppler systems cannot be used unless "reliable fixes" are obtained from ICAO standard NAVAID's at least once each 800 NM of flight or the DNS is frequently updated from another approved long-range navigation system such as an Omega Navigation System (ONS). Typical errors in a properly maintained and compensated DNS are 2 degrees or approximately 10 NM for each 300 NM of flight. The major limitations of Doppler systems are inaccuracies due to compass input, magnetic variation estimates, and velocity measurement errors. For these reasons DNS errors are time and distance dependent, that is, the error increases as flight time and flight distance increases.

(3) *Omega Navigation System (ONS).*

(a) An ONS functions as a "position fixing" device. It is referenced to signals from ground-based stations. An ONS is usable only within areas where signal quality and signal coverage meet certain standards. The accuracy of ONS can be affected by noise sources and signal irregularities. Most makes of Omega systems require input from the aircraft compasses, therefore an ONS *cannot* be used in areas of magnetic unreliability unless special navigational techniques such as free gyro or grid are used. To use an ONS, the initial geographic position and the precise time (Coordinated Universal Time (UTC)) must be entered into the system (initialization).

(b) The ONS detects changes in position through changes in the signal as the aircraft moves. Errors in entering the initial position and/or time can remain undetected by the system. If such errors are made, the navigation guidance will be erroneous throughout the flight unless these errors are detected and corrected by the flightcrew. An ONS cannot reliably detect position errors greater than approximately 8 NM's. When an error greater than 8 NM's occurs, this error is either retained (8 NM offset) or the cause of the error such as a solar disturbance reoccurs which then produces even greater errors. ONS errors are not flight time dependent. ONS errors are dependent on signal quality, signal strength, and signal geometry (typical ONS errors are 2 NM to 4 NM). The major limitations of ONS are related to susceptibility to signal disturbance, limitations in signal coverage, and dependence upon aircraft compass input.

(4) *LORAN C Navigation Systems.*

(a) An automatic LORAN C navigation system is a "position fixing" device. LORAN C navigation systems detect the aircraft's geographic position through measurements of the signals transmitted from ground-based stations. If usable signals can be received from at least four separate ground-based stations (three lines of position(LOP)), position ambiguity can be detected and automatically resolved by the navigation system. Since LORAN C is station-referenced, its accuracy can be affected by noise sources and signal irregularities. Since most automatic LORAN C navigation systems depend upon aircraft compass input, LORAN C *cannot be* used in areas of magnetic unreliability unless special navigation techniques such as free gyro or grid are used.

(b) The accuracy of LORAN C is not flight time dependant. The accuracy of these systems is dependent on the signal quality, signal strength, and signal geometry (typical errors are less than 1 NM). The major limitation to the use of LORAN C systems is inadequate signal coverage in most areas of the world. LORAN C coverage is nonexistent in the southern hemisphere and only limited coverage exists in the northern hemisphere.

(5) *Space-Based Navigation Systems (NAVSTAR GPS).*

(a) Although not currently operational for civil use (1988), NAVSTAR GPS (or future equivalent) is expected to be used as the navigation system of the future. NAVSTAR GPS is a three-dimensional "position fixing" device. GPS determines the aircraft's geographic position and absolute altitude (referenced to the center of the earth) through measurement of the signals received from satellites. The position calculated by the systems is expected to be very accurate. This space-based system is expected to provide world-wide coverage and is expected to provide sufficient accuracy to permit the system to be used for Class I and Class II navigation. The accuracy available to civil users is expected to be on the order of several hundred meters.

(b) The major limitation of these systems is expected to be related to loss of accuracy in some areas due to satellite failure. This accuracy degradation would exist until a new satellite is positioned to replace the failed unit.

C. *Flight Navigator.* Although flight navigators were extensively used in the past, technological improvements (INS, ONS) and higher levels of required navigation precision have limited the use of flight navigators. However, in many oceanic areas, flight navigators can still be used to meet IFR Class II navigation requirements. Flight navigators can also be used, in lieu of the pilots, to operator electronic long-range navigation systems such as INS or ONS.

123. IFR CLASS II NAVIGATION APPROVALS. General direction and guidance on air navigation approvals are in sections 1 and 2. Specific direction and guidance for approving IFR Class II navigation is discussed in the following subparagraphs and sections of this chapter.

A. *Degree of Accuracy Required.* Inspectors must determine that the navigation equipment and operational procedures/techniques used permit reliable IFR Class II navigation to the degree of accuracy required for the control of air traffic. See paragraph 11. The degree of accuracy required for any IFR Class II navigation operation must provide for the following criteria:

- Meets regulatory requirements
- Meets the standard practices in this handbook
- Meets the requirements of Part B of the operations specifications
- Provides accepted, safe operating practices
- Permits the safe separation of aircraft
- Assures obstacle avoidance along the route of flight
- Assures-adequate protection for persons and property on the ground
- Permits reliable navigation to the intended destination and any necessary alternate or diversionary airports

B. *Airworthiness of Navigation Equipment.* Inspectors must determine that any required navigation equipment is airworthy for IFR flight and installed in accordance with approved data. The operator must provide written evidence which shows that any navigation system used for IFR Class II navigation meets these requirements. If the operation involves flight into NAT/MNPS airspace, Canadian MNPS airspace, or areas of magnetic unreliability the operator must also provide evidence that the installed equipment is airworthy for these special areas of operations.

C. *Class II navigation Using ICAO Standard NAVAID's Supplemented by Dead Reckoning.*

(1) IFR Class II navigation using ICAO standard NAVAID's (VOR, VOR/DME, NDB) supplemented by dead reckoning *shall not* be approved for operations in the following areas:

- NAT/MNPS airspace
- Canadian MNPS airspace
- Areas of operation where the separation minimum are based on the use of VOR, VOR/DME (standard domestic separation)
- Areas of operation where the aircraft cannot be "reliably fixed" at least once each hour using nonvisual NAVAID's
- Areas of magnetic unreliability unless the flightcrew is properly qualified for the special equipment/procedures to be used and the aircraft is suitably equipped for operations without magnetic reference

(2) The following criteria must be met for any approvals of IFR Class II navigation using ICAO standard NAVAID's supplemented by dead reckoning:

(a) Route segments must be great circle routes between NAVAID's.

(b) Positive course guidance must be available from the NAVAID's at each end of the great circle route segment.

(c) Operations over routes outside the operational service volumes must not exceed 1 hour flight time. Positive course guidance provided by the

NAVAID's must also be available at least once each hour.

(d) The routes or areas of operation to be approved must realistically permit the certificate holder to consistently dead reckon to the degree of accuracy required for the control of air traffic. The amount of flight time without positive course guidance (the dead reckoning period) is a factor that must be considered. Usually dead reckoning periods which exceed 15 minutes require an air traffic control (ATC) lateral separation of 90 NM or more.

(e) The areas of operation to be approved must not affect the accuracy or reliability of the systems providing heading information such as areas of magnetic unreliability.

D. *Pilot-Operated Electronic Long-Range Navigation Systems.*

(1) Pilot-operated electronic long-range navigation systems are required for all IFR Class II navigation operations which are conducted over routes or portions of routes where "reliable fixes" cannot be obtained at least once each hour. Unless the use of a flight navigator is approved, pilot-operated, electronic long-range navigation systems are the only means by which the IFR Class II navigation requirements can be met when a "reliable fix" at least once each hour cannot be obtained. Sometimes the FAA can also require the use of these long-range navigation systems over other routes even when "reliable fixes" can be obtained more frequently. In certain special areas of operation which require high levels of navigational performance the use of a flight navigator is not appropriate and pilot-operated, electronic long-range navigation systems must be used. (See section 5) These systems must be used for all operations in the following areas:

- NAT/MNPS airspace
- Canadian MNPS airspace
- Central East Pacific airspace where composite separation is applied
- North Pacific airspace where composite separation is applied
- Any other area where positive course guidance must be continuously available (or available more often than once each hour) to provide the level of navigation performance necessary for the control of air traffic

(2) All pilot-operated electronic long-range navigation systems require the use of special navigation procedures/techniques.

NOTE: All IFR Class II navigation operations using pilot-operated, electronic long-range navigation equipment shall use the practices and procedures recommended in AC 90-79 (or equivalent procedures). Inspectors must determine that these practices and procedures are included in the certificate holder's approved training programs and operating procedures.

E. *Flight Navigator.* Except when the flight navigator is used to operate electronic long-range navigation equipment, in lieu of the pilots, operations with a flight navigator *shall not* be approved for operations in the following areas:

- NAT/MNPS airspace
- Canadian MNPS airspace
- Central East Pacific airspace where composite separation is applied
- North Pacific airspace where composite separation is applied
- Any other area where positive course guidance must be continuously available (or available more often than once each hour) to provide the level of navigation performance necessary for the control of air traffic

125. CLASS II NAVIGATION USING ICAO STANDARD NAVAID's SUPPLEMENTED BY DEAD RECKONING STANDARD PRACTICES (TBD).

127. PILOT-OPERATED ELECTRONIC LONG-RANGE NAVIGATION SYSTEMS STANDARD PRACTICES (TBD).

129. FLIGHT NAVIGATOR STANDARD PRACTICES (TBD).

131. CONFIRMATION OF SYSTEM ACCURACY AND RELIABILITY (TBD).

132.–200. RESERVED.

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CHAPTER 1. AIR NAVIGATION AND COMMUNICATIONS

SECTION 5. SPECIAL NAVIGATION AREAS OF OPERATION

201. GENERAL. Special navigation areas of operation are geographic areas having unique characteristics which require the use of special equipment, procedures, and/or techniques to safely conduct flight operations. These special areas also include operational situations when the application of standard criteria is unnecessarily restrictive and other than standard criteria are more appropriate and can be safely used. This section provides direction and guidance for the evaluation and approval or denial of an operator's request to conduct operations in these special navigation areas of operation. Special navigation areas of operation include the following:

- Areas requiring high levels of long-range navigation performance (high navigation precision) due to traffic density
- Areas where navigation by magnetic reference is unreliable and/or inappropriate
- Areas where metric altitudes/flight levels are used (altitudes in meters)
- Areas where communication difficulties are frequently encountered
- Areas where air traffic control difficulties are frequently encountered
- Areas where operations by U.S. operators have political or international sensitivity
- Areas where aircraft with unique performance characteristics require special criteria
- Areas where Class II navigation using International Civil Aviation Organization (ICAO) standard navigational aids (NAVAID) supplemented by dead reckoning can be conducted with domestic separation minimums (Atlantic and Gulf routes)
- Areas where redundant long-range navigation systems are not normally required

NOTE: The geopolitical area formerly known as the Soviet Union is now comprised of the Commonwealth of Independent States (C.I.S.) and other independent states. This group of aligned and independent states will be referred to as the C.I.S. throughout this volume.

203. AREAS REQUIRING HIGH LEVELS OF LONG-RANGE NAVIGATION PERFORMANCE. In certain special navigation areas of operation, the air traffic control (ATC) system must be designed to operate more efficiently due to the density of the air traffic. This requires levels of navigation performance higher than the normal long-range navigation standards. Significant increases in air traffic over certain busy routes, such as the North Atlantic, can be accommodated efficiently if the ATC separation minimums are reduced to permit more aircraft to fly along or as close as possible to the minimum cost routings. This reduction in separation minimums, however, can only be safely accomplished through significant improvements in ATC capabilities and the navigation performance of all aircraft operating within that route structure.

A. The options currently available to permit reductions in ATC separation minimums include use of the following:

- Independent surveillance (ATC radar)
- Dependant surveillance (data link of the aircraft's present position to the ATC system)
- Reduced lateral separation minimums
- Reduced vertical separation minimums
- Reduced longitudinal separation minimums
- A combination of reduced lateral and reduced vertical separation minimums (composite separation)

B. With the exception of independent and/or dependent ATC surveillance, the safe implementation of any of these options requires improvements in navigational performance. It is important to remember that a navigation performance standard includes all causes of navigation error. The causes are not equipment accuracy standards alone. Navigation performance standard includes consideration for flight technical errors. (see paragraph 9) Paragraphs 205, 207, and 209 discuss three types of special navigation areas of operation which require high levels of long-range navigation performance.

205. NORTH ATLANTIC MINIMUM NAVIGATION PERFORMANCE SPECIFICATIONS AIRSPACE (NAT/MNPS).

A. The NAT/MNPS as implemented in the ICAO North Atlantic Region is an extremely demanding standard. Safety of flight in this airspace is critically dependent of each operator achieving and continuously maintaining these high levels of overall navigation performance. Figure 4.1.5.1. depicts the rectangular separation as it is currently applied in NAT/MNPS airspace. This standard (implemented by FAR Part 91, Appendix C) requires each U.S. operator to acquire Federal Aviation Administration (FAA) approval before conducting any operation in NAT/MNPS airspace. The operator must obtain this approval for each airplane and navigation-system combination used for operations in this airspace. To obtain NAT/MNPS approval, the operator must show compliance with the following conditions:

- Each aircraft is suitably equipped and capable of meeting the MNPS standards
- Operating procedures are established which assure MNPS standards are met
- The flightcrews are capable of operating with sufficient precision to consistently meet MNPS requirements

B. The NAT/MNPS represents navigational performance (necessary to reduce the risk of collision) on a internationally established level. The MNPS establishes the following four demanding criteria:

(1) The average lateral deviation (for any cause) cannot be greater than 6.3 nautical miles (NM) from the exact centerline of the assigned route over any portion of the route.

(2) Ninety-five percent of all of the lateral displacements (for any cause) from the exact centerline of the assigned route cannot be greater than 12.6 NM for all flights over any portion of that route.

(3) Each operator cannot have more than 1 lateral deviation (for any cause) of 30 NM or more in 1,887 flights in the NAT/MNPS airspace. When errors of these magnitudes occur the aircraft has failed to navigate to the degree of accuracy required for the control of air traffic.

(4) Each operator cannot have more than 1 lateral deviation (for any cause) which is within ±10 NM of a multiple of the separation minimums applied in 7,693 flights in the NAT/MNPS airspace. NAT/MNPS airspace routes are separated by 60 NM. Multiples of 60 are 60, 120, 180, etc. Therefore, ±10 NM of these multiples are 50-70 NM, 110-130 NM, 170-190 NM, etc. For example, if an error of 50-70 NM occurs, the aircraft has blundered into the airspace of an adjacent route. Errors of these magnitudes are extremely serious. The potential for a collision is high because the resulting flightpath can overlap the flightpath assigned to another aircraft (possibly coming from the opposite direction).

NOTE: Operational history in NAT/MNPS airspace clearly shows that most serious navigation errors are directly related to operator/pilot error. Equipment malfunction and equipment accuracy are usually not the primary cause for these errors. Most of these serious errors are caused by the flightcrew navigating precisely to the wrong place while believing they know the actual position of the aircraft.

C. *Initial NAT/MNPS Approvals.* Each operator and each aircraft and navigation system combination must be approved before operating in NAT/MNPS airspace. Each operator must demonstrate (validate) that it can meet MNPS standards before receiving approval. Sufficient accuracy data must be collected during this demonstration to show that navigation performance meets MNPS standards.

(1) All data collection flights necessary to validate navigational performance must be conducted outside (or above or below) NAT/MNPS airspace unless additional systems (currently meeting the MNPS) are installed and used as the primary means of navigation.

(2) Inspectors must assure that requirements of Advisory Circular (AC) 120-33 (or equivalent) are fully met by the operator before approving any operation in this airspace. All NAT/MNPS approvals are granted by issuing paragraph B39 and by adding that area of en route operation to paragraph to paragraph B50 of the standard operations specifications.

D. *Maintaining NAT/MNPS Authorization.*

(1) In addition to initially meeting MNPS criteria, each operator must continuously maintain the required level of navigational performance. Each gross navigational error (errors greater than 25 NM) has a significant impact on flight safety in this airspace and must be fully investigated in a timely manner. The cause of each error must be identified and meaningful action must be taken to prevent reoccurrence of similar errors.

(2) When a particular operator (for any cause) experiences a gross navigation error rate higher than the internationally established error rate permitted in MNPS airspace, the responsible inspector must immediately notify the operator that timely action must be taken to improve navigation performance. After this

notification, inspectors must determine the effectiveness of the operator's actions as follows:

(a) If it is determined that an operator's actions will prevent the occurrence of similar errors, the operator should be permitted to continue NAT/MNPS operations with close surveillance of the operator's navigational performance. If similar errors occur (in subsequent operations) more frequently than permitted by the standard, stronger action must be taken.

(b) If an operator fails to take action to improve navigation performance, action must be initiated to suspend NAT/MNPS authorization (operations specifications).

(c) If it is determined that an operator's actions to improve navigational performance are inadequate or otherwise unsatisfactory, the operator must be notified that the corrective action is unacceptable. When an operator does not implement a satisfactory solution, the action must be initiated to suspend NAT/MNPS authorization.

NOTE: It is FAA direction and guidance that one of the agency's navigation specialists must participate in the investigation of gross navigation errors. These specialists must also participate in the evaluation of the actions proposed by the operator to preclude the occurrence of similar errors. AFS-200 must be notified as soon as possible when an inspector and/or a navigation specialist determines that actions should be taken to suspend NAT/MNPS authorization.

207. CANADIAN MINIMUM NAVIGATION PERFORMANCE SPECIFICATIONS AIRSPACE. Certain high altitude airspace in Northern Canada has been designated as Minimum Navigation Performance Specification (MNPS) airspace (see Canadian Aeronautical Information Publication (AIP)). The navigational performance criteria for operation in Canadian MNPS airspace is identical to the criteria for NAT/MNPS airspace.

A. *General Criteria.* Any aircraft/navigation system combination approved for unrestricted operation in NAT/MNPS airspace, for a particular operator, also meets Canadian MNPS criteria. A particular operator can (under most circumstances) be authorized (without recertification under AC 120-33) to conduct Canadian MNPS operations with those aircraft and navigation system combinations authorized for that operator in NAT/MNPS airspace. However, due to the unique nature of operations in high latitudes and in areas of magnetic unreliability, approval for Canadian MNPS operation is not automatic. Each proposed operation must be evaluated on its own merits.

B. *Special Factors.* The following special factors must be considered and carefully evaluated before granting air navigation approvals for operation in Canadian MNPS airspace.

(1) For operators currently authorized to use an aircraft and an Inertial Navigation System (INS) combination in NAT/MNPS airspace the following factors apply:

(a) INS systems meeting NAT/MNPS criteria automatically meet Canadian MNPS criteria.

(b) Operations at high latitude airports (greater than 67° N/S) must not be authorized unless INS platform alignment has been successfully demonstrated or approved for those latitudes.

(c) Training programs and crew procedures must provide techniques and methods for the following:

- Approaches and departures using appropriate heading references other than magnetic
- Use of ground-based NAVAID's oriented to appropriate directional references other than magnetic

(2) For operators currently authorized to use an aircraft and an Omega navigation system combination in NAT/MNPS airspace the following factors apply:

(a) The operator must show that adequate signal coverage exists within Canadian MNPS airspace to reliably meet AC 120-33 and AC 120-37 criteria.

(b) Omega installations which provide, in Canadian MNPS airspace, signal coverage and signal figure-of-merit values equivalent to those approved for that aircraft and navigation system combination in NAT/MNPS airspace may be approved for Canadian MNPS operations, provided the system is certified as airworthy for this area using heading reference systems other than magnetic.

(c) Training programs and crew procedures must provide acceptable techniques and methods for the following:

- Accurate and reliable en route navigation using heading references other than magnetic
- Approaches and departures using appropriate heading references other than magnetic

- Use of ground-based NAVAID's which are oriented to appropriate directional references other than magnetic

NOTE: It is FAA direction and guidance that one of the agency's navigation specialist must participate in the evaluation and approval or denial of proposals to use any Omega or Omega/VLF system for operations in Canadian MNPS airspace.

(3) For operators who are not currently authorized to use an aircraft and a navigation system combination in NAT/MNPS airspace, but propose to operate in the Canadian MNPS airspace, the following direction applies:

(a) The operator must meet the criteria in AC 120-33 (or equivalent) considering the conditions unique to Canadian MNPS airspace.

(b) The operator must also meet the special factors specified in B(1) and/or (2), as appropriate.

(c) All Canadian MNPS airspace approvals are granted by adding that area of en route operations to paragraph B50 of the operations specifications.

209. OPERATIONS IN AIRSPACE WHERE COMPOSITE SEPARATION IS APPLIED BY ATC. Special long-range navigation performance requirements are necessary in certain areas of the Eastern and Northern Pacific Ocean where composite separation has been applied (through international agreement) by ATC. There are two areas where composite separation is currently applied. They are the Central East Pacific (CEPAC) composite airspace and North Pacific (NOPAC) composite airspace. Operations in these areas must be conducted in accordance with paragraphs B37 and B38 of the standard operations specifications. The application of composite separation involves the use of a composite of lateral and vertical separation minimums to provide safe separation of aircraft and permit more flight tracks closer to the optimum minimum cost routing.

A. *Concept.* The application of composite separation permits the use of flight levels (FL) not normally available for high altitude flight (FL 320, FL 340, FL 360, FL 380). A pictorial comparison between composite separation minimums and normal oceanic separation minimums is provided in figure 4.1.5.2. When composite separation is used the following separation minimums currently apply:

(1) Co-altitude aircraft are still separated laterally by the standard minimums (100 NM).

(2) Aircraft assigned to the same flight track are still separated vertically by the standard minimums (2000 feet).

(3) Additional flight tracks, however, are sandwiched in between. These flight paths are separated from the adjacent flight paths by a composite of lateral separation (50 NM) and vertical separation (1000 feet).

(4) Aircraft assigned to the same flight track and altitude are separated longitudinally by 15 minutes.

NOTE: Separation minimums may change with technological advances and/or enhanced ATC practices and procedures. See ICAO Document 7030 (Regional Supplementary Procedures) for current separation minimums applied in each ICAO region.

B. *Navigational Performance.* This unique route structure requires navigational performance better than the basic oceanic standard due to the closer proximity of aircraft on adjacent flight tracks. This higher level of required navigational performance is not compatible with operations based on the use of a flight navigator and aids such as celestial, pressure pattern, and dead reckoning. Pilot-operated electronic long-range navigation systems such as INS and Omega or Doppler updated by Omega are currently the primary means of providing the required performance. Operating procedures such as those specified in AC 90-79 (or equivalent) are also necessary to consistently attain and maintain the necessary levels of navigational performance in composite airspace.

C. *Additional Requirements for Operations in the North Pacific.* Certain North Pacific (NOPAC) routes bordering C.I.S Airspace require additional navigational equipment and operational procedures. Operations on the NOPAC fixed routes require airborne radar suitable for ground mapping to monitor navigational performance, detect significant navigational errors, and avoid unauthorized overflight of C.I.S territory. The airborne radar must be operational for all flights over these routes and must be continuously used by the flightcrew to monitor flight progress over these routes.

D. *Approvals.* All CEPAC composite airspace approvals are granted by issuing paragraph B37 and by adding that area of en route operation to paragraph B50 of the standard operations specifications. Approvals for any operations into the NOPAC airspace including the composite airspace of that area are granted by issuing paragraph B38 and by adding that area of en route operation to paragraph B50 of the standard operations specifications.

211. AREAS OF MAGNETIC UNRELIABILITY. Two large areas of en route operation have unique features which significantly

complicate air navigation. These two areas are centered around the earth's magnetic poles.

A. *Concept.* Conventional magnetic compasses sense magnetic direction by detecting the horizontal component of the earth's magnetic field. Since this horizontal component vanishes near the magnetic poles, magnetic compasses are highly unreliable and unusable in an area approximately 1000 NM from each magnetic pole. Within these areas, air navigation tasks are further complicated by very rapid changes in magnetic variation over small distances. For example, when flying between the magnetic North Pole and the true North Pole, a heading of true North results in a magnetic heading of South (a magnetic variation of 180 degrees).

B. *Convergence of the Meridians.* Since these two major areas of magnetic unreliability also occur near the earth's geographic poles, the convergence of the meridians also presents additional directional complications. When flying "great circle" courses at latitudes greater than 67 degrees, convergence of the meridians can create rapid changes in true headings and true courses with small changes in aircraft position. As a result, relatively small errors in determining the aircraft's actual position can produce very large errors in determining the proper heading to fly to maintain the assigned flight path. When even small errors occur, very large navigation errors can develop over extremely short distances. An extreme example of this phenomena occurs at the earth's geographic North Pole. Flight in any direction from the exact pole is initially due South (that is, the direction to the C.I.S or the U.S. is South).

C. *Special Equipment, Techniques, and/or Procedures.* Special navigation equipment, techniques, and/or procedures are critical to operate safely in polar areas, including the two areas of magnetic unreliability. Operations based solely on magnetic references within areas of magnetic unreliability are unsafe, unacceptable, and shall not be approved. Operations within these areas can only be conducted safely if the primary heading reference is derived from sources other than magnetic.

(1) All INS's are capable of calculating true North independently from other aircraft systems. INS can be approved and safely used for operations in areas of magnetic unreliability and polar areas provided the following conditions are met:

(a) The INS is certified as airworthy for the highest latitude authorized for these operations.

(b) Ground alignment of the INS is restricted to those airports where satisfactory alignment has been demonstrated or otherwise approved.

(c) The operator's training programs and crew procedures provide acceptable techniques and methods for the following:

- Approaches and departures using appropriate heading references other than magnetic
- The use of ground-based NAVAID's which are oriented to appropriate directional references other than magnetic

(2) All current Omega and Omega/VLF systems require reliable heading information to provide useful navigational guidance. As a result, all Omega systems must use an appropriate heading reference system, other than magnetic, when operating within these areas. The current means of providing the required heading reference is through the use of "free gyro" or "grid" equipment, procedures and techniques. The gyros (compasses) necessary for these operations require special calibration, special compensation techniques, and unusual operational procedures. The special skills required to operate these systems are critical to safety of flight.

NOTE: It is FAA direction and guidance that inspectors shall not approve operations in polar areas and/or areas of magnetic unreliability using navigation systems other than INS without the participation and concurrence of one of the agency's navigation specialists.

(3) There is a wide variety of other methods, system, techniques, and procedures (including pilotage operations) which can be used for navigation in areas of magnetic unreliability and polar areas. However, due to the variety of means and the complexity of air navigation in these areas, specific direction and guidance for these other means of navigation are not provided in this handbook.

NOTE: It is FAA direction and guidance that inspectors shall request assistance from one of the agency's navigation specialists in evaluating and approving or denying an operator's request to use systems, techniques, or procedures which are not discussed in this section.

D. *Boundaries of the Area of Magnetic Unreliability.*

(1) For the northern hemisphere, the Canadian AIP establishes the basic boundaries for the area of magnetic unreliability. Canadian Air Navigation Order, Series V, No. 22 states in paragraph 4 that no person may operate an aircraft in IFR flight within Canadian northern domestic airspace unless it is equipped with a means of establishing direction which is not dependent on a magnetic source. The special

equipment, training, and procedures discussed in this paragraph are required for all operations into the area of northern domestic airspace. The boundaries of this area are shown in figure 4.1.5.3. This area is also outlined on Canadian en route charts. For the purposes of this paragraph, northern domestic airspace is considered to extend from ground level to infinity.

(2) For the southern hemisphere, any operation south of 65 degrees south latitude is considered to be within the area of magnetic unreliability. Any proposal to operate within the area of magnetic unreliability in the southern hemisphere must be reviewed and concurred with by AFS-200 before approval.

E. *Approvals.* All approvals for operations into areas of magnetic unreliability are granted by issuing paragraph B40 and by adding that area of en route operation to paragraph B50 of the standard operations specifications.

213. AREAS WITH SIGNIFICANT COMMUNICATIONS AND/OR AIR TRAFFIC CONTROL DIFFICULTIES. The levels of sophistication in communication, navigation, and air traffic control capabilities in certain areas of operation outside North America and Europe vary widely. The following subparagraphs provide general information about these areas and paragraph 155 provides evaluation criteria that must be considered when approving operations in these areas.

A. *NAVAID's.* The ground-based facilities which are implemented to support air navigation in some of these areas are based on antiquated technology and frequently experience reliability problems. The national airspace system and the navigational performance requirements in many countries are based almost exclusively on NDB's. Also, many of the NAVAID's do not operate continuously. For example, NAVAID's are shut down from dusk to dawn in certain countries.

B. *Communication.* The primary means of en route communication with ATC in many areas of operation is almost exclusively High Frequency (HF) radio. Atmospheric noise created by extensive thunderstorm activity in tropical areas significantly increases the difficulty of using HF as a prime means of communication with ATC. In some of these areas it is necessary to use "CALLSEL" (the reverse of SELCAL) to establish contact with HF ground stations.

C. *ATC.* The level of air traffic service varies from radar based services (equivalent to domestic U.S. operations) to a total absence of any ATC. Flight Information Regions (FIR) have been established in most areas of the world. Specific ICAO member states have been assigned the responsibility of providing air traffic services in these FIR's. Except for certain technically advanced countries, however, the degree of implementation of advanced ATC capabilities is very low. En route ATC radar is not available in most countries and air traffic services are based on position reports and airborne navigation performance capabilities. Various levels of air traffic services provided in these areas are as follows:

(1) *Controlled Airspace.* Within controlled airspace, ATC provides air traffic control service to prevent collisions between aircraft and to expedite and maintain an orderly flow of air traffic. This also includes air traffic advisory services and those alerting services related to weather and search and rescue.

(2) *Advisory Airspace.* Within advisory airspace, air traffic advisory service is available to provide separation, to the extent possible, between aircraft operating on IFR flight plans. It is important to understand that this is an advisory service (similar to an flight service station (FSS)), not a control service (prevention of collision). In advisory airspace, flightcrews are provided information concerning the location of other aircraft. Prevention of collision is the responsibility of the pilot-in-command (PIC). The air traffic services available also include those alerting services related to search and rescue. In certain areas, special reporting procedures called "broadcasts in the blind" have been established to assist pilots in avoiding other aircraft. At designated intervals, each pilot broadcasts the aircraft's position, route, and flight level over a specified VHF frequency. Awareness of the proximity of other aircraft is obtained by maintaining a continuous listening watch on the specified frequency. This procedure is an "expected" practice in large portions of Northwestern Africa (including most Brazilian airspace). In many of these areas the "broadcast-in-the-blind" procedure is the only means of separating IFR aircraft, other than see-and-avoid.

(3) *No-Man's-Land.* Flight information regions have not been established for a few areas in the world. The largest of these areas is in the South Atlantic Ocean annotated as "No FIR." Flight information service also do not exist in the high altitude structure in other large areas (above the top of controlled airspace). Within no-man's-land, aircraft separation (prevention of collision) is entirely the responsibility of the PIC. Advice and information for the safe and efficient conduct of flights is not provided from an air traffic service unit. Alerting services related to search and rescue are not provided by an air traffic service unit.

D. *Metric Flight Levels.* The national airspace systems in most Eastern European and Asian Communist Bloc countries are based on the use of metric flight altitudes/levels. Operations within these areas require special procedures to translate the metric flight levels to usable flight levels. For example, a flight level of 10,000 meters represents FL 328 or a flight altitude of 1,000 meters represents an altitude of 3,280 feet.

215. EVALUATION CRITERIA FOR AREAS WITH COMMUNICATIONS AND ATC DIFFICULTIES. All proposals to conduct operations in the sovereign airspace of countries outside of North America, Western Europe, Japan, the Philippines, and the countries associated with the British Commonwealth, must be evaluated on a case-by-case basis.

A. *General Criteria.* The operator must show (considering factors unique to the proposed area of operation) that safe operations can be conducted within the area of operation and that the facilities and services necessary to conduct the operation are available and serviceable during the period when their use is required. The operator must also show that the proposed operations is in full compliance with the requirements in Part B of the operations specifications which are applicable to that operation.

B. *Operations in Advisory Airspace.* The operator must show that its training programs and operating procedures permit safe operations in advisory airspace and assure compliance with the "expected" operating practices. The operator must also show that the operation is in compliance with paragraph A14 of the operations specifications.

C. *Operations in No-Man's Land.* Since air traffic control, air traffic advisory, flight information, and alerting services are not available from air traffic service units when operating within these areas, the operator must show that acceptable, alternative means are available to assure the following:

(1) The appropriate organization can be notified in a timely manner when search and rescue aid is needed

(2) Changes in significant weather information can be provided to the flightcrew in a timely manner

(3) Changes in the serviceability of the required navigation aids are available to the flightcrew and the operator's operational control system

(4) Reliable information concerning other IFR aircraft operating within this area is available inflight. This includes "broadcast in the blind" procedures and other "expected" practices

(5) The required navigation facilities necessary to safely conduct the operation are available and serviceable

D. *Role of Navigation Specialists.* The uniqueness of operations in advisory airspace and in no-man's land usually requires assistance from persons with special navigational knowledge, skills, and expertise. Several navigation specialists are available in the FAA for these purposes. Inspectors are expected to request the assistance of these specialists when evaluating proposals to conduct operations outside controlled airspace.

217. OPERATIONS IN SENSITIVE INTERNATIONAL AREAS. Operations by U.S. operators within the sovereign airspace of certain countries have high international sensitivity. Operations within these countries are usually restricted by international agreements. These agreements frequently specify certain airports, selected routes and special procedures which must be used. Except when specifically approved by AFS-200, inspectors shall not authorize operations within the areas or countries specified in this paragraph. When a request to operate in a sensitive area is received from an operator, inspectors shall forward the request through regional flight standards division (RFSD) to AFS-200. AFS-200 shall coordinate the request with AIA-100. If the request is approved, direction and guidance will be provided to the responsible inspector. The inspector shall approve the operation by adding the area of en route operation to paragraph B50 of the standard operations specifications. After approval, the responsible inspectors shall determine that the operator complies with the direction and guidance provided by AFS-200 and AIA-100. The following areas and/or countries are considered to be sensitive areas:

- Afghanistan
- Angola
- Armenia
- Azerbaijan
- Bosnia - Herzegovina
- Georgia
- Havana FIR/UIR
- Iran
- Iraq
- Lebanon
- Libya
- Nigeria (Lagos' Murtala Muhammad Airport)

- North Korea
- Serbia - Montenegro
- Somalia

219. SOUTH ATLANTIC AND GULF OF MEXICO CONTROL AREAS (ATLANTIC AND GULF ROUTES).

A. Atlantic routes (AR) and gulf routes are special case routes in which Class II navigation can be conducted using VOR/DME and NDB supplemented by dead reckoning. These routes are located off-shore in the South Atlantic control area and Gulf of Mexico control areas as shown on en route charts. These areas are established by FAA Handbook 7400.2C, "Procedures for Handling Airspace Matters" to serve aircraft operations between U.S. territorial limits and oceanic control area/flight information region boundaries and/or domestic flights which operate in part over the high seas. These transition control areas permit the application of domestic procedures and separation minimums by air traffic control services.

B. Because independent radar surveillance is maintained while operating within these control areas, separation minimums are not as large as those in oceanic control areas. As long as radar surveillance is maintained, operations may be conducted on AR and Gulf Routes using VOR/DME and NDB supplemented by dead reckoning. The special provision of radar surveillance provides the equivalent level of safety for aircraft separation even through dead reckoning may be required for relatively long periods of time (approximately 45-50 minutes). In addition, due to the proximity of these routes to shore-based facilities, the accuracy of dead reckoning can be enhanced by using position fixing information from shore-based VOR/DME NAVAID's. Dead reckoning techniques and procedures must be included in the FAA-approved training program for operation on these routes. It should include contingency training for diversions such as weather avoidance or emergencies (see paragraphs 121a and 123).

C. Approval of the use of ICAO standard NAVAID's supplemented by dead reckoning in the South Atlantic and Gulf of Mexico control areas is granted by entering these areas in paragraph B50 of the operations specifications.

221. SPECIAL AREAS WHERE REDUNDANT LONG-RANGE NAVIGATION SYSTEMS ARE USUALLY NOT REQUIRED. Certain special areas have been identified where long-range navigation can be conducted with a single long-range navigation system.

A. *Concept.* The provisions of the Federal Aviation Regulations (FAR) related to Class II navigation do not specifically require redundant or dual long-range navigation systems. The primary Class II navigation requirements are related to the level of navigational performance necessary for the control of air traffic. The objective of requirements for redundant navigational systems is to permit the flight to continue to navigate to the degree of accuracy necessary for the control of air traffic in the event a failure occurs in the navigational system being used.

(1) In certain situations, Class II navigation can be safely conducted using ICAO standard NAVAID's supplemented by dead reckoning (see section 4). Operations can also be safely conducted in much larger areas using a combination of redundant ICAO standard NAVAID's and a single, long-range navigation system. The basic concept for these operations considers the availability of ICAO standard NAVAID's, the lateral separation minimums applied by ATC (the navigational performance required), the length of the route or route segment, the complexity of the route structure, and the density of the air traffic.

(2) When the long-range navigation segment of the route flown is relatively short (several hours), the ATC lateral separation minimums are large (usually 90 NM or more), and the upper air winds are relatively stable, single long-range navigation systems may be adequate. The primary concern related to the use of single long-range navigation systems is preserving the ability to navigate to the degree of accuracy required for the control of air traffic following a failure in the long-range navigation system. Historically, the required navigational performance (following such failures) has been provided by the use of dead reckoning and ICAO standard NAVAID's. Since dead reckoning is much less accurate than using a long-range navigation system, the period of time that dead reckoning must be used is the most critical factor. Operational experience and analysis has shown that turbojet operations can be safely conducted (within special areas described in this paragraph) with an approved, single long-range navigation system and the redundant means of using ICAO standard NAVAID's.

B. *Special Provisions for the Western Atlantic Ocean, Caribbean Sea, and Gulf of Mexico.* The unique nature of the Western Atlantic Ocean, the Caribbean Sea, and the Gulf of Mexico permits operations with turbine-powered airplanes and certain off-shore helicopter operations to be safely conducted with a single approved long-range system. Approval of the use of a single long-range navigation system is granted by entering a note in the limitations, provisions, and reference paragraphs column of paragraph

B50 of the operations specifications. The note should indicate that a single system (specify the system make) is authorized. The areas of operation where these operations may be authorized in paragraph B50 of the operations specifications are as follows:

- The Gulf of Mexico
- The Caribbean Sea
- The North Atlantic Ocean west of the western boundary of NAT/MNPS airspace and west of a line from 27 degrees N/60W to 10 degrees N/55W

C. *Special Provisions for Certain Routes in NAT/MNPS Airspace.* Special contingency routes have been established in limited portions of NAT/MNPS airspace where aircraft equipped to use standard ICAO NAVAID's can operate with a single long-range navigation system. These routes are specified in the International Flight Information Manual (IFIM). Operations over these routes can be authorized provided the operator shows that the long-range navigation system/aircraft combination used and the operational procedures used meets NAT/MNPS requirements (AC 120-33). The approval is granted in accordance with paragraph B39(d) of the operations specifications and by adding that area of en route operation to paragraph B50 of the standard operations specifications.

D. *Other Special Areas.* Inspectors shall not authorize operations with single long-range navigation systems in any other areas of operation without the review and concurrence of AFS-200. When a request to operate with single long-range navigation systems in areas not described in this paragraph is received, inspectors shall request assistance from one of the agency's navigation specialists. If the responsible inspector and the navigation specialist determine that the proposed operation can be safely conducted, a request for review and concurrence should be forwarded, through regional office, to AFS-200. AFS-200 will provide national direction and guidance for evaluating and approving or denying the proposed operation.

223. AIR TRANSPORTATION OPERATIONS WITHIN THE FORMER SOVIET UNION.

A. *General.* As a result of the new bilateral air transportation agreement between the U.S. and the Russian Federation, a significant increase in air transportation between the two countries is expected. Due to the short distance between the state of Alaska and the C.I.S., significant increases in air traffic are expected in the far eastern portion of this region. This area, traditionally called the Soviet Far East (SFE), is now known as the Russian Far East (RFE). This section contains specific guidance to be used by principal operations inspectors (POI) who have been asked to approve operations by U.S. air carriers within the C.I.S. Prior to beginning such approval, coordination with AFS-500 is required.

(1) *Overview of Regional Differences in the C.I.S.* The C.I.S. is more than twice the size of the U.S. and is significantly more diverse in aviation infrastructure. Flight operations within the western part of the country (generally west of the Ural mountains) are considerably less challenging than flights in the eastern part of the country. In the east, primarily due to limited facilities, sparse population, and harsh winter weather, routine flight planning may be difficult. Communications, navigation, and airport availability require special emphasis before the initiation of flights within this region. Operating aircraft in the western C.I.S. is generally less demanding; however, many significant operational differences exist.

(2) *Overview of Airport and Airway Differences Within the C.I.S.* The airports and airways in the C.I.S. are divided into two categories: international and domestic.

(a) *International Airports and Airways.* International routes and airports in the C.I.S. are generally available for use by foreign aircraft operators, provided the operators have received appropriate flight authorizations from C.I.S. and FAA authorities. These routes and airports are published in the Russian AIP. ATC communications are provided in English, and airports have customs and immigration services as well as fuel (AVGAS availability is limited). Instrument approach procedures are generally available in ICAO format and are similar to approach procedures used worldwide.

(b) *Domestic Airports and Airways.* Domestic airports and routes in the C.I.S. are generally not usable by foreign aircraft operators unless a Russian navigator is utilized to communicate with ATC and provide instructions to the flightcrew regarding navigation principles and procedures. En route and terminal air traffic control within the domestic systems are accomplished in the Russian language since a large percentage of C.I.S. air traffic controllers do not speak English. En route charts and instrument approach procedures for the domestic system are not published in English, are generally not available to foreign aircraft operators, and may not meet ICAO requirements. Weather and notice To airmen (NOTAM) information will be difficult or impossible to obtain and will not be provided in English or in standard format.

(3) *General Navigational Considerations.*

(a) The conduct of navigation off established airways in the C.I.S. is generally not permissible; therefore, foreign aircraft operations are restricted to published international routes and airports, even for refueling stops and alternate airports. Appropriate flight crewmember training on metric conversion and the availability in flight of conversion charts are necessary to enable crewmembers to convert metric altitudes, weights, and windspeeds. Although operators are permitted to conduct flights to or within the C.I.S. under visual flight rules (VFR), there are significant C.I.S. flight rule differences that normally preclude foreign aircraft operators from conducting flights under VFR.

(b) In some areas, ATC procedures have been developed that allow operations off published routings by using radar vectors. If clearance is received to operate off airways, the carrier is authorized to accept the clearance. However, due to military concerns, it is possible that the radar vectors received may not be most expeditious for the carrier.

B. *Areas of Consideration.* When reviewing an operator's proposal for operations within the C.I.S., POI's should review the following:

(1) *Russian AIP.* This is the primary document available concerning foreign aircraft operations within the C.I.S. The Russian AIP is published by the Aeronautical Information Service (AIS), which is part of the Department of Air Transport (DAT) of the C.I.S. It is published in both Russian and English and contains detailed flight operational requirements as well as terminal, airport, and instrument approach charts in ICAO format. It is available from the AIS on an annual subscription basis, including monthly revisions. Subscription service or further information may be obtained from the following address:

Aeronautical Information Service
Department of Air Transport
67 Svoboda Street
Moscow, Russia
Telephone 492-82-85
AFTN: UUUUYOYX
Telex: 411182, AIS

NOTE: The navigation charts and standard instrument approach procedures (SIAP) for the C.I.S. domestic system are not included in the AIP and are usually not available in English.

(2) *Communications.* POI's should be aware that communications to, from, and within the C.I.S. can be difficult. Some specific areas of communication that POI's should consider include the following:

(a) *ATC Communications.* The ATC communication system within the C.I.S. is generally good. VHF is commonly used for en route communications, but HF is required for certain routes. The communication equipment requirements are listed in the Russian AIP. POI's are encouraged to evaluate all routes used by their assigned air carriers to ensure the adequacy of communications. Unlike U.S. controllers, C.I.S. air traffic controllers have limited access to weather and NOTAM information.

(b) *Aeronautical Fixed Telecommunications Network (AFTN) or Society Internationale de Telecommunications Aeronautique (SITA) Networks.* Data transmission and reception is accomplished by using the AFTN or SITA networks, although in remote areas only AFTN may be available. Transmitting or receiving messages by using the AFTN system within the C.I.S. (to and from many remote areas, especially in the RFE) may be less timely than desirable. This is because most messages enter and depart the C.I.S. in Moscow, and manual manipulation of messages is required at many transfer stations before and after reaching Moscow. Also, the existing telecommunications infrastructure is not reliable. No error checking is done; for example, if, because of a formatting error or for some other reason, a message is rejected en route, no one checks on this; the message is just dumped.

(c) *Telephone Service.* Telephone service to, from, and within the C.I.S. is limited. Various systems are used, including an HF troposcatter system which, due to technical limitations, makes communication extremely difficult. Establishing necessary reliable communications to and from line stations within the C.I.S. may be more difficult than in other areas.

(3) *Navigation.* It is permissible to conduct navigation on international routes within the C.I.S. by utilizing Class I or Class II navigation systems. Route widths vary from 8 km to 20 km, as indicated in the Russian AIP. It is the pilot's responsibility to keep the aircraft within established airway boundaries. Available altitudes also vary from one route to another as identified in the Russian AIP. When planning flights, operators must ensure that the desired altitudes are available for particular routes. This is especially important in the RFE where there is usually only one route available for flights. In the RFE, Class I en route navigation on international routes is primarily accomplished by utilizing NDB's); however, numerous compatible VOR transmitters will be installed in the coming years. In the western C.I.S., compatible VOR transmitters are also utilized to define international routes. In certain situations, especially in the RFE,

it may be necessary to require operators to utilize Class II navigation to supplement Class I navigation due to the distance between NAVAID's and the limited width of airways. Class II en route navigation on international routes should be relatively simple, provided two conditions are properly addressed. The first condition is that, depending on the published route widths, length of flight, and type of Class II navigation equipment utilized, it may not be possible for an operator to maintain the course centerline accuracy required by the C.I.S. Limitations on the operation of some VLF/Omega systems, as shown in the flight manual supplement of the AFM, may preclude their use in some areas of the C.I.S. The second condition concerns the lack of VOR/DME transmitters, especially in the RFE, which means that special consideration must be given by operators to navigation accuracy requirements when utilizing inertial reference systems (IRS), such as B-757, B-767, and A-310. Again, it may not be possible to obtain the required navigation accuracy unless, considering the specific route and length of flight, VOR/DME updates are provided to the IRS. Other areas concerning navigation that POI's must consider when evaluating operator requests include the following:

(a) *Alternate Airports.* For flight planning purposes, operators must give careful consideration to the location of, and routing to, suitable alternate airports. Fuel planning must be carefully considered due to potential difficulties with communications, diversion airport routings, and the lack of suitable airports.

(b) *Extended Range Operation With Two-Engine Airplanes (ETOPS).* Operations in certain areas with two-engine aircraft may require ETOPS approval due to the lack of adequate/suitable airports within 60 minutes of the operator's route. AC 120-42, "Extended Range Operation With Two-Engine Airplanes (ETOPS)," as amended, contains additional information.

(c) *C.I.S. Navigator Assistance.* The conduct of navigation within the C.I.S. is the responsibility of the PIC. Flights operating off of established international routes, or on the domestic route system, usually will not be permitted by the C.I.S. unless a C.I.S. navigator is aboard. In unique situations, a radio operator will also be required; however, these two functions are usually performed by the navigator. The assistance of a navigator will also be required for flights to or from any C.I.S. domestic airport. Although the navigator may be required by the C.I.S., the navigator is not a required flight crewmember according to the FAR and is not responsible for the conduct of the flight. The purpose of the navigator is to provide assistance in cross-checking course guidance information en route and to provide assistance in cross-checking information on terminal arrivals and departures, as well as instrument approach procedures (IAP). Due to jumpseat management considerations, POI's and operators should consider carefully any requests to carry C.I.S. navigators/radio operators. POI's shall obtain the concurrence of AFS-200 before approving an operator's carriage of these persons. When evaluating C.I.S. navigator/radio operator requirements, inspectors and operators should consider the following information:

1. Due to the lack of informational and technical data pertaining to operations in the C.I.S. domestic system, which are needed to meet requirements of FAR Parts 121 and 135, it may not be possible for operators to conduct operations at most domestic airports at this time.

2. C.I.S. navigators are required to use a cockpit jumpseat, which may preclude an FAA inspector from accomplishing a required en route inspection or validation test on a particular flight or series of flights.

3. The charts for the domestic system are usually not available in English.

4. The Russian DAT charges a substantial fee for the use of navigators.

(d) *Area of Magnetic Unreliability.* Depending on the latitude of the routes flown, operations may be conducted within the C.I.S. area of magnetic unreliability. Procedures for approving flights within an area of magnetic unreliability can be found in volume 3, paragraph 139; and in volume 4, paragraph 151.

(e) *Approval of VFR-only Flights for FAR Part 135 Operators.* Due to complex VFR flight requirements (as identified in the Russian AIP) and requirements that aircraft operate on established airways at assigned altitudes, the approval of VFR-only flights by FAR Part 135 air carriers is not recommended. Deviations around clouds under C.I.S. flight rules will be difficult or impossible to achieve due to the rigidity of the C.I.S. airspace requirements to maintain airway altitude and airway centerline. Approval of FAR Part 135 VFR-Only air carrier operations within the C.I.S. shall be coordinated with AFS-200.

(4) *Terminal IAP's.* Terminal IAP's at international airports within the C.I.S. are conventional and should not be confusing to foreign operators. Arrival and departure procedures are similar to U.S. standard terminal arrival routes (STAR) and standard

instrument departures (SID). Radar vectoring is uncommon; therefore, flight crewmembers should expect to fly full procedures as published in the AIP or Jeppesen charts. Flight crewmembers should be aware that use of QFE (atmospheric pressure at airport elevation) is common, and transition levels vary from one sector to another. IAP's are standard (instrument landing system (ILS), VOR, NDB). Precision radar approaches (PAR) are also very common throughout the C.I.S.; however, it is recommended that POI's exercise caution when approving requests by air carriers to conduct PAR's within the C.I.S., due to the lack of English language proficiency by most local air traffic controllers. POI's whose operators wish to conduct PAR's within the C.I.S. should approve these operations on an airport–by–airport basis. AFS-500 should be consulted for information as to current problems and policies. Terminal IAP's at domestic airports are usually neither published in English nor readily available to foreign air carriers. Therefore, POI's must ensure that their operators have obtained and demonstrated the adequacy of the data and meet the applicable portions of appropriate FAR concerning routes, airports, weather, and communication. C.I.S. navigators, who are required for foreign aircraft operators within the domestic system, will carry en route, terminal area, and instrument approach charts for their use within the domestic system. These charts are generally available in Russian language only. During all operations, the flightcrew shall utilize only publications that have been translated into English. These may be obtained from commercial sources. Class II navigation capability will likely be required for operators navigating within the domestic system, due to the inability of foreign aircraft to receive signals from the C.I.S. VHF RSBN (short-range navigation system). Many NAVAID's (VHF RSBN and NDB) within the domestic system use identifiers that do not have an English translation. POI's must reference FAA Order 8260.31,''Foreign Terminal Instrument Procedures,'' for guidance and approval criteria to ensure that established safety standards are met.

(5) *Air Carrier Training Programs.* Revisions to air carrier training programs and/or international procedures training for flight crewmembers may be required prior to issuing operations specifications. POI's should ensure that appropriate information contained in the Russian AIP is incorporated into air carrier training programs. For further guidance on training programs, refer to volume 3, chapter 2.

(6) *Flight Approval.* According to both the Russian AIP and the IFIM, an operator must receive written approval from DAT-Moscow before initiating a flight that will enter C.I.S. airspace. Operators shall not request flight approval through any regional ministry or Aeroflot office. Any approval granted by a regional office should not be considered sufficient unless accompanied by approval from DAT-Moscow. Aircraft operators intending to utilize standard air corridors and international airports in the C.I.S. should submit their request, via telex, directly to the DAT, far enough in advance so as to reach the ministry at least 5 working days (3 weeks is suggested) before departure. The telegraphic address is as follows:

International Department
Department of Air Transport
Leningradsky Prospect 37
Moscow, Russia
Telex: 411182 AFL SU

It is recommended that a simultaneous request be made to the Central Department of Operational Services (CDOS). The telegraphic address is as follows:

Central Department of Operational Services
Telex: 412303 CDS SU
AFTN: UUUUYAYW
SITA: MOWZGSU

Operator requests for aircraft using nonstandard routings and/or intending to land at airports normally serving domestic traffic should be submitted through the Economic Section of the U.S. Embassy in Moscow, APO, NY, 09862. The telegraphic address is as follows:

Amembassy Moscow
Telex: 413160 USGSO SU

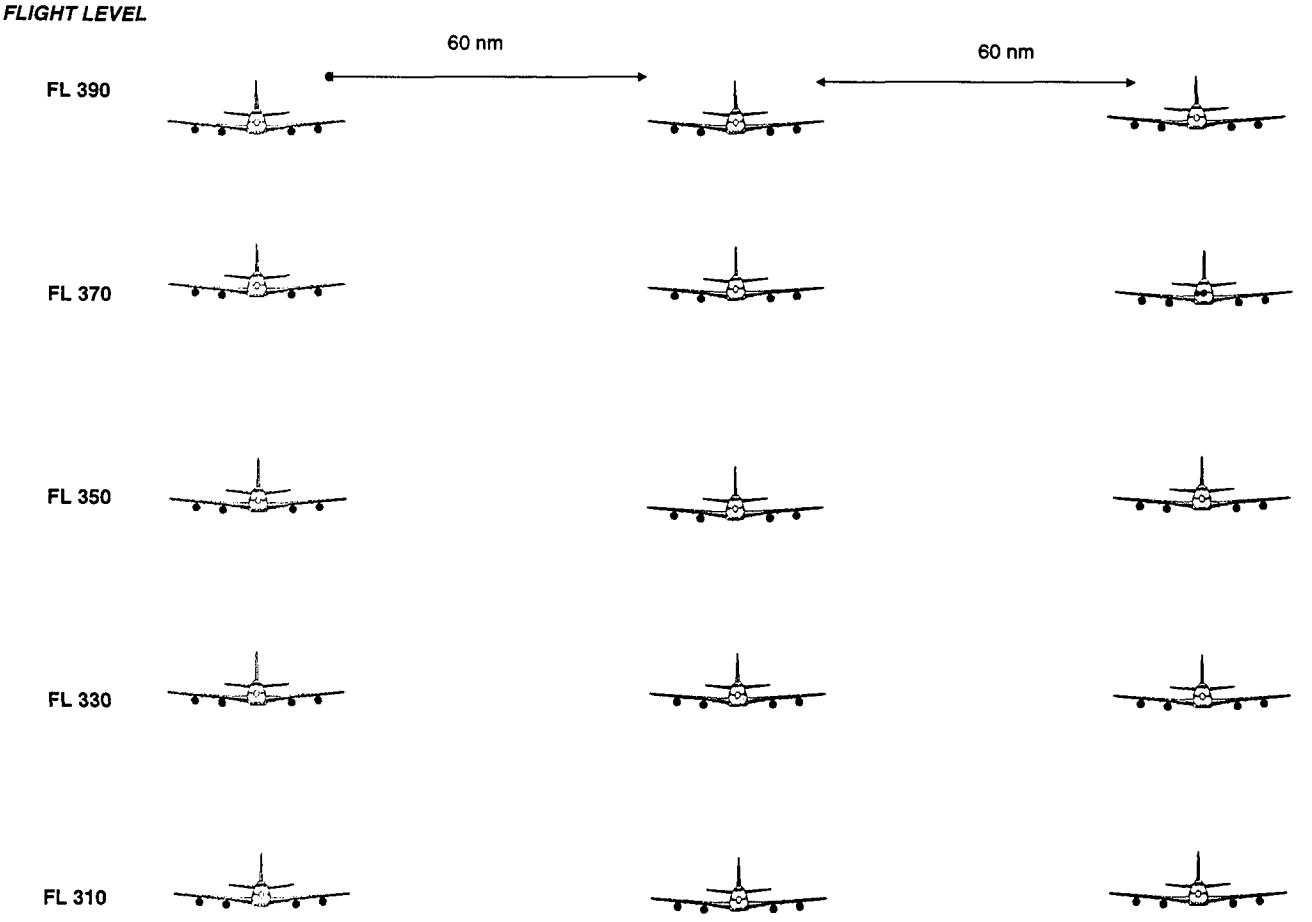
Information to be included in Telex is listed in the AIP and IFIM. Recent operator experience indicates that the communication infrastructure may preclude receiving this authority in a timely manner. Personal presentations, to include objectives and justification, may be more effective.

(7) *Validation Test Requirements.* These are required for all U.S. operators seeking approval to operate within C.I.S. airspace. Guidance for validation tests is contained in volume 3, chapter 9.

224.–284. RESERVED.

FIGURE 4.1.5.1.

ILLUSTRATION OF NORTH ATLANTIC (NAT/MNPS) RECTANGULAR SEPARATION



NORTH ATLANTIC MNPS SEPARATION STANDARDS. Aircraft are separated by one of the following methods:

A. Lateral Separation. Lateral separation between co-altitude aircraft (aircraft at the same flight level) is 60 nm.

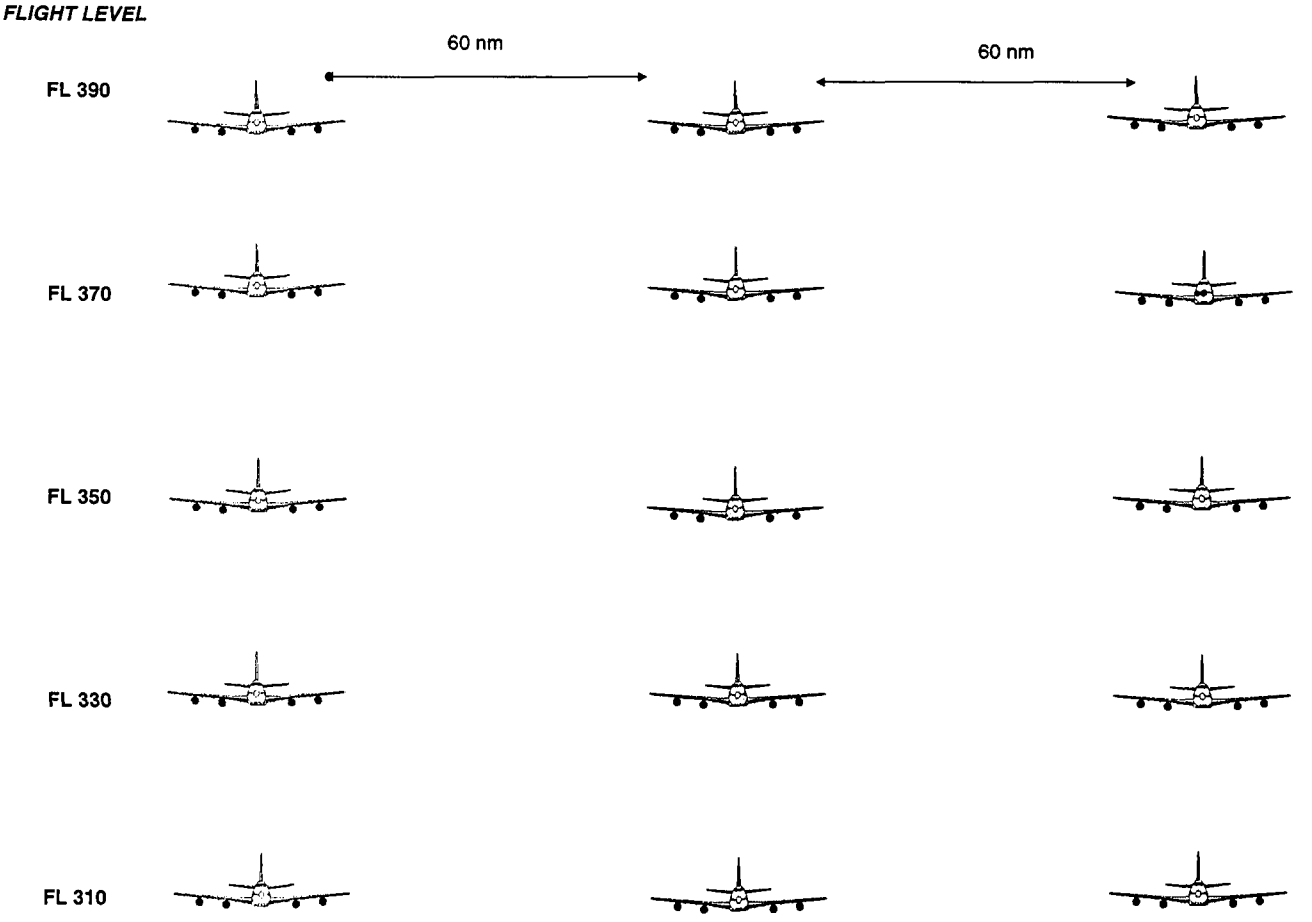
B. Vertical Separation. Vertical separation between aircraft on the same track is 2,000 feet.

C. Longitudinal Separation. Basic longitudinal separation between aircraft on the same track is 10 minutes. If an aircraft is flying faster than the aircraft behind it (mach advantage), than this criteria may be reduced.

NOTE: Separation standards may be changed. Consult Regional Supplementary Procedures (ICAO Document 7030/3) for current standards applied in the NAT Region

FIGURE 4.1.5.1.

ILLUSTRATION OF NORTH ATLANTIC (NAT/MNPS) RECTANGULAR SEPARATION



NORTH ATLANTIC MNPS SEPARATION STANDARDS. Aircraft are separated by one of the following methods:

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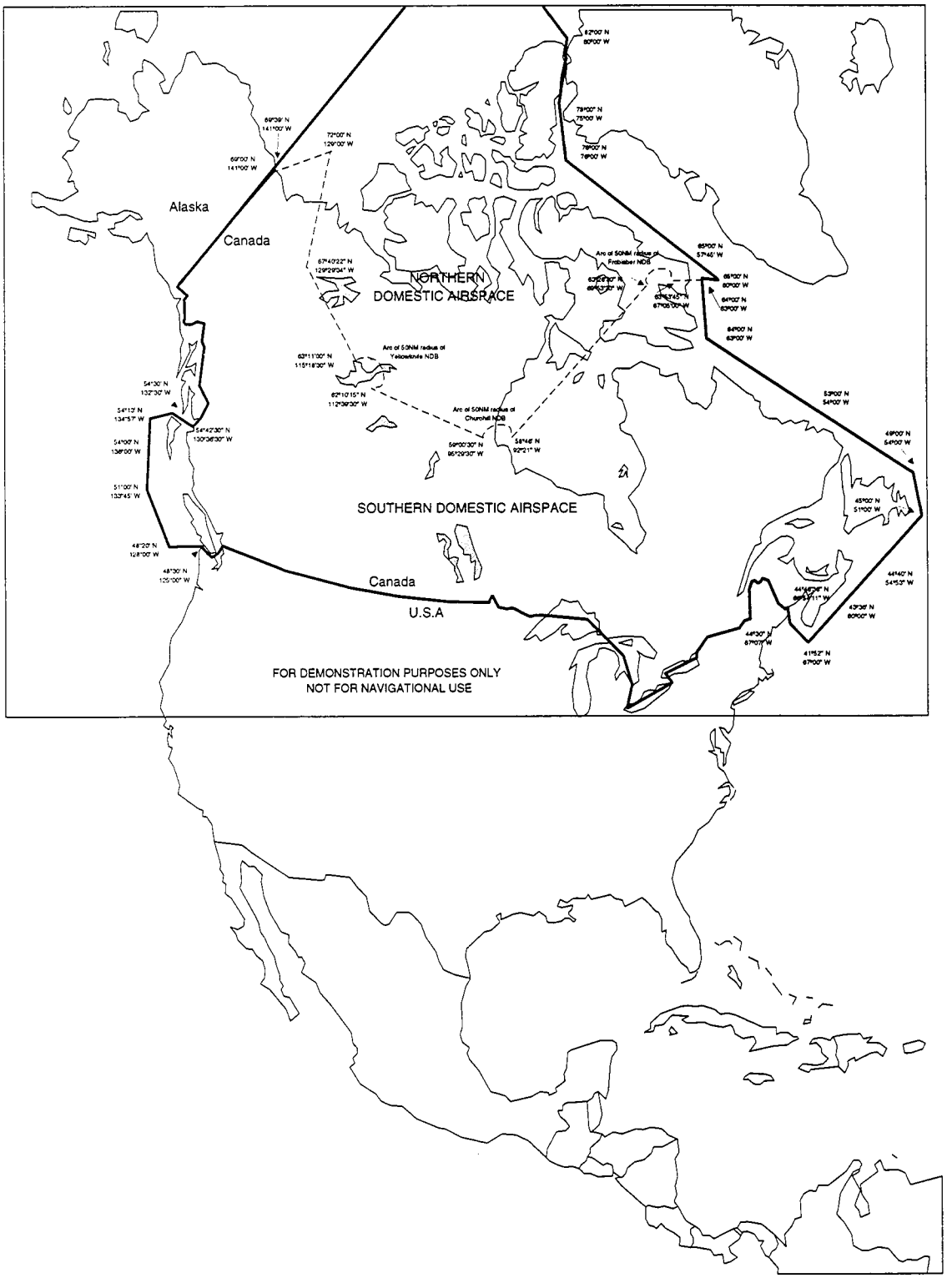
C. Longitudinal Separation. Basic longitudinal separation between aircraft on the same track is 10 minutes. If an aircraft is flying faster than the aircraft behind it (mach advantage), than this criteria may be reduced.

NOTE: Separation standards may be changed. Consult Regional Supplementary Procedures (ICAO Document 7030/3) for current standards applied in the NAT Region

FIGURE 4.1.5.3.
CANADIAN DOMESTIC AIRSPACE



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[PAGES 4-85 THROUGH 4-106 RESERVED]

CHAPTER 1. AIR NAVIGATION AND COMMUNICATIONS

SECTION 6. GENERAL COMMUNICATION CONCEPTS, POLICIES, AND GUIDANCE

285. GENERAL. For all operations, Federal Aviation Regulations (FAR) § 91.183 requires that the pilot-in-command (PIC) of each aircraft maintain a continuous watch on the appropriate frequency when operating under instrument flight rules (IFR) in controlled airspace. This section contains information and guidance concerning the communication equipment requirements for FAR Parts 121 and 135 over-water operations.

287. VERY HIGH FREQUENCY (VHF)/HIGH FREQUENCY (HF) COMMUNICATIONS. (TBD)

289. COMMUNICATION EQUIPMENT REQUIREMENTS FOR OVER-WATER OPERATIONS.

A. *Over-water Operations.* FAR § 91.511 identifies the radio equipment that is required when operating "over water" more than 30 minutes flying time or 100 nautical miles (NM) from the nearest shore. Different from the "extended over-water" definition found in FAR Part 1, this term is applied to FAR Part 91 operations of large and turbine-powered multiengine airplanes.

B. *Extended Over-water Operations.* FAR Part 1 defines "extended over-water operation" for airplanes as "an operation over water at a horizontal distance of more than 50 nautical miles from the nearest shoreline . . ." and, for helicopters, as "an operation over water at a horizontal distance of more than 50 nautical miles from the nearest shoreline and more than 50 nautical miles from an off-shore heliport structure." The definition applies to both FAR Part 121 and 135 operations.

C. *Regulations.* The appropriate regulations and accompanying guidance for conducting extended over-water operations under FAR Part 121 are as follows:

(1) FAR § 121.351(a) states that no person may conduct an extended over-water operation unless the airplane is equipped with the radio equipment necessary to comply with FAR § 121.349 and an independent system that complies with FAR § 121.347(a)(1).

(2) FAR § 121.349 requires all of the equipment required in FAR § 121.347(a) to be installed. In addition, the radio equipment must be able to satisfactorily receive all radio navigational facilities to be used by either of two independent systems.

(3) FAR § 121.347(a)(1) requires the radio equipment necessary for the crew to communicate with at least one appropriate ground station from any point en route.

(4) FAR § 121.347(a)(2) requires the radio equipment necessary for the crew to communicate with appropriate Air Traffic Control (ATC) from any point in the control zone within which flights are intended.

(5) FAR § 121.347(a)(3) requires the radio equipment necessary for the crew to receive meteorological information from any point en route by either of two independent systems, and further states that one of the means provided to comply with this subparagraph may also be used to comply with subparagraphs (a)(1) and (2) of FAR § 121.347.

D. *Applicable FAR Part 121 Guidance.* To ensure adequate communication with ground stations, FAR § 121.351 requires FAR Part 121 operators engaged in extended over-water operations to have all aircraft equipped with two independent communication systems. Each of these independent communication systems must be capable of communicating with at least one appropriate ground station from any point on the route.

(1) If this requirement can be complied with on all over-water routes by using VHF equipment, the airplane need only be equipped with two VHF receivers and two VHF transmitters.

(2) On the other hand, if compliance with FAR § 121.347(a)(1) can only be accomplished with HF equipment, the airplane must be equipped with two HF systems and at least one VHF system to also comply with FAR § 121.347(a)(2).

NOTE: Principal operations inspectors (POI) should be aware that Exemption No. 2081, as amended, grants relief from FAR § 121.99 by authorizing FAR Part 121 operators to dispatch airplanes over certain ocean

areas with one of the two required HF radios inoperative at the time of departure, subject to certain conditions and limitations.

(3) The term "appropriate ground station" in FAR § 121.347(a)(1) includes, for example, aeronautical radio stations for ATC en route and air carrier dispatcher and flight-following services. Where there are gaps in air-ground communication capabilities that require the use of both VHF and HF systems en route to comply with FAR § 121.347(a)(1), there must be two VHF and two HF systems to comply with the requirement of FAR § 121.351.

E. *FAR Part 135 Guidance.* FAR § 135.165 prohibits operators from flying under IFR or on extended over-water operations unless the aircraft is equipped with certain communication and navigation equipment. Guidance for FAR Part 135 operators regarding this equipment is specified in FAR § 135.165 as follows:

(1) *Turbojet Airplanes with 10 or More Passenger Seats and Multiengine Commuter Airplanes.* FAR § 135.165(a) pertains to turbojet airplanes with a passenger seating configuration of 10 or more and to multiengine airplanes carrying passengers as a commuter air carrier. FAR § 135.165(a) requires, in part, for IFR or for extended over-water operations, that those airplanes have radio communications equipment appropriate to the facilities to be used and that the equipment be capable of transmitting to, and receiving from, at least one ground facility at any place on the route. It also requires, in part, that two "independent" transmitters and two "independent" receivers for communication be used. For the purpose of this section, a receiver or transmitter is "independent" if it does not depend on the functioning of any part of another receiver or transmitter.

(2) *Other Aircraft.* FAR § 135.165(b) pertains to all other aircraft and requires, in part, only one transmitter and two independent receivers for communications under IFR or during extended over-water operations.

(3) *Use of an Additional Transmitter.* FAR § 135.165(b)(7) also requires that an additional communications transmitter be used for extended over-water operations. This would mean that if an HF radio is required to communicate with ATC over any part of an extended over-water route, the aircraft will be required to be equipped with two HF independent transmitters and two independent HF receivers.

F. *FAR Parts 121 and 135 Operations Ferrying Aircraft Under FAR Part 91.* FAR § 91.511 requires those FAR Part 121 and 135 operators who ferry aircraft under FAR Part 91 to carry certain operable communications equipment on large and turbine-powered, multiengine airplanes when they are flown over water. For example, when both VHF and HF communications equipment are required for the intended route under FAR § 91.511, FAR § 91.511(d) allows the FAR Part 91 operator to conduct over-water operations with only one HF transmitter and one HF receiver, provided the aircraft is equipped with two independent VHF transmitters and receivers.

291. DATA LINK. (TBD)

293. AUTOMATIC DEPENDENT SURVEILLANCE. (TBD)

295. SATELLITE VOICE. (TBD)

296.–400. RESERVED.

[PAGES 4-109 THROUGH 4-120 RESERVED]

FIGURE 4.2.1.1.
REFERENCES FOR AWTA OPERATIONS

[TO BE DEVELOPED]

FIGURE 4.2.1.1.
REFERENCES FOR AWTA OPERATIONS

[TO BE DEVELOPED]

CHAPTER 2. ALL-WEATHER TERMINAL AREA OPERATIONS

SECTION 2. GENERAL CONCEPTS FOR ALL-WEATHER TERMINAL AREA APPROACH PROCEDURES

441. GENERAL. This chapter contains a discussion of all-weather terminal area (AWTA) operations, including takeoff, departure, approach, and landing operations. AWTA operations are those operations conducted in the terminal area under instrument flight rules. Terminal area operations conducted under visual flight rules (VFR) in visual weather conditions are not addressed in this chapter. This section discusses general concepts for AWTA approach and landing operations conducted under instrument flight rules (IFR). The basic principle for AWTA approach and landing operations is that operating minimums are permitted to be reduced through improvements in operational capabilities. This principle is valid only if an acceptable escape capability (missed approach) is maintained or if an extremely high probability of safely completing the maneuver exists. All instrument approach procedures (IAP) are constructed to permit safe instrument flight to the missed approach point followed by an instrument missed approach. The safety of conducting an instrument approach to a published minimum and executing the missed approach is not dependent on establishing visual reference with the landing surface. The criteria for constructing an instrument approach are based on the premise that an instrument missed approach will be necessary under certain circumstances. Visual reference with the landing surface, however, becomes a safety factor when the flight descends below the published IFR minimum height or altitude. The visibility or runway visual range (RVR) for a particular runway becomes a safety consideration in both fuel planning and selection of alternate airports.

443. BASIC TYPES OF AWTA APPROACH AND LANDING OPERATIONS. There are two generic classes of approach and landing operations, those conducted under VFR and those conducted under IFR. There are three basic types of IFR approach and landing operations: visual approaches, contact approaches, and instrument approaches.

A. *Visual Approaches.* A visual approach can be authorized by ATC if the aircraft is being operated under IFR in VFR weather conditions (see the Airman's Information Manual). Although a pilot conducting a visual approach is expected to proceed to the destination airport by pilotage or by visual reference to another aircraft, the flight remains under an instrument flight plan. Air traffic control (ATC) retains responsibility for both traffic separation and wake-vortex separation, unless the pilot is following another aircraft and has established visual contact with it. ATC will provide flight-following and traffic information until the aircraft is instructed to contact the control tower. Either ATC or the pilot may initiate a request for a visual approach.

NOTE: Charted visual flight procedures (CVFP), a subset of visual approaches, are also considered to be visual approaches.

B. *Contact Approach.* A contact approach can only be authorized by ATC when requested by the pilot. The flight must be operated clear of clouds and in accordance with an IFR flight plan. The ground visibility at the destination airport must be reported to be at least 1 statute mile otherwise ATC will not authorize a contact approach. A contact approach is an approach procedure that may be used by a pilot (with prior ATC authorization) instead of a standard or special instrument approach procedure established for the destination airport. A contact approach cannot be requested or authorized for an airport which does not have an instrument approach procedure. As such, the ATC authorization for a contact approach cannot be used by a pilot to proceed to a different airport which does not have an instrument approach procedure. Although ATC provides separation services to a flight during a contact approach, the pilot must assume full responsibility for obstacle clearance and navigation to the destination airport.

C. *Instrument Approaches.* Instrument approach procedures are provided to permit descent in instrument conditions from the en route environment to a point where a safe landing can be made at a specific airport. The types of standard instrument approach procedures include nonprecision and precision approaches based on International Civil Aviation Organization (ICAO) standard Navigation Aid (NAVAID) (ILS, MLS, VOR, VOR/DME, NDB) as well as approaches based on ATC radar services (ASR/PAR). Special instrument approaches procedures have also been developed for approaches requir-

ing the use of special equipment such as area navigation systems, Loran C, airborne radar, or other combinations of navigation systems.

445. CATEGORIES OF INSTRUMENT APPROACH PROCEDURES. Various categories of instrument approach operations have been established to accommodate a wide variety of airborne and ground- or space-based capabilities. These operational categories are necessary for the granting of credit to operators who choose to establish capabilities exceeding the minimum regulatory requirements. These operational categories also provide the distinction between operational capabilities and ground support system configurations. CAT I, CAT II, and CAT III are the three basic categories of instrument approach operations.

A. *CAT I Operations.* CAT I operations are defined as approach and landing operations conducted under IFR using CAT I operating minimums. CAT I operating minimums consist of a specified IFR "altitude or height," minimum descent altitude (MDA) or decision height (DH) that is not lower than the equivalent of 200 feet (60 meters) above the touchdown zone, and a visibility, runway visual value (RVV), or a (RVR) that is not lower than 1/2 statute mile or RVR 1800 respectively. CAT I operations include both precision and nonprecision straight-in approaches and approaches which require a circling maneuver to safely complete a landing on the intended runway. If authorized, circling maneuvers may be used to complete a visual landing on the intended runway following the completion of the instrument portion of either a precision or nonprecision approach. CAT I operations also include visual approaches, CVFP, and contact approaches.

B. *CAT II Operations.* CAT II operations are precision approach and landing operations conducted with a DH of less than 200 feet (60 meters) but not less than 100 feet (30 meters), and a RVR of not less than 1200 feet (350 meters).

C. *CAT III Operations.* CAT III operations are separated into three separate subcategories: CAT IIIa, CAT IIIb, and CAT IIIc.

(1) *CAT IIIa Operations.* CAT IIIa is a precision approach and landing operation with an RVR of not less than 700 feet (200 meters) without a DH, or with a DH of less than 100 feet (30 meters), or an alert height (AH) of 100 feet (30 meters) or less. Both fail-passive and fail-operational airborne equipment can be used in CAT IIIa operations.

(2) *CAT IIIb Operations.* CAT IIIb is a precision approach and landing operation with an RVR of less than 700 feet (200 meters) but not less than 150 feet (50 meters) and a DH of 50 feet (15 meters) or less, or an AH of 100 feet (30 meters) or less. Fail-operational airborne equipment must be used for CAT IIIb operations.

(3) *CAT IIIc Operations.* CAT IIIc is a precision approach and operation landing without a DH and without RVR limitations (zero-zero). CAT IIIc operations are not currently authorized.

447. OPERATING MINIMUMS. The lowest operating minimums for operations conducted under FAR Parts 121 and 135 are specified in standard operations specifications. In general, an air carrier is authorized to use operating minimums specified by the following groups of instrument approach procedures, provided the minimums are not lower than the lowest minimums specified in the air carrier's operations specifications for any particular type of approach procedure.

- A FAR Part 97 instrument approach procedure
- U.S. military instrument approach procedures at U.S. military airports
- Any instrument approach procedures approved and incorporated in the operations specifications
- ICAO contracting state instrument approach procedures at foreign airports
- Instrument approach procedures established by an air carrier at foreign airports provided the procedure is accepted in accordance with the operations specifications

449. CONTROLLING MINIMUM CONCEPT. The concept of a controlling minimum is based on reported weather conditions at the destination airport. The controlling minimum concept includes considerations for the reported weather conditions, the capabilities of the flightcrew, and the capabilities of the airborne and ground- or space-based equipment. This concept prohibits a pilot from continuing past the final approach fix (FAF), or beginning the final approach segment of an instrument approach procedure unless the reported visibility (RVV or RVR, if applicable) is equal to or greater than the authorized visibility (RVV or RVR) minimum for that instrument approach procedure. The basic objective of the controlling minimum concept is to provide reasonable assurance that once the aircraft begins the final approach segment, the pilot will be able to safely complete the landing. The controlling minimum concept, however, permits a pilot to continue a CAT I approach to DH or MDA if the visibility/RVV/RVR was reported to be at or above the controlling minimum when the pilot began the final approach segment even

though a later visibility/RVV/RVR report indicates a below minimum condition. RVR reports, when available for a particular runway, are the reports (controlling reports) that must be used for controlling whether an approach to, and landing on, that runway are authorized or prohibited.

A. *FAR Part 121 CAT I Controlling Minimum.* The CAT I controlling minimum concept for operations conducted under FAR Part 121 is implemented by FAR § 121.651(b). For these operations, the controlling minimum must be used at civilian airports within the U.S. and its territories, and at U.S. military airports, unless the provisions of FAR § 121.651(d) are met. FAR § 121.651(d) permits a pilot to begin the final approach segment even though the reported visibility/RVV/RVR is below the controlling minimum, if the approach procedure is an ILS and the flight is actively monitored by a precision approach radar (PAR). Therefore, pilots are not constrained by the controlling minimum on runways with ILS and active PAR facilities, provided the provisions of FAR § 121.651(d) are met. The controlling minimum concept allows for a pilot to continue a CAT I approach to DH or MDA if the visibility/RVV/RVR was reported to be at or above the controlling minimum when the pilot began the final approach segment even though a later visibility/RVV/RVR report indicates a below minimum condition. Upon reaching DH or MDA and before passing the MAP, the approach may be continued below DH or MDA to touchdown if the requirements of FAR § 121.651(c) are met even though the visibility/RVV/RVR is reported to be below the controlling minimum. The controlling minimum concept does not apply to FAR Part 121 operations conducted at civilian airports in many foreign countries. In foreign countries, FAR Part 121 operators may conduct "look-see" approaches (see paragraph 451) unless the rules of a foreign country (such as the United Kingdom) prohibit look-see approaches. If the rules of the foreign country prohibit look-see approaches, the controlling minimum concept applies in that country.

B. *FAR Part 135 CAT I Controlling Minimum.* The controlling minimum concept for FAR Part 135 differs in application from FAR Part 121. FAR Part 91 applies to all FAR Part 135 operations whether they are conducted in foreign countries or the U.S. (see FAR § 135.3(b). Operations conducted under FAR Part 135 must also be in compliance with FAR § 135.225 (which applies to all operations within the U.S., U.S. territories, U.S. military airports, and foreign airports). For FAR Part 135 operations the controlling minimum concept must be used at all airports. As a consequence, FAR Part 135 operators are prohibited by FAR § 135.225(b) from conducting look-see approaches at any airport (see paragraph 451). The controlling minimum concept, however, allows for a pilot to continue a CAT I approach to DH or MDA if the visibility/RVV/RVR was reported to be at or above the controlling minimum when the pilot began the final approach segment, even though a later visibility/RVV/RVR report indicates a below minimum condition. The controlling minimum concept also allows for a pilot (upon reaching DH or MDA and before passing the MAP) to continue the approach below DH or MDA and touchdown, if the requirements of FAR § 91.175(c) are met, even though the visibility/RVV/RVR is reported to be below the controlling minimum.

451. "LOOK-SEE" APPROACHES. A look–see approach is an authorization to begin an instrument approach and to continue to DH or MDA to have a look–see at the seeing–conditions actually available at those points. Look–see approaches are approaches which can be started and then continued to the three–dimensional point established by the DH or the MDA and the MAP, even when the weather conditions are reported to be below the authorized IFR landing minimums. Upon arrival at the MDA and before passing the MAP, or upon arrival at the DH, the approach may be continued below DH or MDA if the seeing-conditions required by FAR § 121.651(c) or FAR § 91.175(c) are met. A pilot can continue to land using external visual reference if the necessary seeing-conditions are established before passing DH or MDA/MAP. The operational need for look-see approaches is created by wide variations among foreign countries in weather observing, weather reporting practices, and because of limitations associated with manually derived and forwarded weather reports (especially during rapidly changing weather conditions). The weather observation is often taken from a location which is several miles from the landing surface and may not be representative of seeing-conditions encountered at DH, MDA/MAP, or during landing. FAR Part 121 operators may conduct look-see approaches at foreign airports civil and military unless they are specifically prohibited by the foreign country. FAR Part 121 operators, however, are prohibited from conducting look-see approaches at all U.S. airports. FAR Part 135 operators are prohibited from conducting look-see approaches at all airports, both domestic and foreign, by FAR § 135.225.

453. INSTRUMENT APPROACH PROCEDURES.

A. An instrument approach procedure (IAP) is a series of predetermined maneuvers for the orderly and safe transfer of an aircraft under instrument flight

conditions, from the beginning of the initial approach to one of the following:

- An automatic landing
- A position from which a landing can be made visually
- A position from which a missed approach can be executed and completed if external visual references necessary to complete the landing are not established before passing DH or MDA/MAP

B. An instrument approach and its operating minimums are usually prescribed and approved for a specific airport and/or runway by the aviation authority that has jurisdiction over flight operations at that airport. The FAA is responsible for developing all civil IAP's and for specifying the operating minimums for all IAP's in the U.S., its territories, and the U.S. Army IAP's worldwide. In the case of other military IAP's, an instrument approach and its operating minimums are prescribed and approved for a specific airport and/or runway by the authority having jurisdiction over flight operations. There are various types of IAP's that are or may be approved for use by U.S. air carriers. These types of IAP's include the following:

- IAP's published in accordance with FAR Part 97
- IAP's authorized in operations specifications
- FAA-approved special IAP's (FAA Form 8260–7, "Special Instrument Approach Procedure")
- Department of Defense (DOD) IAP's at U.S. military airports
- IAP's published by a foreign country
- IAP's developed by an air carrier in a foreign country in accordance with FAA Order 8260.31, "Foreign Terminal Instrument Procedures"

455. U.S. STANDARD INSTRUMENT APPROACH PROCEDURES (SIAP). SIAP that are approved for all users of the U.S. National Airspace System (NAS) are published in accordance with FAR Part 97 and are incorporated in the operations specifications by reference. Even though CVFP are available for public use by aircraft on IFR flight plans, they are not instrument flight procedures. Except for CVFP's, it may be assumed that any SIAP charted in a National Oceanic Service (NOS) flight information publication is appropriately published in FAR Part 97.

457. OTHER INSTRUMENT APPROACH PROCEDURES (IAP). If an IAP is published in accordance with FAR Part 97 and is based on International Civil Aviation Organization (ICAO) standard NAVAID's, it is available for all users of the U.S. NAS. If, however, an IAP and its operating minimums are not published in accordance with FAR Part 97, other means have been established to authorize their use. In such cases, IAP is incorporated in operations specifications by reference (either with or without additional restrictions). This group of instrument procedures not published in Part 97, includes IAP's developed by certain U.S. military organizations, foreign governments, air carriers, and IAP's based on nonstandard NAVAID's such as TACAN, TALAR, airborne radar, or commercial broadcast stations. Many of these approach procedures are not available to all users due to the special training, knowledge, or equipment required to safely conduct them.

A. *U.S. Military IAP's.* U.S. military IAP's are approved by the local base commander and published by the DOD. Since these procedures comply with U.S. terminal instrument procedures (TERPS) criteria, U.S. military IAP's must be used by air carriers when operating at military airports, unless the procedure is noted "Not For Civil Use" by the military. IAP's published by the DOD for U.S. military airports are incorporated in the operations specifications by reference.

B. *Foreign Government IAP's.* IAP's and their operating minimums at foreign airports are established by the foreign authority having jurisdiction over flight operations at the airport. In general, the IAP's and operating minimums (if specified) at most foreign airports are developed in accordance with U.S. TERPS or ICAO procedures for air navigation services aircraft operations (PANS-OPS) criteria. IAP's developed by foreign authorities using TERPS or PANS-OPS are approved for use by U.S. air carriers in accordance with FAA Order 8260.31 and are incorporated in the operations specifications by reference. In some cases it may be necessary to restrict certain foreign IAP's to make them equivalent to U.S. or ICAO criteria. FAA Order 8260.31 provides direction and guidance for restricting such foreign IAP's. When a restriction to a foreign IAP is required, it must be specified in paragraph C58 of the operations specifications.

C. *IAP's Developed By An Air Carrier.* At some foreign airports, an air carrier may need to develop or choose to develop an IAP. The operations specifications enable an air carrier to exercise this option, provided the developed procedure meets either U.S. TERPS or ICAO PANS-OPS criteria. In such cases, the IAP developed by the air carrier may be authorized

for use by listing it in paragraph C64 of the operations specifications, provided the air carrier submits appropriate supporting information in accordance with FAA Order 8260.31. These procedures may be based on either public or private NAVAID's.

D. *Non-Federal NAVAID's.* Non-federal NAVAID's can be used for public and special IAP's. Approval for the use of these NAVAID's within the NAS is established in FAA Order 6700.14, "Ground Certification of Non-FAA Federally Owned (Non-Military) Navigational Aids," and FAR Part 171. An inspector should become familiar with these documents before issuing approval to use these IAP's. Approval to use these IAP's is accomplished by listing them in paragraph C64 of the operations specifications.

E. *Commercial Broadcast Station IAP's.* In the past, limited authorizations to use commercial broadcast stations have been granted in unique situations. The need for these procedures has been steadily declining because of the increased availability of standard NAVAID's. In general, new approach procedures based on commercial broadcast stations will not be approved. In any case, AFS–400 review and concurrence must be obtained before an inspector may approve an IAP based on commercial broadcast stations.

F. *Special IAP's.* Special IAP's are those procedures developed by the FAA but not published in accordance with FAR Part 97. These special IAP's are not approved for general use due to the special training, procedures, knowledge, and/or equipment required to safely conduct them. Due to these special requirements, the use of special IAP's must be authorized on an operator–by–operator basis. Special IAP's are issued on FAA Form 8260–7 and authorized in paragraph C64 of the operations specifications.

G. *IAP's Outside of Controlled Airspace.* Since ATC separation services are an important element of safe instrument approach operations, special consideration and evaluation is required before operations can be authorized outside of controlled airspace (no ATC separation services available). This situation occurs when conducting an IAP at an airport that does not have an operating control tower or when a control zone is not active. The airports at which portions of IAP's are outside of controlled airspace must be authorized by paragraph C64 of the operations specifications.

459. SPECIAL APPROACH AND LANDING OPERATIONS. U.S. TERPS contain the established minimum criteria for standard IAP's within the U.S. NAS. PANS-OPS, volume II contains the established minimum criteria for IAP's in most foreign countries. These criteria allow for safe instrument approach and landing capabilities for aircraft equipped with ICAO standard NAVAID's (ILS, MLS, VOR, VOR/DME, NDB). Many operators have chosen to use airborne equipment exceeding the minimum capabilities required for instrument flight. A means of granting operational credit for using equipment with these increased capabilities has been established. The operations specifications provide the method to approve approach and landing operations using such airborne equipment. Examples of airborne equipment with increased capabilities include automatic landing systems (autoland), manually flown electronic landing systems (HUD), area navigation systems (RNAV), Loran C systems, and airborne radar approach systems (ARA). The following subparagraphs briefly discuss these systems.

A. *Autoland.*

(1) *General.* Many large transport category airplanes are equipped with autoland systems, and a few helicopters are equipped with automatic deceleration and hover systems. As technology evolves, the trend of using autoland systems is increasing. Autoland systems are already standard features on many new airplanes. An air carrier, however, is not authorized to use autoland systems to touch down in FAR Parts 121 and 135 operations unless the particular flight control guidance system is authorized for autoland by the operations specifications. FAR § 121.579 and FAR § 135.93 prohibit the use of most autopilots below certain heights (50 feet or greater) during approach and landing operations, even during VFR weather conditions. The intent of these rules is to provide pilots with the terrain or obstacle clearance and reaction time necessary to safely intervene if the autopilot malfunctions. This is especially critical if the autopilot abruptly commands a hard-over, nose-down condition. Many autopilots ("single-channel" autopilots) used in FAR Parts 121 and 135 operations are not designed to provide the redundancy necessary to automatically detect all failure combinations. If such failures occur, the pilot must intervene, disconnect the autopilot, and recover manually. Since an aircraft will lose altitude if a hard-over, nose-down condition occurs, the autopilot must be routinely disengaged before descending below the height above terrain specified by FAR § 121.579 or § 135.93, as appropriate. Failure to disconnect the autopilot before descending below these heights could lead to ground contact during a recovery attempt if a malfunction should occur. Many aircraft are now equipped, however, with an automatic flight control guidance system designed to provide the performance, redundancy, and reliability necessary to detect all significant failure

combinations and to prevent the autopilot from failing in a hard-over, nose-down condition (zero height loss). With these aircraft and equipment combinations, the safety objective of FAR § 121.579 and § 135.93 can be met even if the system is used to touchdown. "Fail-passive" and "fail-operational" automatic landing systems provide this capability and can be approved for use to touchdown. The operator's approved training curriculum must include training on autoland operations, and the autoland equipment must be properly certificated and maintained. POI's shall authorize the use of autoland to touch down by issuing paragraph C61 of the operations specifications, "Flight Control Guidance Systems for Automatic Landing Operations Other Than Categories II and III," in accordance with FAA Order 8400.10 and FAR § 121.579(c) or § 135.93(d).

(2) *Use of Autoland to Meet Recency of Experience Requirements for Landings Required by FAR § 121.439.* Paragraph C61 of the operations specifications, dated January 11, 1988, states that the certificate holder is authorized to conduct automatic approach and landing operations (other than CAT II and III) at suitably equipped airports. The certificate holder shall conduct all automatic approach and landing operations in accordance with the provisions of this paragraph. POI's shall observe and adhere to the following direction and guidance involving the granting of landing credit for the use of autoland to meet recency requirements:

(a) *Restriction.* Only one autoland may be used toward satisfying the three landing currency requirements.

(b) *Credit for Autoland.* Credit for one landing each may go to both the pilot-in-command (PIC) and to the second-in-command (SIC).

(c) *Definitions.* For the purposes of this paragraph, the following definitions are applicable:

1. *Autoland Approach:* An autoland approach is a precision instrument approach to touchdown, and in some cases, through the landing rollout. An autoland approach is performed by the aircraft autopilot, which is receiving position information and/or steering commands from onboard navigation equipment. Autoland approaches are flown in VFR and IFR. It is common for operators to require their aircrews to fly coupled approaches and autoland approaches (if certified) when the weather conditions are less than approximately 4,000 feet RVR.

2. *Automatic Landing Systems:* An example of modern airborne equipment, the autoland is often standard on many new airplanes. This modern system gives the aircrew increased capabilities by enabling them to make safer instrument approaches and landings than those being done without the autoland. Autoland also refers to the landing that is accomplished with the autoland when activated during an IFR landing. The aircrew is required to constantly monitor this system to ensure safe operation of the aircraft.

B. *Manually Flown Flight Control Guidance Systems Certificated For Landing Operations.* Historically, pilots have not had flight director systems and other instrument information that enabled safe manual control of an aircraft to touchdown in instrument conditions. The recent development of flight control guidance systems such as HUD provides the pilot with instrument information in a manner that enables safe manual control of the aircraft through touchdown and rollout. The flight guidance provided by these systems enables a pilot to duplicate the performance and functions of an autoland system. Although the provisions of FAR §§ 121.579 and 135.93 do not specifically address use of manually flown flight control guidance systems, the safety objective of these rules is clearly applicable to their use. These systems provide flight guidance information equivalent to the performance, redundancy, reliability, and the hard-over, nose-down protection provided by autoland systems that are approved for use to touchdown. Manually flown flight control guidance systems certified for landing operations can be approved for use to touchdown. The operator's approved training curriculums must include training on such manually flown operations, and the equipment must be properly certificated and maintained. Use of these manually flown systems to touchdown can be authorized by the issuance of paragraph C62 of the operations specifications in accordance with this handbook.

C. *Area Navigation Systems.* IAP's based on RNAV's are not published in FAR Part 97. Within the U.S., these approaches are special IAP's developed for special use and issued on FAA Form 8260-7. An RNAV IAP may be developed and used by an air carrier, provided supporting information is submitted to the FAA. Since criteria for RNAV IAP's have not been established in ICAO PANS-OPS, all foreign RNAV IAP's must be developed in accordance with U.S. criteria. The use of RNAV systems to conduct IAP's can be authorized by issuing paragraph C63 of the operations specifications. RNAV IAP's are special IAP's; therefore, each RNAV IAP approved for a particular air carrier must be listed in paragraph C64 of the operations specifications.

D. *Airborne Radar Approaches.* ARA's are based on the use of airborne radar. Within the U.S,

ARA's are classified as special IAP's and are established by the issuance of FAA Form 8260–7. Use of ARA's can be authorized through operations specifications, if the criteria in Advisory Circular (AC) 90–80, "Approval of Airborne Radar Approach (ARA) Procedures for Helicopters to Offshore Platforms," as amended, and this handbook are met.

E. *Offshore Approach Procedures (OSAP).* OSAP's are based on the use of Loran C and the airborne radar systems. OSAP's are established and approved in accordance with the criteria in AC 90–80. The use of OSAP's can be authorized by operations specifications.

461. GLOBAL POSITIONING SYSTEM (GPS) APPROACH PROCEDURES. The FAA has authorized GPS overlay approaches in order to accelerate the availability of nonprecision instrument approach procedures that can be flown using IFR certified GPS equipment. The overlay approaches allow pilots to use GPS equipment to fly existing VOR, VOR/DME, NDB, NDB/DME, and RNAV nonprecision instrument approach procedures. The purpose is to permit pilots to transition from ground-based to satellite-based navigation technology for instrument approaches.

A. *Compliance with FAR §§ 121.349 and 135.165.* Air operators may be authorized to use single GPS navigation equipment as a primary navigation system for IAP's if the airplane is equipped with two VOR receivers, or two automatic direction finder (ADF), as appropriate, receivers and ground NAVAID'S are positioned such that the flight can, following the failure of the GPS system, continue safely to a suitable alternate airport and complete an approach using the remaining airborne equipment. Additional requirements may be mandated for airports requiring special qualification in accordance with FAR § 121.445 as provided in volume 3.

B. *Alternate Airport Requirements.* Required alternate airports must have an approved instrument approach procedure, other than GPS or LORAN C, which is anticipated to be operational at the estimated arrival time.

463. GPS OVERLAY APPROACH PROCEDURES. The data that supports en route and terminal operations and a navigation database that supports GPS overlay nonprecision instrument approaches (except localizer, LDA, and SDF) contain the coordinates for the waypoints, fixes, and NAVAID's published in FAR PART 97, Standard Instrument Approach Procedures. Special instrument approach procedure data may be included at the request of those operators authorized to use the procedures. Data for approach procedures into military airports also may be included if the procedures are available, and authorized for civil operations. In addition, all waypoints to support GPS stand alone approaches are also contained in the database. Air operators must be specifically authorized to conduct instrument approach operations using GPS. To authorize GPS approaches, operations specifications paragraph B31 will require amendment.

A. *GPS Overlay.* GPS overlay approaches are limited to U.S. NAS. Whether or not an approach is included in the database depends on its codability and flyability using GPS equipment. Therefore, FAR Part 97, military, and special approaches are classified into codable and non-codable nonprecision instrument approaches.

NOTE: An aircraft is not authorized to fly any IFR approach using GPS unless that instrument approach procedure is retrievable from the navigation database.

(1) *Codable Approach Procedures.* All approved GPS navigation databases contain the latitude and longitude coordinates for waypoints, fixes, and NAVAID's for those FAR Part 97 civil use, and military, nonprecision approaches considered codable for database purposes and considered safe to fly by the FAA using normal piloting techniques. Special approaches may be included at authorized user request.

(2) *Non–Codable Approach Procedures.* Certain Far Part 97 nonprecision instrument approaches as well as some military and special procedures may present an unresolvable coding situation relating to database or equipment interface constraints. An approach may be determined to be not codable or not flyable by the FAA, by the database coding agency, or by the manufacturer of the navigation equipment. In addition, some procedures may, in the opinion of the FAA, present a potential safety hazard to normal piloting techniques using GPS equipment. These procedures will not be included in navigation databases. Approach procedures that are omitted from the database can not be legally flown using GPS navigation equipment.

(3) *Waypoints.* As a minimum, the GPS overlay approaches require that the databases contain waypoints representing the IAF, FAF, MAP, and the missed approach holding point for each VOR, VOR/DME, NDB, NDB/DME, TACAN, and RNAV nonprecision instrument approach procedure. Intermediate Fixes (IF) and all named fixes are also included. All waypoints are displayed in the same sequence as they are presented on the published nonprecision instrument approach procedure charts.

NOTE: User modification or entry of data associated with published instrument approach procedures is not possible, and not authorized.

(a) Waypoint data utilized in nonprecision instrument approach procedures is stored by name or identifier, and latitude and longitude. The waypoints are not designated in terms of bearing (or radial) and distance to/from a reference location.

(b) Waypoints that define the MAP and Missed Approach Holding Point (MAHWP) are always coded as "fly over". This type of waypoint requires the aircraft to pass directly over it.

(c) When turn anticipation is expected at an IAF or other waypoint the waypoint is coded as "fly by".

(4) *Waypoint Names Coded in the Navigation Database.* Flying an FAR Part 97 or military non-precision instrument approach procedure using GPS equipment should be transparent to air traffic control. Therefore, the same track is flown whether using GPS equipment or standard ICAO NAVAID's. Waypoints coded in the navigation database reflect exactly those names appearing on the instrument approach procedure. For example, if an IAF or other fix is assigned a pronounceable five-letter alpha character name, it will be the same name coded in the database, the name which will appear on the avionics display, the name appearing on a chart, and the name verbally used by ATC. If no five character name is published for the approach waypoint fix, it will normally be coded with a database identifier. A pilot must associate the coded name appearing on the display with the position shown on the chart. However, these coded names may not be known or used by ATC.

(a) *Initial Approach Waypoint.* If the IAF is a named waypoint or fix, then the same name is used for the IAF waypoint in the database. If the IAF is a NAVAID, the IAF waypoint is coded with the NAVAID identifier.

(i) A database identifier is provided for an unnamed IAF.

(ii) When an IAF is the beginning of a DME arc segment, the IAF is often unnamed, but is marked by a radial intersecting the arc. In these cases, the unnamed IAF waypoint is coded in the database to represent the beginning of the DME arc.

(b) *Turning points in the Initial Segment.* An initial segment may incorporate a named or unnamed turn point to intercept a course.

(i) In some cases, a waypoint may be established at turn point where a dead reckoning heading intersects the course. This waypoint is coded into the waypoint sequence for GPS navigation, but may not be named on the chart.

(ii) A turn point may be defined by the intersection of two NAVAID radials or bearings. In this case, a waypoint name appears in the sequence.

(c) *Intermediate Waypoint.* If the IF is a named waypoint or fix, then the same name is used for the IF waypoint in the database. If the IF ia a NAVAID, the IF waypoint is coded with the NAVAID identifier. An unnamed IF is assigned a database identifier.

(d) *Final Approach Waypoint.* Procedures With a Final Approach Fix (FAF). If the FAF is a named waypoint or fix, the same name is used for the FAF waypoint in the database sequence. An unnamed FAF, such as a DME fix, is coded with a descriptive FAF waypoint related to the NAVAID providing final approach course guidance. It also appears in the waypoint sequence.

(i) *Procedures Without a FAF.* Procedures without a FAF and without a stepdown fix have a Sensor FAF waypoint coded in the database at least 4 NM to the MAP waypoint. (The MAP, in this case, is always located at the NAVAID facility.) A Sensor FAF is a final approach waypoint created and added to the database sequence of waypoints to support GPS navigation of an FAA published, non-FAF, nonprecision instrument approach procedure. The coded name or Sensor FAF appears in the waypoint sequence. If a stepdown fix exists on the published procedure and it is greater than 2 NM to the MAP, the stepdown fix is coded in the database as the Sensor FAF waypoint for the waypoint sequence. If a stepdown fix distance is 2 NM or less to the MAP, a Sensor FAF waypoint is coded at least 4 NM to the MAP.

(e) *Missed Approach Waypoint.* When a missed approach point is located at the NAVAID, the MAP waypoint is coded in the sequence at the NAVAID position using the NAVAID identifier. When the missed approach is initiated near the runway threshold (timed approach) or at a specified DME distance from a NAVAID, a MAP waypoint is created and coded in the database.

(f) *Missed Approach Holding Points.* Missed approach holding points are normally at a NAVAID or named fix. Therefore, the NAVAID identifier or the fix name is coded in the database as the missed approach holding waypoint and appears in the waypoint sequence.

(g) *Waypoints and Fixes not Coded for GPS Overlay Approaches.* A Visual Descent Point (VDP)

is a fix appearing on some published nonprecision approach procedures that is not included in the sequence of waypoints. Pilots are expected to use normal piloting techniques for beginning the visual descent. In addition, unnamed stepdown fixes in the final approach segment will not be coded in the waypoint sequence unless the stepdown fix is used as a Sensor FAF on a non–FAF procedure.

(5) *Approach Selection Process.* Pilots must retrieve instrument approach procedures from the database through a menu selection process. No manual waypoint loading is permitted, although some pilot action is required during certain segments of the approach (see figure 4.2.2.1.).

NOTE: This process may vary from one avionics manufacturer to another; therefore, pilots must be thoroughly familiar with the FAA–Approved Flight Manual or Flight Manual supplement.

(6) *Waypoint Sequence.* The sequence of waypoints in the database and those displayed by the equipment will consist of, as a minimum, waypoints representing the selected IAF and its associated IF's (when applicable), FAF, MAP, and the MAHWP.

(7) *Relationship of Avionics Displayed Waypoints to Charted Data.* GPS overlay approach waypoints contained in the database represent the waypoints, fixes, NAVAID's, and other points portrayed on a published approach procedure beginning at the initial approach fix. Certain unnamed points and fixes appearing on a chart are assigned a database identifier. There is no requirement to furnish charts with these database identifiers; however, charting agencies may incorporate them at their discretion.

NOTE: Database identifiers should not be used for pilot/controller communications and flight planning.

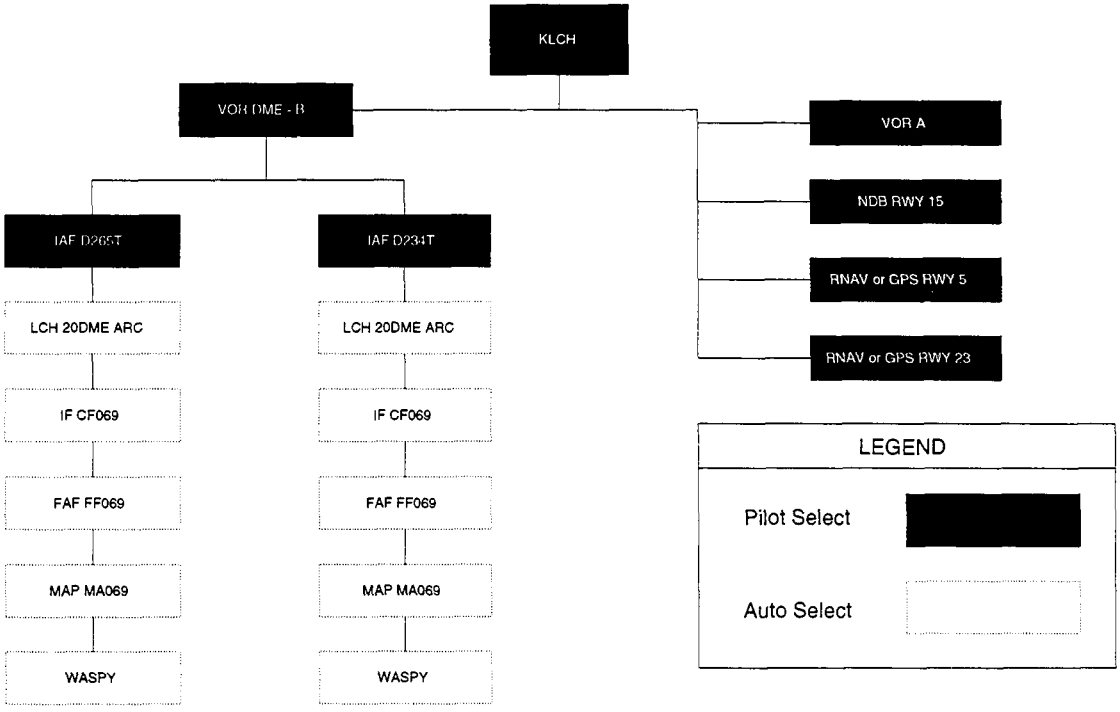
(8) *Differences Between Displayed and Charted Navigation Information.* There may be slight differences between the navigation information portrayed on the chart and the GPS navigation display. Course differences will occur due to an equipment manufacturer's application of magnetic variation. Distance differences will occur due to the mismatch between GPS ATD values and the DME values published on underlying procedures.

B. *The GPS Stand Alone Approach.* A sequence of waypoints defining the point to point track to be flown will be coded in the database including the initial approach waypoint, intermediate waypoint, final approach waypoint, missed approach waypoint, missed approach turning waypoint and missed approach holding waypoint. All waypoints, except a missed approach waypoint at the runway threshold, will be named with a five–letter alpha character name. Missed approach waypoints at the threshold will be assigned a database identifier. The sequence of waypoints appearing in the display should be identical to the waypoint sequence appearing on an associated approach chart.

464.–470. RESERVED.

FIGURE 4.2.2.1.
SAMPLE APPROACH SELECTION PROCESS

Lake Charles Regional Airport, Lake Charles, LA.



After selecting the airport and approach information as outlined in the FAA-approved Flight Manual or Flight Manual Supplement, the waypoints will be automatically presented in the proper order to fly the approach. Pilots must arm (enable) approach mode prior to the IAF.

This approach can be initiated from one of two IAF waypoints. These IAF waypoints are along the 20nm arc at points defined by the 234 and 265 degree radials from LCH. The IAF at R-234 will likely appear in the database as D234T. D234T represents a point located on the 234 degree radial of the Lake Charles VORTAC at 20nm, The letter T is the twentieth letter of the alphabet and is used to indicate a distance of 20nm. In addition, a waypoint is coded in the database at the intersection of the arc and final approach course CF069. The approach waypoint sequence in this case is D234T (IAF), CF069, FF069 (FAF), MA069 (MAP), and WASPY. The same sequence is provided for the other arc, except the it starts at D265T. The display in the receiver and procedure for flying the arc may vary with the manufacturer. Pilots should consult the FAA-approved Flight Manual or Flight Manual Supplement for further details.

From either IAF, normal piloting techniques are used to maintain the ground track of the arc route to the waypoint located at the intersection of the final arc and the final approach course (CF069). From here the GPS equipment will sequence to the FAF (FF069). At 2nm from the FAF, the display sensitivity begins transitioning to where full scale deflection is .3nm either side of the centerline.

At the FAF, the waypoint automatically sequences to the MAP (MA069). An along track distance is provided to the MAP waypoint. Since the step-down fix (d8.0) is not an FAA named fix, it is not included in the waypoint presentation, however, the point can be identified by an along track distance to MA069. When the ATD is 1.6nm to the map, the fix is identified. Note that on this approach there is a difference between the DME distance depicted in the profile view and the along track distance. In such cases, the along track distance at the bottom of the profile view can be used to monitor the GPS distance readout.

At the MAP waypoint the receiver automatically changes to manual operation and the pilot must sequence the receiver to the next active waypoint. Once complete, the missed approach waypoint (WASPY) is displayed as the next waypoint. The first part of the missed approach procedure is flown. Climb to 1,700 feet, then climbing right to 2,000 feet outbound via LCH VOR R249 to WASPY. Normal piloting techniques are to intercept a 249 degree course (a TO-TO bearing of 249 degrees) to WASPY. Display sensitivity begins to change to a full scale deflection of 1nm either side of centerline once WASPY is sequenced.

CHAPTER 5. AIR AMBULANCE OPERATIONS

SECTION 1. BACKGROUND AND DEFINITIONS

1335. INTRODUCTION. This chapter contains background information on air ambulance operations. It also contains information, direction, and guidance to be used by inspectors and principal operations inspectors (POI) when evaluating an operator's air ambulance procedures, general operations manual (GOM), or the unique requirements an operator must meet prior to being issued operations specifications paragraph A21a, "Air Ambulance—Helicopter"; or paragraph A21b, "Air Ambulance—Airplane." This chapter also contains specific crew training requirements and operational procedures for both airplane and helicopter air ambulance operations. A sequential breakdown of this chapter follows:

NOTE: Presently, the Operations Specifications Subsystem (OPSS) software will not provide the current paragraph A21, "Air Ambulance Operations." Until the software can be updated, it will be necessary for POI's to make manual revisions to the operations specifications. The guidance in volume 3, paragraph 103, is no longer valid and will be updated in a forthcoming change to 8400.10.

A. Section 1 contains general background information, such as air ambulance operations specifications, and definitions of the terms used in this chapter.

B. Section 2 contains guidance for inspectors when evaluating an operator's request to be issued Federal Aviation Regulations (FAR) Part 135 air ambulance service operations specifications.

C. Section 3 contains special operational procedures pertaining to FAR Part 135 air ambulance helicopter or airplane services.

D. Section 4 contains guidance to be used by inspectors when evaluating a FAR Part 135 operator's air ambulance training program.

1336. BACKGROUND.

A. The association between aviation and the medical professions has formed a sophisticated system of life-sustaining care for ill or injured passengers during air transportation. Air ambulance operators have met the public need and demand for such services by equipping aircraft specifically for this purpose. Flight Standards Service in consultation with air ambulance operators, medical care providers, and other industry organizations, has created specific operations specifications paragraphs to clarify the means these operators will use to comply with safety and regulatory requirements while conducting air ambulance operations.

NOTE: Situations will arise where a bona fide medical emergency exists and no air carrier with an air ambulance authorization is reasonably available. An air carrier without an air ambulance authorization may conduct an air ambulance operation to save a human life. That operator must file a report with the local flight standards district office (FSDO) within 10 days as required by FAR § 135.19. The FSDO must investigate the circumstances and determine if an actual emergency appeared to exist at the time of the operation. If not, enforcement action should be taken. Repeated air ambulance operations by an operator without an air ambulance authorization should be determined as holding out to the public to conduct an operation prohibited by its operations specifications.

B. The operations specifications that were effective in June 1992 defined air ambulance service solely in terms of medical equipment carried on board the aircraft. This created interpretation differences within the Federal Aviation Administration (FAA) and misunderstandings in the aviation community. The new operations specifications consider medical equipment, medical personnel, and patient needs in determining what constitutes an air ambulance operation.

1337. DEFINITIONS. The following terms are defined according to their use in this handbook:

A. *Medical Personnel.* Persons with medical training who are assigned to provide medical care during flight.

B. *Air Ambulance.* An aircraft used in air ambulance operations. The aircraft must be equipped with at least medical oxygen, suction, and a stretcher, isolette, or other approved patient restraint/containment device. The aircraft need not be used exclusively as an air ambulance aircraft, and the equipment need not be permanently installed.

C. *Air Ambulance Operations.*

(1) Air transportation of a person with a health condition that requires medical personnel as determined by a health care provider; or

(2) Holding out to the public as willing to provide air transportation to a person with a health condition that requires medical personnel including, but not limited to, advertising, solicitation, association with a hospital or medical care provider

D. *Local Flying Area.* An area designated by the operator in which air ambulance services will be conducted. Each local flying area should be defined in a manner acceptable to the operator, the local FSDO, and the POI, taking into account the operating environment and geographic terrain features and capabilities of the aircraft.

E. *Emergency Medical Service (EMS).* The term "emergency medical service" has been replaced with the term "air ambulance operations."

F. *Response Scene.* The accident location to which an air ambulance has been dispatched for an air ambulance flight.

1339. OVERVIEW OF HELICOPTER AIR AMBULANCE SERVICES. Helicopter air ambulance operations have complexities not found in airplane air ambulance operations. This paragraph provides a general overview of some of those complexities, but details are contained in the appropriate paragraphs in this section.

A. *Paragraph A21a Authorizations.* Paragraph A21a of the operations specifications authorizes air ambulance helicopter service for hospital-to-hospital patient transfer work, accident scene work, and other offsite (unimproved site) work. A trend of weather-related accidents during aeromedical operations resulted in the inclusion of weather limitations for visual flight rules (VFR) flight with these operations specifications (see volume 3, chapter 1, section 1, of this handbook for additional background information on operations specifications). Paragraph A21a grants latitude to a helicopter operator for landing site selection as well as the authority to land on appropriate sites during both day and night in air ambulance operations.

(1) *Higher Minimums.* The authorization to conduct helicopter air ambulance operations is based on the operator's using higher ceiling and visibility minimums in uncontrolled airspace than is required for conventional FAR Part 135 operations.

(2) *Night Landings.* Night landings at unimproved sites are permitted with adequate lighting for the pilot to identify the landing site and surrounding hazards.

NOTE: "Adequate" lighting is lighting that allows a helicopter pilot to conduct a safe approach and landing during conditions of darkness while avoiding terrain and obstacles. The source of this lighting may be on the helicopter or on the surface and includes the possibility of automobile lights being used to illuminate the landing site. Pyrotechnic road hazard flares are not recommended for marking the touchdown area.

(3) *Local Flying Area.* The operator must define a local flying area for each base of operation and the description of the area, or a reference to the appropriate GOM page must be entered in operations specifications paragraph A21a. The approval of each local flying area must be coordinated by the POI with each local FSDO and may not necessarily be symmetrical.

NOTE: The size of the local area should be that which an operator could service adequately with a helicopter, taking into account the terrain features, obstacles, and capabilities of the helicopter. The descriptions in an operator's operations specifications should be clear and specific.

B. *Instrument Flight Rules (IFR) and VFR Requirements.* Operators of helicopter air ambulance operations must comply with the following requirements for IFR and VFR:

(1) *IFR Operations.* POI's of helicopter air ambulance operators conducting IFR operations should carefully evaluate the operator's procedures, training and qualification program, and the operating environment before granting the operator the authority to conduct single-pilot IFR operations with an autopilot.

(2) *VFR Operations.* When conducting VFR flight, the operator must comply with the weather minimums as specified in paragraph A21a. Operator requests for lower VFR minimums than specified in paragraph A21a must be coordinated with AFS-250 through the regional flight standards division (RFSD).

(3) *Training for Stress-Related Issues.* Flightcrews may experience high stress levels in air ambulance service operations due to the potential urgency for responding to emergencies related to preserving human life. POI's should ensure that operators give adequate attention to crew resource management (CRM) training to prevent inappropriate actions and decisions during periods of stress. One acceptable means operators may use to guard against inappropriate decisions is to require that the medical crew and

the PIC agree that the flight can be safely initiated and continued under the present conditions.

C. *Flight and Rest Time.* Operators may choose to schedule crews under one of several rules. In some cases, operators may conduct operations at different locations under different rules. The operator's GOM must contain the specific method to be used and how records are to be kept to show compliance with the rule used. POI's shall add a statement to paragraph A21a of the operator's operations specifications that identifies the specific section of the operator's GOM containing these procedures.

1341. OVERVIEW OF AIRPLANE AIR AMBULANCE SERVICES. This paragraph provides a general overview of airplane air ambulance operations, but details are contained in the appropriate paragraphs in this section.

A. *Paragraph A21b.* Airplane air ambulance operations do not differ significantly from other types of airplane air carrier operations. Operations specifications paragraph A21b specifies operational requirements and grants the operator authorization of air ambulance—airplane service.

B. *IFR Training.* POI's should encourage air ambulance operators to qualify all flightcrews to conduct IFR operations even though some operators may be VFR only. Conduct of an instrument approach is mandatory for VFR operators as an emergency procedure during proficiency checks under FAR § 135.293.

C. *Training for Stress-Related Issues.* See subparagraph 1339B(3).

1343. OPERATORS REQUIRING AIR AMBULANCE OPERATIONS SPECIFICATIONS.

A. *Regulatory Requirements.* An air ambulance operator must comply with all requirements of the FAR Part under which the operator is certified. Air ambulance operators are not exempt from any requirement of the FAR by reason of conducting air ambulance operations. To ensure industry standardization and a clear understanding between the FAA and air ambulance operators, operations specifications paragraphs A21a and A21b contain the specific means by which air ambulance operators can comply with the FAR. Some of these rules are as follows:

(1) *Certification Under a FAR Part.* Special Federal Aviation Regulation (SFAR) 38-2 specifies the FAR Part used to certify an operator based on the type and size of aircraft the certificate holder operates. An air ambulance operator must be certified under either FAR Part 121 or FAR Part 135 and comply with all provisions of the Part under which the operator is certified. The carriage of a person or persons requiring medical personnel and/or medical equipment on a scheduled air carrier, under FAR Parts 121 or 135, does not constitute air ambulance operations. However, a scheduled air carrier who transports a person or persons requiring medical personnel and/or equipment on an unscheduled flight (charter) is engaged in air ambulance operations. All helicopter operations must be conducted under FAR Part 135.

(2) *Certification Under FAR Part 121.* At the time of this writing, the majority of air ambulance operations are conducted under FAR Part 135. The information, direction, and guidance contained in this chapter applies to operations under FAR Part 135. If an operator requests air ambulance operations specifications with an airplane requiring operations under FAR Part 121, the POI receiving that request should contact AFS-200 through the applicable RFSD for direction and guidance.

B. *Advertising.* According to FAR § 135.31, an operator may not advertise or conduct operations that are not authorized by the operator's operating certificate and operations specifications. An operator without an air ambulance authorization is specifically prohibited, in paragraph A4 of the operations specifications, from conducting air ambulance operations.

C. *Operators Requiring Air Ambulance Operations Specifications Paragraphs.* All operators are initially prohibited from conducting air ambulance operations by paragraph A4 of their operations specifications. Those who desire to advertise and/or conduct air ambulance operations must have the prohibition removed by issuance of the appropriate air ambulance operations specifications paragraph. Operators holding FAR Part 135 operations specifications without paragraphs A21a or A21b may transport medical personnel as passengers who are accompanying a sick or injured person, but must meet the following requirements:

(1) They may not advertise air ambulance or in-flight patient care services.

(2) Any in-flight patient care equipment and medical personnel that accompany the passenger must be provided solely for the patient's comfort. If any medical care provider has determined that the medical personnel are required for the patient's safety, the flight is an air ambulance operation.

NOTE: When a life-threatening situation exists, a pilot-in-command (PIC) may exercise the PIC's emergency authority in accordance with FAR § 91.3, § 121.557, or § 135.19 to conduct air ambulance operations. The PIC who takes such action must report that action to the appropriate FSDO within 10 days. The

the PIC agree that the flight can be safely initiated and continued under the present conditions.

C. *Flight and Rest Time.* Operators may choose to schedule crews under one of several rules. In some cases, operators may conduct operations at different locations under different rules. The operator's GOM must contain the specific method to be used and how records are to be kept to show compliance with the rule used. POI's shall add a statement to paragraph A21a of the operator's operations specifications that identifies the specific section of the operator's GOM containing these procedures.

1341. OVERVIEW OF AIRPLANE AIR AMBULANCE SERVICES. This paragraph provides a general overview of airplane air ambulance operations, but details are contained in the appropriate paragraphs in this section.

A. *Paragraph A21b.* Airplane air ambulance operations do not differ significantly from other types of airplane air carrier operations. Operations specifications paragraph A21b specifies operational requirements and grants the operator authorization of air ambulance—airplane service.

B. *IFR Training.* POI's should encourage air ambulance operators to qualify all flightcrews to conduct IFR operations even though some operators may be VFR only. Conduct of an instrument approach is mandatory for VFR operators as an emergency procedure during proficiency checks under FAR § 135.293.

C. *Training for Stress-Related Issues.* See subparagraph 1339B(3).

1343. OPERATORS REQUIRING AIR AMBULANCE OPERATIONS SPECIFICATIONS.

A. *Regulatory Requirements.* An air ambulance operator must comply with all requirements of the FAR Part under which the operator is certified. Air ambulance operators are not exempt from any requirement of the FAR by reason of conducting air ambulance operations. To ensure industry standardization and a clear understanding between the FAA and air ambulance operators, operations specifications paragraphs A21a and A21b contain the specific means by which air ambulance operators can comply with the FAR. Some of these rules are as follows:

(1) *Certification Under a FAR Part.* Special Federal Aviation Regulation (SFAR) 38-2 specifies the FAR Part used to certify an operator based on the type and size of aircraft the certificate holder operates. An air ambulance operator must be certified under either FAR Part 121 or FAR Part 135 and comply with all provisions of the Part under which the operator is certified. The carriage of a person or persons requiring medical personnel and/or medical equipment on a scheduled air carrier, under FAR Parts 121 or 135, does not constitute air ambulance operations. However, a scheduled air carrier who transports a person or persons requiring medical personnel and/or equipment on an unscheduled flight (charter) is engaged in air ambulance operations. All helicopter operations must be conducted under FAR Part 135.

(2) *Certification Under FAR Part 121.* At the time of this writing, the majority of air ambulance operations are conducted under FAR Part 135. The information, direction, and guidance contained in this chapter applies to operations under FAR Part 135. If an operator requests air ambulance operations specifications with an airplane requiring operations under FAR Part 121, the POI receiving that request should contact AFS-200 through the applicable RFSD for direction and guidance.

B. *Advertising.* According to FAR § 135.31, an operator may not advertise or conduct operations that are not authorized by the operator's operating certificate and operations specifications. An operator without an air ambulance authorization is specifically prohibited, in paragraph A4 of the operations specifications, from conducting air ambulance operations.

C. *Operators Requiring Air Ambulance Operations Specifications Paragraphs.* All operators are initially prohibited from conducting air ambulance operations by paragraph A4 of their operations specifications. Those who desire to advertise and/or conduct air ambulance operations must have the prohibition removed by issuance of the appropriate air ambulance operations specifications paragraph. Operators holding FAR Part 135 operations specifications without paragraphs A21a or A21b may transport medical personnel as passengers who are accompanying a sick or injured person, but must meet the following requirements:

(1) They may not advertise air ambulance or in-flight patient care services.

(2) Any in-flight patient care equipment and medical personnel that accompany the passenger must be provided solely for the patient's comfort. If any medical care provider has determined that the medical personnel are required for the patient's safety, the flight is an air ambulance operation.

NOTE: When a life-threatening situation exists, a pilot-in-command (PIC) may exercise the PIC's emergency authority in accordance with FAR § 91.3, § 121.557, or § 135.19 to conduct air ambulance operations. The PIC who takes such action must report that action to the appropriate FSDO within 10 days. The

CHAPTER 5. AIR AMBULANCE OPERATIONS

SECTION 2. AUTHORIZATIONS FOR FAR PART 135 AIR AMBULANCE SERVICES

1355. GENERAL. This section contains guidance to be used by principal operations inspectors (POI) when evaluating a Federal Aviation Regulations (FAR) Part 135 operator's request to be issued operations specifications paragraph A21a, "Air Ambulance—Helicopter" or paragraph A21b, "Air Ambulance—Airplane."

A. *Certification of New Operators.* A district office may receive a request from an individual who does not currently hold an air carrier certificate to be certified as an air carrier with an air ambulance authorization. In this case, inspectors must follow the policies, direction, and guidance in volume 2, chapter 2, of this handbook. Inspectors should refer to sections 3 and 4 of this chapter to obtain policies, direction, and guidance for evaluating an air ambulance operator during phases two, three, and four of the certification process.

B. *Existing Operators Initiating Air Ambulance Operations.* Existing operators may request that POI's issue operations specifications paragraph A21a or A21b. POI's should consider a request to conduct air ambulance operations a potentially significant change in the certificate holder's operation.

C. *Relevant Documents.* The inspector conducting a certification or recertification of an air ambulance operator should become familiar with the contents of the following documents and should bring these documents to the attention of the operator:

- Volume 2, of this handbook, "Air Operator Certification"
- Volume 3, chapter 1, section 7, of this handbook, "Amendment, Surrender, and Suspension of Operations Specifications"
- Advisory Circulars (AC) 135.14A and 135.15, "Emergency Medical Services /Airplane or Helicopter"
- "Air Ambulance Guidelines" published by both the U.S. Department of Transportation, National Highway Traffic Safety Administration; and the American Medical Association, Commission on Emergency Medical Services
- AC 120.49, "Certification of Air Carriers"
- Volume 3, chapter 2 of this handbook, "Flightcrew Training and Qualification Programs"
- Volume 3, chapter 15, of this handbook, "Manuals, Procedures, and Checklists"

1357. EXISTING OPERATORS INITIATING AIR AMBULANCE OPERATIONS. POI's shall use the following direction and guidance when issuing paragraphs A21a or A21b of the operations specifications to existing operators:

A. *Initial Phase.* In the initial phase, the POI and the operator should meet to decide what documents the operator must create or modify and what proving or validation tests the operator must conduct. The POI must coordinate with the principal maintenance and avionics inspectors (PMI/PAI) when scheduling this meeting.

(1) The POI shall inform the operator of the requirement to prepare a new compliance statement. The operator should review each rule of FAR Part 135 and indicate those rules under which changes in the operator's compliance procedures will be required while conducting air ambulance operations. For those rules requiring no change, the POI may accept a simple statement such as "No change."

(2) The POI shall review the applicable air carrier certification job aids (see figures 2.1.1.1. through 2.1.1.3.), to determine the actions required. The "Date item accomplished/ ready for FAA insp." column of the job aid should be marked "N/A" for those items that will not be required. The POI should retain a copy of the job aid, and one should be given to the operator. The principal inspectors should coordinate informally with the regional flight standards division (RFSD) at this stage to ensure that all requirements have been identified. The RFSD should coordinate with AFS-500 for additional guidance, if required.

(3) The POI and the operator should come to a mutual agreement on the documents listed in volume 2, paragraph 85, that the operator will be required to provide or modify.

(4) Specific areas that should be reviewed include the following:

- Development of the air ambulance procedures section of the operator's general operations manual (GOM)
- Development of a flight manual and checklists appropriate to air ambulance operations
- Development of the air ambulance section of the operator's training and qualification program
- Equipment installation; medical oxygen, suction, and stretcher, isolette, or other patient restraint/containment device
- Exploration of the requirement for OST Form 4507, "Air Taxi Operator and Commuter Air Carrier Registration and Amendments Under Part 298 of the Regulations of the Department of Transportation"

B. *Formal Application Phase.* The operator must submit a letter requesting issuance of the appropriate operations specifications paragraphs, the new compliance statement, and those attachments listed in volume 2, paragraph 85, which have been determined to be applicable in the previous phase.

C. *Document Compliance Phase.* Prior to conducting this phase, inspectors should review the contents of volume 2, section 3. Inspectors should also refer to the direction and guidance of sections 3 and 4 of this chapter while conducting the required evaluations.

D. *Demonstration and Inspection Phase.* In this phase, only the applicable events of the job aid have to be accomplished. Inspectors should review volume 2, section 4, of this handbook for guidance when accomplishing this phase. Since unique circumstances surround each recertification, the POI shall informally coordinate with the RFSD before closing this phase. Specific criteria and procedures for inspectors to use when evaluating an operator's demonstrated ability are located in sections 3 and 4 of this chapter. These demonstrations include but are not limited to the following:

- Training in air ambulance procedures
- Emergency evacuations
- Air navigation under air ambulance operating procedures
- Operational control procedures

E. *Certification Phase.* Inspectors should review the contents of volume 2, section 5, before concluding the certification phase.

1358.–1368. RESERVED.

[PAGES 4-777 THROUGH 4-788 RESERVED]

CHAPTER 5. AIR AMBULANCE OPERATIONS

SECTION 3. AIR AMBULANCE SERVICE OPERATIONAL PROCEDURES

1369. GENERAL. This section contains information and guidance to be used by inspectors when evaluating a Federal Aviation Regulations (FAR) Part 135 operator's special operational procedures for air ambulance operations (helicopter or airplane). This section covers the evaluation of an operator's administrative, preflight, in-flight, emergency, and postflight procedures. To conduct an air ambulance operation, an operator must comply with all of the pertinent requirements of FAR Part 135 as well as meet certain requirements for the issuance of air ambulance operations specifications.

1371. ADMINISTRATIVE PROCEDURES. When evaluating an operator's administrative procedures for an air ambulance operations, inspectors should consider the following:

A. *Operational Control Procedures.* Inspectors should ensure that an operator's procedures for operational control are adequate for the operator's base of operations and for each satellite location (see FAR § 135.77). According to the definition in Subchapter A of FAR Part 1, operational control, with respect to a flight, means the exercise of authority over initiating, conducting, or terminating a flight. In an air ambulance operation, the pilot-in-command (PIC) exercises final authority to initiate, conduct, or terminate an assigned flight.

B. *Flight Time and Rest Requirements.* Inspectors should ensure that an operator maintains well defined records showing the difference of flight time, rest time, and off duty or unassigned time in accordance with FAR Part 135, Subpart F, "Flight Crewmember Flight Time Limitations and Rest Requirements." Air ambulance operators will normally operate under either one of the following regulations:

(1) *FAR § 135.267, "Flight time limitations and rest requirements.* Unscheduled one- and two-pilot crews." According to this FAR, the flight crewmembers are allowed to conduct any flight or other duties as assigned, such as training, testing, routine transport missions, while on duty/assignment. For an assignment conducted under this FAR, flight crewmembers must receive at least 10 consecutive hours of rest during the 24 hour period that precedes the planned completion of the assignment.

(2) *FAR § 135.271, "Helicopter hospital emergency medical evacuation service (HEMES)."* The rest requirements for HEMES differ from the requirements for flights conducted under FAR § 135.267. During operations in accordance with FAR § 135.271, provisions must be made for 8 consecutive hours of rest during any 24 hour period, and that 8-hour rest period must be declared in advance. If the flight crewmember does not receive the required rest period, that person must be relieved of the assignment. The operator should establish recordkeeping to show that only emergency medical evacuation flights are conducted during these assignments. While a flight crewmember is assigned to duty under FAR § 135.271, that person may not be assigned to any other duties. Prohibited duties during a HEMES assignment include, but are not limited to, maintenance test flights, public relations flights, and administrative duties.

NOTE: Inspectors should ensure that operators scheduling under FAR § 135.271 have identified those procedures and policies in their operations manual.

C. *Flight-Locating Procedures.* To ensure the safe and orderly accomplishment of an air ambulance service mission, each operator should develop a flight-locating system. Air ambulance operations should be conducted using instrument flight rules (IFR) and visual flight rules (VFR) flight plans and procedures, when feasible. The requirements for conducting flights that do not have flight plans filed are in FAR § 135.79. There must be flight-locating procedures for making the determination of when an aircraft is overdue. The operator's procedures must contain specific actions that are necessary when an aircraft is overdue in the situation. Elements that must be considered by inspectors when evaluating flight-locating procedures include the following:

- Procedures that provide the operator with all the information required to be included in a VFR flight plan
- Procedures that provide for the timely notification of a Federal Aviation Administration (FAA) facility or search and rescue facility, if an aircraft is overdue or missing (Ensure

that a flight-following facility has a trained, dedicated person monitoring the radios with written instructions to follow in the event of an overdue or lost aircraft.)

- Procedures that provide the operator with the location, date, and estimated time for reestablishing radio or telephone communications if the flight will operate in an area where communications cannot be maintained
- Communication procedures ensuring that actual departure times are transmitted to the flight-locating facility
- Procedures ensuring that position reports are made at specified intervals and are received by the flight-locating facility (If a hospital dispatcher is used for flight following, ensure that the dispatcher has written emergency procedures for reestablishing contact with the aircraft and for notification when the aircraft is overdue. If the medical facility does not have an assigned dispatcher, determine where the flight-following radio is located and who has responsibility for monitoring it. A radio in a common area answered by the nearest person is not acceptable.)
- Adequate training on the operator's flight-locating procedures for persons assigned flight-following duties at the operator's flight-locating facility

D. *Shift Change Briefing.* Inspectors must ensure that the operator has a procedure to ensure that the pilots coming on duty have received information concerning the following:

- Aircraft status (such as fuel, maintenance discrepancies)
- Anticipated flights
- Hazard updates
- Schedule changes
- Name and location of relief pilot
- Any other special circumstances

E. *Potential Hazard Information.* Inspectors should ensure that helicopter operators have developed a means at each base and satellite location for depicting uncharted hazards in the local flying area that may impair low flight or offsite landings. Operators should have established procedures for keeping this information current.

F. *Landing Site Depiction.* Inspectors should encourage operators to provide a portfolio, notebook, or other media containing photographs, video, drawings, or diagrams of each of the heliports used routinely by the operator. Operators should update this information regularly and keep it available as preflight information.

G. *Protection and Control of Infectious Conditions.* Operators should have procedures in their operations manual for the disposal and decontamination of medical or hazardous wastes. Operators should also have procedures in their operations manual for infection control and for aircraft cleaning, which may be provided by an associated medical service or hospital or could be contracted to a service company. Inspectors should ensure that precautions for all of the operator's employees are emphasized in the operations manual.

1373. PREFLIGHT PLANNING. When evaluating an operator's preflight planning procedures for an air ambulance service, inspectors should consider the following:

A. *Use of Local Flying Area Maps for Helicopter Operations.* In addition to the items normally accomplished during preflight planning, the PIC should become familiar with the current map of the area and the uncharted hazards for the area.

B. *Weather Considerations.* Weather considerations include the capability for obtaining current weather information for the area of operation at the time of the planned flight.

C. *Landing Site Update Information.* The PIC should review the operator's updated landing site portfolio for current operational information.

1375. IN-FLIGHT PROCEDURES. When evaluating an operator's in-flight procedures for an air ambulance service, inspectors should consider the following:

A. *Passenger Briefing Procedures.* The passenger briefing required by FAR § 135.117 may be conducted by a person designated and trained by the operator and approved by the FAA Administrator. If passenger briefing duties are delegated to a medical crewmember, the procedure must be covered in the operator's operations and training manuals. As in all FAR Part 135 passenger carrying operations, passenger briefing cards are required for air ambulance operations.

B. *Passenger Restraint Procedures.* It is the responsibility of the PIC to ensure that passengers who may pose a hazard to the aircraft or to its occupants are properly restrained before takeoff (such as hysterical patients or combative passengers).

C. *Air-to-Ground Communications.* Helicopters used in air ambulance services must have air-to-ground communication systems that ensure the safe and satisfactory completion of the flight. These systems must ensure that the flightcrew can coordinate with emergency personnel on the scene (such as the state and local police, and fire departments, when applicable).

D. *Scene Response Operations.* Inspectors and operators normally associate the term "scene response" with helicopter operations; however, scene response operations are not limited to helicopters; they may be airplane operations. Inspectors should consider the following operational procedures regarding scene response operations:

(1) Operators should have established procedures for in-flight coordination with local authorities. The PIC should establish communication with scene personnel (such as the state and local police, and fire departments, when applicable) as soon as possible after takeoff. An airplane, in a remote area with an adequate landing site, should attempt to relay communications through any agency with both aviation and police radios.

(2) The operations manual should have procedures for determining the suitability of the landing site, which should include the following:

- Obstacles
- Crowd control
- Security
- Wind direction and velocity
- Restrictions to visibility
- Illumination of obstacles by ground personnel at night

(3) The PIC must be aware that personnel on the ground may not have been trained to provide the PIC with accurate information from which the PIC can determine the suitability of a landing site. The final responsibility for the determination of the suitability of the landing site remains with the PIC.

(4) After a scene response landing, the PIC should refrain from getting involved with patient care. If the aircraft's engines are not shut down, the PIC should remain at the designated aircraft station and evaluate the takeoff area to predetermine a safe departure. If the engines are shut down, the PIC should make a physical reconnaissance of the intended departure path to determine the location of all obstacles.

NOTE: Aircraft station would be the assigned area of responsibility in or around the aircraft during a scene response that would allow the pilot to keep the public and emergency personnel from straying into a danger zone.

(5) The PIC is responsible during scene response operations for ensuring that the operator's safety procedures are complied with for movement in and around the aircraft, including loading and unloading.

(6) The operations manual should have specific policy guidance for coordination procedures between flightcrew and medical personnel.

1377. EMERGENCY PROCEDURES. When evaluating an operator's emergency procedures for an air ambulance service, inspectors should consider the following:

A. *Inadvertent Instrument Meteorological Conditions (IMC).* Operators must have emergency operational procedures for recovery from inadvertent IMC. These procedures must be in the operator's training manual.

B. *In-Flight Medical Emergencies.* For in-flight medical emergency situations, operators need procedures for the flightcrew coordination with medical personnel. The PIC must be able to remain excluded from the medical emergency. The PIC should use the "Lifeguard" prefix when communicating with air traffic control (ATC).

NOTE: Inspectors should encourage operators to include in their training program a course for pilots on exercising good judgment in crisis situations.

C. *Emergency Evacuation Procedures.* Operators must develop emergency evacuation procedures for each make and model of aircraft and aircraft configuration. This should include any additional duties assigned to the medical crew.

1379. SERVICING OF AIRCRAFT WITH PATIENTS ON BOARD. Inspectors should consider the following requirements when evaluating an operator's procedures for servicing aircraft when passengers (patients) are on board:

A. *Refueling Procedures.* Air ambulance operators may need to conduct operations that are not necessary in conventional FAR Part 135 operations, such as the refueling of an aircraft with the engine running, rotors turning, or with passengers on board. Before conducting such operations, the operator must develop procedures acceptable to the POI and publish these in the operator's general operations manual (GOM). The operator must train and qualify all applicable

personnel in these procedures before conducting such operations.

B. *Evacuation Procedures.* An operator's refueling and oxygen replenishment policies and procedures should include any special considerations for the evacuation of patients in case of emergencies.

1381. POSTFLIGHT PROCEDURES. The PIC is responsible for ensuring compliance with the operator's decontamination procedures for the protection from, and control of, infectious conditions.

1382.–1392. RESERVED.

[PAGES 4-793 THROUGH 4-804 RESERVED]

CHAPTER 5. AIR AMBULANCE OPERATIONS

SECTION 4. AIR AMBULANCE OPERATIONS TRAINING PROGRAMS

1393. GENERAL. This section contains guidance to be used by principal operations inspectors (POI) and inspectors when evaluating a Federal Aviation Regulations (FAR) Part 135 operator's training program for flightcrew and medical personnel in air ambulance operations. This section also contains elements that inspectors should consider when making such evaluations, as appropriate to the operator's operations (see volume 3, chapter 2, in this handbook for the types of training categories that operators must use in training curriculums in general). Operators must still comply with all other FAR Part 135 requirements and with other applicable guidance. This section covers the specifications for air ambulance—helicopter and air ambulance—airplane training programs, and coordination training for medical personnel and flightcrews in air ambulance operations.

NOTE: For the purposes of this training, a "response scene" refers to a site where in air ambulance operation is conducted, which involves nonroutine, hazardous situations.

1395. HELICOPTER TRAINING PROGRAMS. Inspectors should consider the following elements when evaluating an operator's helicopter flight training program and helicopter ground training program:

A. *Helicopter Flight Training Program.* Crew resource management (CRM) and crew coordination procedures are an integral part of each of the flight maneuvers that follow. Inspectors should ensure that each of these maneuvers is included in the operator's flight training curriculum:

- Unimproved takeoff/landing area operations
- Night cross-country
- Night cockpit lighting considerations
- Night forced landing
- Communications, air to ground and flight crew/medical crew
- Inadvertent instrument meteorological conditions (IMC) (should include demonstrated control of the aircraft in simulated or actual instrument meteorological conditions)
- Techniques used with lighting equipment

B. *Helicopter Ground Training Program.* Inspectors should ensure that the following areas are included in the operator's ground training curriculum:

- Day response scene operations
- Night response scene operations
- Obstacle recognition
- Use of local area maps
- Aircraft systems variations (such as special electrical generation)
- Passenger restraining methods in flight
- Local flying area orientation (day/night) (helicopter only)
- Handling problem passengers
- Adequacy of landing sites
- Flightcrew functions and responsibilities
- Foreign operations (if appropriate)
- Prevention and control of infectious conditions (to include knowledge of infectious and communicable diseases and diseases recently identified as occupational health risks, such as hepatitis B, herpes simplex, herpes zoster, and AIDS)

1397. AIRPLANE TRAINING PROGRAMS. Inspectors should consider the following elements when evaluating an operator's airplane flight training program and airplane ground training program:

A. *Airplane Flight Training Program.* There are no airplane flight training maneuvers that are unique to air ambulance services.

B. *Airplane Ground Training Program.* Inspectors should ensure that the following areas are included in the operator's ground training curriculum:

- Aircraft medical systems variations
- Passenger restraining methods in flight
- Handling problem passengers
- Flightcrew functions and responsibilities

- Prevention and control of infectious conditions (to include knowledge of infectious and communicable diseases, diseases recently identified as occupational health risks such as hepatitis B, herpes simplex, herpes zoster, and AIDS)

1399. MEDICAL PERSONNEL AND FLIGHT-CREW COORDINATION TRAINING.

A. *Training in Coordination Procedures.* In air ambulance service operations, the medical personnel and the flightcrew are involved in two distinct operations. While flight crewmembers are generally not required to be trained in any medical subject areas, medical personnel are required to be trained in some flight operational procedures. Additional training for medical personnel is permitted in specific areas that the operator deems necessary. Operators must have training in coordination procedures to be used between flight crewmembers and medical personnel in specified situations. These specific situations must include, but are not limited to, the following:

- Physiological aspects of flight
- Patient loading and unloading
- Safety in and around the aircraft
- Passenger briefing (when appropriate)
- Appropriate in-flight emergency procedures
- Emergency landing procedures
- Emergency evacuation procedures

B. *Medical Personnel Considered Crewmembers.* Medical personnel may or may not be considered crewmembers at the discretion of the operator. If the operator desires to consider the medical personnel crewmembers, the medical personnel must complete initial and recurrent crewmember training programs. Additionally, the medical personnel must perform some duty in an aircraft that relates to the operation of that aircraft, such as assisting the flightcrew in seeing and avoiding other aircraft, evaluating a landing site, coordinating with ground personnel at a landing site, and emergency shutdown of aircraft systems in a crash.

NOTE: If the medical personnel are crewmembers, they are not considered passengers. When only crewmembers are on board the aircraft, the flight may be conducted under FAR Part 91. When a patient or passenger is on board the aircraft, the flight must be conducted under FAR Part 135.

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CHAPTER 5. AIR CARRIER DESIGNATED EXAMINERS

SECTION 1. GENERAL

351. GENERAL. The information contained in this chapter supersedes the guidance provided by Order 8410.1A, "Designated Air Carrier Airman Examiner Handbook," which has been canceled. Under Title 49 of the United States Code (U.S.C) (formerly, the Federal Aviation Act (FA ACT) of 1958), Chapter 447, the Administrator may delegate the certification of airmen to any qualified person. In practice, the Administrator's certification tasks are delegated to the aviation safety inspectors within the Federal Aviation Administration (FAA) and to examiners outside of the FAA. Under the terms of Federal Aviation Regulation (FAR) Part 183, "Any local Flight Standards Inspector may select a pilot examiner . . . whenever he determines there is a need for one." By policy the designation of examiners is the responsibility of FAA managers. Managers normally permit designations relating to air carriers to lapse when a need no longer exists.

The two broad categories of examiners designated for certification of airmen in flight operations are designated pilot examiners (DPE) and air carrier designated examiners (ACDE).

A. *DPE.* Guidance relating to designated pilot examiners is contained in Order 8700.1, The General Aviation Operations Inspector's Handbook, and in Order 8710.3 (as amended), Pilot Examiner's Handbook.

B. *ACDE.* This handbook is concerned with air carrier designated examiners. Chapter 5 contains general guidance in designating ACDE's. Chapter 6 specifically addresses designating aircrew program designees (APD) under the aircrew designated examiner (ADE) program; Chapter 7 is under development and will address training center evaluators–air carrier (TCE–AC) authorized to examine air carrier personnel.

353. OVERVIEW OF THE TWO TYPES OF AIR CARRIER DESIGNATED EXAMINERS, APD's AND TCE–AC's.

A. *Aircrew Program Designees.* APD's are designated to conduct certification within specifically approved programs known as ADE programs. APD's are restricted to examining only those applicants employed by their operator and trained in their approved training program. APD candidates must be employed by the operator and qualified as check airmen for the operator before they may be designated as APD's. Principal operations inspectors (POI) are authorized to designate APD's to serve in any ADE program that the POI oversees. The specific functions of an APD are named in the Letter of Authority that supplements the Certificate of Designation and Certificate of Authority.

B. *Training Center Evaluators–Air Carrier.* TCE–AC's are persons employed by a training center with which an air carrier has contracted for training/evaluation services. The authority of a TCE–AC is controlled by the Letter of Authority that is issued concurrently with the Certificate of Designation and the Certificate of Authority. A TCE–AC may, with the approval of the operator's POI, be authorized to act as a check airman for that operator. A TCE–AC who has been approved as a check airman for an operator by its POI may be authorized to conduct certification evaluations of an operator's airmen. Typically such programs are associated with FAR Part 121 and FAR Part 135 operators whose training is conducted under contract by exemption-holding or certificated training centers. TCE–AC's are restricted to examining only those applicants trained in an operator's approved training program at a training center. As conditions of eligibility, a TCE–AC candidate must be employed by a training center or contractually bound to one, and must be approved as a check airman for the operator whose certificate applicants are to be examined. The POI approves each check airman candidate for each operator subject to the POI's oversight, at a training center as well as elsewhere. An inspector with responsibility for oversight of a training center is known as a training center program manager (TCPM). A TCPM may designate any approved check airman as a TCE–AC. TCE–AC's performing certification of an air carrier's personnel are designated by the TCPM and their use is subject to approval of the operator's POI.

354. AIR CARRIER-RELATED CERTIFICATION ACTIVITY CONDUCTED BY A DES-

IGNATED PILOT EXAMINER. ADE and TCE–AC programs (featuring APD's and TCE–AC's, respectively) may not be desirable in all cases where air carrier certification activities are involved. For example, for operators of small aircraft or small fleets, the more structured nature of ACDE programs may make them impractical or otherwise undesirable to the operator, to the FAA, or to both. As an alternative, a designated pilot examiner (DPE) may conduct air carrier related certification activities under the following conditions:

- When the DPE is concurrently approved by the operator's POI as a check airman for the carrier and maintains check airman authority in accordance with procedures in Order 8400.10, volume 3, chapter 3, relating to check airmen
- When aircraft comprising the operator's fleet do not require type ratings
- When FAA inspector resources are adequate at the training and checking locations to ensure competent oversight of current and foreseeable certification activities conducted by a DPE

NOTE: When a DPE is to be used for certification of an operator's airmen and the aircraft requires a type rating, a Memorandum of Understanding (MOU) is required, consistent with MOU's under the air carrier designated examiner programs. (See chapters 6 and 7 of this volume for sample MOU's). The MOU must specify (1) that the training center may have the benefit of a designated examiner(s), and (2) that the training center shall provide initial and recurrent training to at least one FAA inspector to ensure competent oversight of the DPE's activities. Conversely, if a qualified and current inspector is not continuously available to provide oversight of the DPE, a DPE may not be used.

355. GUIDANCE FOR SUPERVISING INSPECTORS AND MANAGERS WHEN DESIGNATING EXAMINERS.

A. *Supervising Inspectors.* The term supervising inspectors as it is used in connection with examiners comprises:

- Principal Operations Inspectors (POI)
- Aircrew Program Managers (APM)
- Training Center Program Managers (TCPM)
- Partial Program Managers (PPM)
- Training Center PPM's
- Geographic PPM's
- APM Assistant PPM's (See chapters 6 and 7 of this volume for definitions of terms.)

B. *Managers.* The term managers as it is used in connection with examiners comprises:

- Flight Standards district office (FSDO) managers
- Unit supervisors
- Certificate management office (CMO) managers
- Regional flight standards division (RFSD) managers

C. *Guidance.* Supervising inspectors and managers should consider designating examiners when the volume of certification activity makes such designations desirable to an operator and to the FAA. These conditions may occur when the volume of certification activity is relatively high, when an aircraft type is new to an operator's fleet, or when simulator training is available. Managers may consider designating examiners for flight engineer and aircraft dispatcher certification as well as for pilot certification.

- Programs for APD's and TCE–AC's. APD's and TCE–AC's may be designated as follows:

(1) *Aircrew Designated Examiner (ADE) Program.* Aircrew Program Designees (APD) are trained in an ADE program. An ADE program is associated with an operator which conducts its own program of airman qualification using its own flight simulators. It is the preferred program for conducting the certification of flight crewmembers for complex FAR Part 121 and FAR Part 135 operators. The ADE program was originally designed for operators with sophisticated training capabilities including flight simulators, with highly trained personnel, and with a large volume of certification activity. The program has since been used by a broader range of operators. POI's and managers should consider establishing an ADE program before the operator's airman certification workload for any aircraft type exceeds the FAA's ability to meet requirements using available inspector resources; they should also consider an ADE program as a means of making simulator training accessible to an operator which might not otherwise find simulator training practical. Simulator training is acknowledged as the safest and best training method. (See chapter 6 of this volume for further guidance).

(2) *Training Center Evaluator–Air Carrier (TCE–AC) Program.* The TCE–AC program corresponds to the ADE program, but is distinguished by the use of certificated or exemption-holding training centers and their personnel under a formal contract with one or more air carriers. Training centers emphasize the use of flight simulators and flight training devices. Training centers may conduct training and evaluation of an operator's airmen on behalf of the operator under specified conditions.

When a TCE–AC has been designated and approved to conduct certification of an FAR Part 121 or 135 operator's personnel, a copy of the MOU between the training center and the FAA district office responsible for oversight of the training center shall be provided to AFS-200, together with a copy of each TCE–AC Letter of Authority (from the TCPM) and each check airman Letter of Approval (from the POI).

357. DESIGNATED EXAMINER AUTHORITY AND RESPONSIBILITIES. A designated examiner is authorized to conduct only those airman certification activities approved by the FAA.

A. *Privileges and Limitations.* The following privileges and limitations apply to designated examiners conducting evaluations of personnel in air transportation. A designated examiner may:

- Conduct only those tests indicated on FAA Form 8430–9, "Certificate of Authority," and specifically named in the Letter of Authority
- Issue temporary certificates to applicants that the designated examiner has evaluated and found qualified for the certificate or rating sought
- Amend or alter a certificate only (1) when adding a rating to the certificate of an applicant whom that designated examiner has tested and found to be competent; or (2) when removing a restriction on a certificate which the examiner is authorized to issue. (For example, a designated flight engineer examiner (DFEE) may be authorized to remove the restriction imposed by exemption 4901 for a flight engineer applicant when the examiner has been properly trained to perform the removal)
- Be authorized to conduct certification tests within an FAR Part 121 or FAR Part 135 training program at any base or facility approved for the operator's use by the POI

A designated examiner may not:

- Conduct a test for a certificate or rating that the designated examiner does not hold
- Normally conduct an evaluation of any applicant whom the designated examiner has instructed in preparation for the certificate or rating sought by the applicant. Exceptions may be granted by the supervising inspector only on a case-by-case basis
- Normally conduct an evaluation of any applicant whose performance the designated examiner has found to be unsatisfactory on the previous evaluation (i.e., a different examiner is required on a "re-take"). Exceptions may be granted by the supervising inspector only on a case-by-case basis
- Conduct special medical evaluations, tests for waivers, or any test for competency under Title 49 U.S.C. § 44709 (formerly Section 609a of the Federal Aviation Act of 1958). Supervising inspectors shall instruct designated examiners to direct applicants for waivers, special medical evaluations, and competency tests under 14 U.S.C. § 44709 to an FSDO

B. *Professional Conduct.* Each designated examiner must represent the Administrator in a manner which credits the FAA. Qualities such as promptness, courtesy, and professionalism are essential. Each designated examiner must continuously exhibit a positive personal attitude toward safety and present a positive image of the FAA in respect to aviation safety.

C. *Designated Examiner Responsibilities.* Designated examiners are responsible for the following:

- Conducting all practical tests in air transportation programs in accordance with the applicable sections of this handbook. Inspectors should ensure that designated examiners are aware that all operators must have a document covering procedures and maneuvers which contains specific training and testing standards. This document should be based on the applicable practical test standards (PTS)
- Submitting complete and accurate certification packages (which include the Program Tracking and Reporting System (PTRS) data sheets or locally prepared data input forms) to the supervising FSDO within 5 working days of administering a test

D. *Multiple Certification Services by an Examiner.* An airman may be designated by the FAA to

perform multiple certification services as an examiner on behalf of the Administrator. In some cases, an airman (1) may be designated to hold more than one type of designation; or (2) may be approved to conduct certification activities under more than one training program, which, in turn, may be approved for use by more than one operator.

NOTE: A designated examiner may be issued only one FAA Form 8710-6, "Examiner Designation/Qualification Record"; one FAA Form 8000-5, "Certificate of Designation"; and one FAA Form 8430-9, "Certificate of Authority." When a designated examiner holds authority to perform multiple certification services, each authorization shall be listed on a single record or certificate. Replicas of those documents shall be maintained in multiple offices as appropriate.

(1) *Designations.* An airman may be designated as more than one type of FAA designated examiner. For example, an airman might be designated as a private pilot examiner (PPE) in gliders and, separately, as an APD for an air carrier and a TCE–AC for a training center.

(2) *Training Programs.* A TCE–AC may be approved for a maximum of two different training programs.

NOTE 1: A training program approved by one POI for use by an operator under his or her oversight may be approved by another POI for use by another operator. In such instances a TCE–AC is viewed as having been approved under one training program.

NOTE 2: A training center may have its own training program, approved for general use under FAR Part 61 by the TCPM. Such a program may be used by one (or more) air carrier(s) with the approval of the POI(s).

359. SUPERVISING INSPECTOR RESPONSIBILITIES. Supervising inspectors are responsible for ensuring that examiners are trained in certification duties and procedures, that surveillance is scheduled, and that examiners maintain certification standards. For the examiners designated in accordance with this handbook, these responsibilities include the following:

A. *Initial Training and Observation.* Supervising inspectors are responsible for ensuring that, before designation, each examiner candidate is properly trained to conduct certification and is observed while conducting an evaluation .

B. *Surveillance.* Supervising inspectors must ensure that each examiner is observed a minimum of once a year by an appropriately rated aviation safety inspector and that an observation has been accomplished before the examiner's designation is renewed. In alternate years the biennial observation required of every check airman may be counted as the annual observation required of the examiner. The responsibility for scheduling surveillance lies with the supervising inspector. Supervising inspectors are responsible for establishing procedures by which the designated examiner provides schedules of proposed activities as far in advance as is practical or required.

C. *Airman Certification Standards.* Supervising inspectors are responsible for ensuring that designated examiners maintain airman certification standards as prescribed by the FAR's, by practical test standards (PTS), and by applicable handbooks. Supervising inspectors must conduct an active program of meetings and surveillance to achieve this objective.

361. OFFICE MANAGER RESPONSIBILITIES. Office managers must establish effective administrative systems for supporting designated examiner programs. This support must include the following:

A. *Certification Paperwork.* Office managers are responsible for establishing administrative procedures for the expedient and efficient processing of certification paperwork within the office. Managers are not required to maintain hard copies of certification paperwork, job aids, or PTRS data sheets. The PTRS serves as a record of certification activity.

B. *Data Processing Support.* Office managers are responsible for establishing administrative procedures for entering the data generated by designated examiners into the PTRS system.

C. *Resources.* Office managers are responsible for the personnel, training, and budget resources necessary to accomplish the surveillance of designated examiners. Personnel, training, and budget forecasts must contain adequate provisions for the surveillance of designated examiners. Office managers should anticipate changes in personnel requirements due to either growth in operator programs or public demand.

363. REGIONAL FLIGHT STANDARDS DIVISION (RFSD) RESPONSIBILITIES. In general, the RFSD is responsible for ensuring that airman certification standards are upheld. RFSD's are not required to take any specific action in respect to approving individual airmen as examiners, but must be informed and must concur with the selections

made. This concurrence may be informal. Other responsibilities held by the RFSD are as follows:

A. *Coordination.* RFSD's are responsible for establishing procedures for FSDO's and CMO's for locating inspectors to conduct designated examiner surveillance when a qualified inspector is not locally available.

B. *Program Evaluation.* RFSD's are responsible for evaluating the management of the designated examiner program in each FSDO and CMO when warranted. This evaluation should be conducted at least every 3 years, and when practical, in conjunction with regularly scheduled office evaluations.

364.–374. RESERVED.

made. This concurrence may be informal. Other responsibilities held by the RFSD are as follows:

A. *Coordination.* RFSD's are responsible for establishing procedures for FSDO's and CMO's for locating inspectors to conduct designated examiner surveillance when a qualified inspector is not locally available.

B. *Program Evaluation.* RFSD's are responsible for evaluating the management of the designated examiner program in each FSDO and CMO when warranted. This evaluation should be conducted at least every 3 years, and when practical, in conjunction with regularly scheduled office evaluations.

364.–374. RESERVED.

CHAPTER 5. AIR CARRIER DESIGNATED EXAMINERS

SECTION 2. MANAGING PROGRAMS

375. SELECTION OF EXAMINERS. This section applies to the selection of examiners in the aircrew designator examiner (ACDE) and training center evaluator–air carriers (TCE–AC) programs described in section 1 of this chapter.

NOTE: Preferred sources for examiner candidates are (1) airmen who are actively engaged in the activity for which examinations are to be conducted and (2) retired or former inspectors. Prior experience as a designated examiner or aviation safety inspector may be considered to meet the examiner requirement for check airman experience.

A. *Application.* Examiner candidates must submit the following:

- A complete statement of professional qualifications on Federal Aviation Administration (FAA) Form 8710-6, "Examiner Designation and Qualification Record"(figure 5.5.2.1.), before designation. The supervising inspector shall review the candidate's qualifications to ensure that the candidate meets the requirements and standards for an examiner designation
- A copy of a completed and current FAA Form 8430-9, "Certificate of Authority," if the candidate currently holds an examiner designation(s) and examiner letters of authority issued to the candidate
- Copies of any current check airman letters of approval issued to the candidate

B. *Qualifications of APD's and TCE–AC's.* Candidates must have the following qualifications:

- A recommendation from the operator that includes a resume of training and professional experience
- A good record as a pilot and flight instructor and a good record of compliance with the FAR (isolated and unrelated violations or incidents are not disqualifying.)
- Approval as a check airman for the operator in its FAR Part 121 or 135 training program
- A reputation for integrity and dependability in the industry and the community
- An airline transport pilot (ATP) Certificate and applicable type rating for pilot examiners, or the appropriate airman certificate for flight engineer/aircraft dispatcher examiners; (examiners authorized to conduct evaluations in aircraft must possess at least a third class medical certificate. A medical certificate is not required for simulator evaluators. (Ref. Order 8710.3B))
- Aircrew program designee's (APD) must have successfully completed the operator's approved training program in which the candidate will be authorized to conduct evaluations for the issuance of certificates. TCE–AC's must have successfully completed either the operator's approved training program, or the training center's approved training program for the type aircraft and the appropriate training in the differences between the operator's approved training program and that of the training center
- Have satisfactorily completed a formal ground school conducted by the FAA that includes the subjects contained in paragraph 377 of this section

NOTE: See chapter 6 of this volume for more detail regarding APD qualifications; see chapter 7 for more detail regarding TCE–AC qualifications.

C. *Qualifications of Candidates Other Than Pilots.* Examiner candidates who are not pilots must have the following qualifications:

- Designated flight engineer examiner candidates must have successfully completed the operator's approved training program in which the candidate will be authorized to conduct evaluations for the issuance of certificates, or the training program conducted by the training center and the appropriate training in the differences between the operator's approved training program and that of the training center

- Designated flight engineer and aircraft dispatcher examiner candidates must have satisfactorily completed a formal ground school conducted by the FAA that includes the subjects contained in paragraph 377 of this section
- Hold the appropriate airman certificate and rating(s), if applicable
- Status as a flight engineer check airman or dispatcher supervisor, as appropriate, in the operator's training program
- A recommendation from the operator that includes a resume of training and professional experience
- A good record of compliance with the FAR (Isolated and unrelated violations or incidents are not disqualifying.)

377. EXAMINER CANDIDATE TRAINING AND OBSERVATION. The supervising inspector shall ensure that examiner candidates are trained and observed in their functions prior to designation.

A. *Candidate Training.* Examiner candidates must be trained in certification policies, procedures, and standards. The supervising inspector must ensure that the candidate is trained in the following specific areas:

- The knowledge, abilities, and skill requirements for the original issuance of the certificate and added ratings, as applicable
- The procedures, methods, and techniques associated with administering the required certification tests
- Examiner responsibilities, authority, and limitations under the FAR and applicable FAA orders
- The use of FAA forms and job aids associated with the particular examiner function
- Administrative procedures and relationships with supervisory inspectors

B. *Representing the FAA.* Inspectors shall stress to all examiner candidates that in performing the functions of an examiner they are representatives of the Administrator. Candidates must understand that matters such as company loyalties, economic conditions, union affiliations, and seniority are not relevant to the certification of airmen.

C. *FAA Observation of the Candidate.* After the examiner candidate has been trained, a qualified inspector shall observe the examiner candidate conducting a complete certification test consisting of oral, simulator, and aircraft portions, (or practical evaluation) as applicable. The following methods of observation may be used, in descending order of preference:

(1) *An Actual Certification Evaluation.* The preferred method is that the inspector shall observe an examiner conducting all portions of an actual certification test.

(2) *Simulated Certification Evaluation.* When circumstances make the observation of an actual certification test impractical, inspectors may observe the examiner candidate conducting a competency or proficiency check as if the check were being conducted for certification.

(3) *Other Methods.* Other methods, such as the inspector acting as the applicant, may be used when preferred methods are not practical.

D. *Recording Examiner Training.* Supervising inspectors who conduct training for an examiner candidate shall complete FAA Form 8000-36, "Program Tracking and Reporting Subsystem (PTRS) Data Sheet," using activity code 1595 for each examiner candidate trained. The inspector shall use Section IV and J799 to identify the type of training activities that are conducted.

379. OVERSIGHT AND SUPPORT OF DESIGNATED EXAMINERS. Supervising inspectors are responsible for the oversight and support of designated examiners. The following guidance applies:

A. *Meetings with Examiners.* Supervising inspectors shall ensure competent performance by each designated examiner in respect to handling of applicants, maintenance of desired test standards, and accurate completion and processing of certification paperwork. Designated examiners should be encouraged to contact their supervising inspectors to resolve questions or difficulties. Sufficient contact is essential, and shall include regular and special meetings and annual briefings, as follows:

(1) *Regular Safety Standardization Meetings.* At least annually, supervising inspectors shall conduct regularly scheduled meetings with designated examiners for the purpose of maintaining desirable standards and effective working relationships. These meetings shall be recorded in the PTRS system under activity code 1595.

(2) *Special Safety Standardization Meetings.* Supervising inspectors shall call special meetings whenever a significant change affects the process of FAA airman certification in respect to air transportation examiners.

(3) *Annual FAA Briefing of Examiner.* Each designated examiner shall attend an annual briefing conducted by a supervising inspector which specifically addresses the functions of a designated examiner. This briefing may be accomplished in conjunction with a safety standardization meeting, but must be accomplished as a condition of renewal.

B. *Examiner Supplies and Materials.* Supervising inspectors shall ensure that each designated examiner has access to the materials necessary for the examiner's tasks. The following materials shall be made available before designation of any candidate, and revisions to the materials, shall be made readily accessible to the designee thereafter:

- FAA Order 8400.10, "Air Transportation Operations Inspector's Handbook," volume 3, chapter 3, "Check Airman, Instructor, and Supervisor Programs"
- FAA Order 8400.10, "Air Transportation Operations Inspector's Handbook," volume 5, "Airman Certification and Designated Examiners"
- FAA Order 8700.1, "General Aviation Operations Inspector's Handbook," when a DPE or PPE is to be authorized to conduct evaluations of personnel in air transportation operations.
- FAA Order 8710.3B, "Pilot Examiner's Handbook," chapter 5, "Conduct Practical Test/ Certification Functions," chapter 10, "Conduct an Airline Transport Certification, including Additional Category/Class Ratings," chapter 12, "Conduct a Pilot Type Rating Certification," and chapter 14, "Accomplish Designation/Conduct Practical Tests as a Pilot Examiner-Simulator Only," chapter 5 contains samples of applications, completed certificates and other information.
- Appropriate job aids (may be copied from FAA Order 8400.10)
- FAA Form 8060-4, "Temporary Airman Certificate"
- FAA Form 8060-5, "Notice of Disapproval of Application"
- FAA Form 8000-36, "Program Tracking and Reporting Subsystem (PTRS) Data Sheet"

Additional sources of information that may prove valuable to examiners and inspectors are available through on-line information systems:

(1) *FAA Corporate Bulletin Board (BBS).* This system makes many useful databases and bulletin boards readily available to the inspectors and to the public by a toll-free dial-up on (800) 224-6287. The system is being upgraded weekly as new information becomes available. Among the services now available are the following:

- Air Transportation Division (AFS-200) BBS. This BBS contains many regulatory and operational source materials such as MMEL's, FSB and FOEB reports, the FAR, NPRM's, legal interpretations, and handbook bulletins
- Pilot Examiner BBS. This BBS provides information and guidance for designated pilot examiners
- Aviation Rulemaking Advisory Committee BBS. This BBS provides information on the progress of aviation rulemaking projects
- Aeromedical Forum BBS. This BBS addresses issues affecting airman medical certifications
- Contel DUATS (Dual User Access Terminal System). This is the weather briefing, NOTAM, flight planning, and flight plan filing service the FAA provides free to the public
- NTIS FEDWORLD. This BBS managed by the National Technical Information Service, comprises a broad range of government agencies, including the FAA

(2) *ASIX.* The Aviation Safety Information Exchange contains existing, new, draft and proposed information regarding MMEL's, regulations, AC's, operations specifications, FAA handbooks, ICAO annexes, accident prevention, air traffic and airports. It is accessible through CompuServe Information Service's Aviation Special Interest Group Forum (type GO AVSIG).

(3) *Flight Standards Service Home Page on the Web.* This home page is maintained by the FAA to provide ready access to current source materials relating to aviation safety. Among the home page links: accident prevention, airworthiness alerts, handbook bulletins, DER's, airworthiness directives (AD's), regulations, NPRM's, materials relating to the Commuter Rule (FAR Parts 119/121), Advisory Circular checklist, airman written tests and aviation safety information. The address of this home page is http://www.faa.gov/avr/afshome.htm.

381. EXAMINER RECORDS FILE. The designating flight standards district office (FSDO) or certificate management office (CMO) shall maintain an examiner records file for each designated examiner. This file shall contain the following: (see figure 5.5.2.2., Designated Examiner Checklist)

- FAA Form 8710-6, "Examiner Designation and Qualification Record" for each original designation and renewal
- FAA Form 8430-9, "Certificate of Authority" for each original designation of authority and renewal
- FAA Form 8000-5, "Certificate of Designation" for each original designation and renewal
- Violations history, if any, available from the Flight Standards Information System (FSIS)
- Any pertinent correspondence

NOTE: This information may be obtained through the National FSAS/ISIS data base. It will provide the supervising inspector with a complete record of the candidate's qualifications, accident, incident and enforcement history, and PTRS activity as selected during the query process.

383. PROCESSING INITIAL EXAMINER DESIGNATIONS.

PTRS Code, FAR Part 183:
1551 - Pilot Examiner - Large/Turbine (ATPE/DPE)
1552 - Pilot Examiner - Other (DPE)
1553 - Pilot Proficiency Examiner - (PPE)
1555 - Aircraft Dispatcher
1559 - Designated Examiner at Training Center - (Training center evaluator–air carrier/TCE–AC)
1561 - Flight Engineer Examiner
1562 - Aircrew Program Designee (APD)

Supervising inspectors shall ensure that all the requirements for an examiner designation have been met and shall prepare the necessary paperwork as follows:

A. *FAA Form 8710-6, "Examiner Designation and Qualification Record."* After the examiner candidate has completed and signed the front of FAA Form 8710-6, the supervising inspector shall complete the form as follows:

(1) On the back of the form under the block labeled "Additional Qualifications," the inspector shall enter and the certificates, ratings, and aircraft type as applicable for which the designated examiner is authorized to conduct certification tests.

(2) In the action block at the bottom on the reverse side of the form, the supervising inspector shall cross out the word "region" and enter the word "district" or "certificate management," as applicable.

(3) The supervising inspector shall check both sides of the form for accuracy and completeness.

(4) The supervising inspector shall enter the type of designation, "APD" or "TCE–AC," followed by the certificate and airplane type in the space labeled, "Type of Designation," below the "District Office Action" block. (i.e., ATP AMEL B-727)

(5) The supervising inspector shall enter the designated examiner's airman certificate number and designator identification in the space labeled, "Certificate of Authority Issued" in the space titled, "No." If the examiner candidate is to be an APD for an air carrier, use the designator for that air carrier. If the candidate is to be a TCE–AC, use the designator for the training center.

(6) The supervising inspector shall enter the expiration date, which is normally the last day of the month in the following year corresponding to the month of designation. Special circumstances may call for an earlier expiration date.

(7) The supervising inspector shall enter the applicable flight standards office in the "Do to Serve Under" block.

(8) The supervising inspector shall sign the "Inspector's Signature" block.

B. *Examiner Designation Numbers.* For APD's and TCE–AC's the airman's certificate number, coupled with the applicable 4-character air carrier or training center designator, may be used in all instances when an examiner designation number may be called for. If the examiner candidate is to be an APD for an air carrier, use the designator for that air carrier. If the candidate is to be a TCE–AC, use the designator for the training center. (i.e., an APD for Delta Airlines would be 123456789DALA)

C. *Other Forms.* Supervising inspectors shall prepare the FAA Form 8000-5, "Certificate of Designation" and FAA Form 8430-9, "Certificate of Authority" (see figures 5.5.2.3. and 5.5.2.4., respectively). The originals of these forms shall be issued to the designated examiner. Copies shall be retained in the appropriate examiner records file.

D. *Approval Authority.* The office manager, POI, TCPM, or an inspector authorized to act for these individuals, shall indicate approval of each examiner candidate by completing the first line of the block

labeled, "District Office Action" on the FAA Form 8710-6, and by signing in the appropriate spaces on FAA Form 8710-6, 8430-9, and 8000-5.

E. *Letter of Authority.* The inspector approving the candidate's designation as an examiner shall prepare the Letter of Authority (LOA). The LOA serves two purposes:

- It specifies the exact authority conveyed to the examiner by the designation, which may not be otherwise possible to include on the FAA Form 8430-9 "Certificate of Authority," due to space limitations
- It provides a record of approval and a basis for subsequent amendment and dissemination of information to affected FAA offices which may be transmitted via electronic mail. Refer to figure 5.5.2.5. for a sample LOA.

385. DESIGNATED EXAMINERS ABROAD. An examiner may be designated to serve at locations outside of the United States, provided the designated examiner will examine only US. citizens trained under a training center's approved program, or individuals employed as flight crewmembers of a FAR Part 121 or 135 air carrier and trained under that operator's approved training program. The designated examiner's activities must be adequately supervised by an FAA inspector. A POI may depend upon inspectors provided by an international field office (IFO) or by another domestic field office for this supervision. A person who is not a US. citizen may be designated as an examiner abroad only when the need cannot be filled by a US. citizen and only when approval is obtained from the appropriate regional flight standards division (RFSD) manager.

387. SHARED OVERSIGHT OF EXAMINERS. A check airman may be designated as more than one type of designated examiner or as a designated examiner for more than one operator. In such a case, more than one inspector may supervise a designated examiner. The following guidance applies:

A. *Supervisory Responsibilities.* POI's and managers should delegate responsibility for supervising all of a designated examiner's activities to a single inspector when practical. It may be necessary, however, for the supervisory responsibility to be divided in accordance with the activities the designated examiner is authorized to perform. For example, a check airman might be approved as an APD by authority of a FSDO in Florida; under that authority the examiner might conduct B-747 type ratings for an operator whose certificate is held in that state. The same person might also be a designated pilot examiner for general aviation, by authority of a FSDO located in Colorado. In such a case, the examiner would be supervised by an APM in Florida for B-747 activities and by an appropriately rated inspector in Colorado for general aviation activities.

B. *Responsibility for Maintaining Examiner Records Files.* An inspector must be assigned the responsibility for maintaining a particular designated examiner's records file. When more than one FSDO is involved, the file should normally be maintained by the office for which the designated examiner performs air transportation functions. When the examiner conducts certifications for more than one FAR Part 121 or FAR Part 135 operator, the file should be maintained in the office of original designation. Other arrangements are permissible and may be negotiated to the satisfaction of the applicable FSDO's and CMO's.

C. *Procedures for Granting Additional Examination Authority.* The training and observations required for an examiner's second designation must be completed before an inspector may amend the examiner's FAA Form 8710-6, "Examiner Designation and Qualification Record," FAA Form 8000-5, "Certificate of Designation," FAA Form 8430-9, "Certificate of Authority," and Letter of Authority.

(1) When the authority is requested for an examiner to be designated for a second operator, the examiner candidate must complete qualification as a check airman for the second operator as a precondition of designation.

(2) The inspector tasked with performing any required observations for the second designation is responsible for notifying the inspector who maintains the designated examiner's records file once the observations have been completed and the check airman designation has been made for the second operator.

D. *Expiration Date.* All designations expire on the expiration date shown on the FAA Form 8710–6, "Examiner Designation and Qualification Record," FAA Form 8430-9, "Certificate of Authority," and Letter of Authority, which is normally the last day of the month in the following year corresponding to the month of designation. FAR Part 183 calls for a 1–year term to expiration. Special circumstances may call for an earlier expiration date, but not a longer one.

(1) When an examiner performs multiple certification services under authority granted by a single FSDO, the supervising inspector should normally change the expiration date to the last day of the month in the following year corresponding to the month of the most recent designation.

(2) When an examiner performs multiple certification services under authority granted by a more than one FAA office (as in paragraph 387a), the expiration date is not normally changed.

E. *Records.* When the oversight of a designated examiner is shared by more than one FAA office, the FSDO manager or the CMO manager with responsibility for maintaining the designated examiner's records file shall coordinate with the other office(s), as appropriate, before approving the designation. When the designation has been completed, a copy of the Letter of Authority shall be sent to those other office(s).

389. AMENDMENT OF DESIGNATED EXAMINER DESIGNATIONS. The manager responsible for maintaining a designated examiner's records file may amend an examiner's FAA Form 8000-5, "Certificate of Designation," and FAA Form 8710-6, "Examiner Designation and Qualification Record," FAA Form 8430-9, "Certificate of Authority," and LOA at any appropriate time. An amendment is appropriate when any of the following elements of a designated examiner's certification authority is changed: designation, certificate, aircraft type, operator or training center. When an FAA Form 8000-5 is amended, the inspector must cancel any previously issued form by marking the words "CANCELED" across the face of the certificate, and issue a new one. When the FAA Form 8000-5 is amended to include more than one designation, the FAA Form 8710-6 must also be amended. The supervising inspector shall enter an adequate description of each designation in the "Additional Qualifications Limitations" block. The FAA Form 8430-9 shall be changed as well to reflect the additional authorizations. When more than one FSDO or CMO is involved, the office supervising each activity must be listed on this certificate. The supervising inspector shall show the additional authorities and limitations on the LOA and forward copies to the affected offices. The administrative steps for the issuance of an amended certificate of designation are the same as those outlined for initial designation (see paragraph 379).

391. RENEWAL OF DESIGNATIONS.

PTRS Code, FAR Part 183:
1551 - Pilot Examiner - Large/Turbine (ATPE/DPE)
1552 - Pilot Examiner - Other (DPE)
1553 - Pilot Proficiency Examiner - (PPE)
1555 - Aircraft Dispatcher
1560 - Designated Examiner at Training Center - (Training center evaluator–air carrier/TCE–AC)
1561 - Flight Engineer Examiner
1562 - Aircrew Program Designee (APD)

An examiner designation expires no later than the last day of the month in the following year corresponding to the month of original issue or most recent renewal. The renewal process will normally be accomplished during the two months preceding or in the month that the examiner would expire.

> Example: An examiner designated on January 15, 1994, would expire on January 31, 1995. The renewal process would normally be conducted in the period from November through January, completing the process no later than the end of January.

The examiner SHALL NOT conduct any evaluations after the due date if he/she has not been renewed and issued a new FAA Form 8430-9. If the renewal process is not completed within 30 days following the expiration date, the examiner may be reinstated using the same process used for initial designation. At expiration a designation does not continue in force. The inspector should ensure that the need for a designated examiner continues to exist before considering renewal. If conditions necessitating an examiner continue to exist, the examiner's designation is normally renewed in the month corresponding to the month of original issue or most recent renewal. Inspectors should use the following procedures:

A. *Required Forms.* The inspector assigned to the designated examiner shall renew the designation after satisfactory completion of the required annual observation and required annual briefing. The following forms shall be updated:

- FAA Form 8710-6, "Examiner Designation and Qualification Record"
- FAA Form 8430-9, "Certificate of Authority"
- Letter of Authority

Initiate a new FAA Form 8000-36, "Program Tracking and Reporting Subsystem (PTRS) Data Sheet" to record the renewal action after all actions have been completed.

B. *Annual FAA Observation of Check.*

PTRS Code, FAR Part 183:
1664 - Pilot Examiner - Large/Turbine (ATPE/DPE)
1665 - Pilot Examiner - Other (DPE)
1666 - Pilot Proficiency Examiner - (PPE)
1668 - Flight Engineer Examiner
1669 - Aircraft Dispatcher
1672 - Aircrew Program Designee (APD)

1673 - Designated Examiner at Training Center - (Training center evaluator–air carrier/ TCE–AC)

Within three calendar months before expiration, the examiner shall be observed conducting a complete check. In the case of Pilot Examiners (DPE, PPE, APD, TCE–AC), this evaluation shall include observation of oral, simulator and aircraft evaluation activities, as applicable. The observation shall be conducted by the supervising inspector, or by another appropriately rated inspector appointed by the supervising inspector.

(1) *Type of Check.* For renewal purposes, inspectors may observe designated examiners conducting the following activities, in descending order of preference:

- A certification check
- A proficiency check
- A competency check

NOTE 1: In rare cases, the inspector may observe the examiner's own proficiency or competency check. To complement this observation, the inspector may perform maneuvers or procedures for the designated examiner to evaluate.

NOTE 2: In the event that the necessary observations cannot be accomplished within the required time frame, and evaluation should be made as to the continued need for an evaluator.

(2) *Multiple Certification Services (DPE/PPE/ TCE–AC).* When the designated examiner has authorizations for certification services that are closely related, only one observation by an inspector is required.

Example: A TCE–AC with examination authority for more than one operator under the same training program needs to be observed annually performing the applicable activities for only one of the operators.

Similarly, participation in a line observation program and demonstration of instructional proficiency need be accomplished on only one of the operators. When an individual is authorized to evaluate personnel of more than one operator, the observations should be rotated among the operators' programs. On the other hand, an APD for the B-747 who is concurrently a designated pilot examiner (DPE) in gliders needs at least two annual FAA observations, one in each activity.

(3) *Scheduling.* The designated examiner is responsible for scheduling each required annual FAA observation and each annual briefing far enough in advance to assure that they may be accomplished before expiration. A designated examiner who is beyond expiration may not conduct any certification activity on behalf of the Administrator until all annual requirements are met and the renewal has been completed.

(4) *Annual Briefing.* Each designated examiner must attend an annual briefing conducted by an inspector which specifically addresses the functions of a designated examiner. This briefing may be accomplished in conjunction with a safety or standardization meeting.

393. PROCESSING DESIGNATED EXAMINER CERTIFICATION PAPERWORK. FAR § 183.17 requires that designated examiners make reports as prescribed by the Administrator. Designated examiners shall forward airman certification paperwork to the designated FSDO or CMO for review, processing, and transmittal to the Airman Certification Branch, AFS-760. when a multiple designation with more than one supervising office is involved, certification paperwork shall be sent to the supervising office for each designation. This paperwork shall be processed only by the appropriate offices specified on FAA Form 8000-5, ''Certificate of Designation''; it may not be accepted for processing by other offices.

A. *Designated Examiner Responsibilities.* Designated examiners must complete the airman certification paperwork in accordance with the requirements of this volume in the handbook. The paperwork must be accurate, complete, and timely. Designated examiners must complete the PTRS data sheets for each evaluation function conducted. Satisfactory fulfillment of this responsibility is a requirement for renewed designation as an examiner.

B. *Supervising Inspector Responsibilities.* Supervising inspectors are responsible for training designated examiners on correct documentation. Supervising inspectors should provide the designated examiners with ample PTRS data sheets. As much information as possible should be overprinted on these forms as a convenience to the examiner and as a precaution against errors. Inspectors may overprint forms or job aids by any convenient method, such as by pen or pencil, or by copy machine.

395. REVIEW OF DESIGNATED EXAMINER DECISIONS. If an airman is dissatisfied with a designated examiner's decision, the airman may appeal to the supervising inspector for a retest. The airman must submit the appeal in writing and indicate the

reasons for protesting the designated examiner's decision. The responsible inspector shall review the matter and decide if retesting is appropriate. If the inspector grants a retest, a new application must be completed by the airman, and the entire test must be accomplished again with an FAA inspector.

397. TERMINATION AND CANCELLATION OF DESIGNATED EXAMINER DESIGNATION. An examiner designation normally terminates at the expiration date, but may be terminated early or canceled for cause.

A. *Normal and Early Termination.* The termination of an examiner designation may be based on any of the following administrative factors:

- A change in needs for examiner services
- A change in the designated examiner program policy
- A change in the designated examiner's employment, base of operations, or professional activities, such as loss of check airman status
- Voluntary surrender of the designation, by the designated examiner's written request for termination
- A request for termination of examiner authority made by the designated examiner's employer

B. *Cancellation for Cause.* An examiner designation may be canceled for cause by the FAA under certain circumstances. The cancellation of an examiner designation may be based on any of the following causes:

- Evidence of malpractice, fraudulent use of the designation, or any actions by the designated examiner which discredit the FAA
- Unsatisfactory performance in any aspect of the designated examiner's functions, including failure to complete certification paperwork accurately or unwillingness or inability to carry out the supervising inspector's instructions
- Evidence indicating that requirements for the original designation were not met at the time of designation
- Failure of the examiner to meet annual requirements for renewal in a conscientious and timely manner

399. CANCELLATION FOR CAUSE PROCEDURES. The following steps shall be followed when implementing cancellation for cause:

A. *Certified Mail - Return Receipt Requested.* POI's, TCPM's and FSDO/CMO Managers shall notify a designated examiner of the cancellation of the examiner's designation for cause by "Certified Mail - Return Receipt Requested"(see figures 5.5.2.6. and 5.5.2.7.). A letter shall also be sent by conventional mail to each operator or training center that is affected by the cancellation. The letter shall be prepared by the supervising inspector and shall contain the following:

- A notification that the cancellation is effective immediately
- A statement that prohibits the designated examiner from conducting any further examinations until the matter is resolved
- A clear statement of the reasons for the cancellation action
- The specific reasons for the proposed action, together with relevant FAR or handbook guidance
- In the case of unacceptable conduct by a designated examiner, specific examples of this conduct
- A statement that the designated examiner has the option to respond in writing or to appear in person within 10 days of receipt of the letter
- A statement that if the designated examiner chooses to appear in person, the examiner may be accompanied by counsel
- A statement that the designated examiner has a right to appeal to the RFSD manager in writing or in person
- A statement that a record will be made of any meeting concerning appeal
- A statement that directs the designated examiner to return to the FSDO the FAA Form 8430-9, "Certificate of Authority," and FAA Form 8000-5, "Certificate of Designation," as well as all unused FAA materials and supplies

B. *Fact-Finding Meeting.* The manager having designation authority shall conduct a fact-finding meeting when requested by the designated examiner. A record of this meeting must be made by the inspector, in the form of notes taken by a secretary, a summary made by an inspector, or a transcript prepared by a court reporter. The designated examiner shall be provided with a copy of the record and shall be offered an opportunity to submit comments. The manager

shall attach to the record any comments submitted by the designated examiner.

C. *Decision of the Inspector - Notification Procedures.* The inspector having approval authority for a designated examiner also has cancellation authority. Before reaching a decision, the inspector, usually the POI or FSDO manager, shall consider the facts provided by the designated examiner and the advice provided by the certificate manager and the RFSD. Once a decision is reached, the inspector shall notify the designated examiner by "Certified Mail - Return Receipt Requested." The decision shall be (1) to allow the designated examiner to resume examination activities at once; (2) to resume examination activities after having successfully completed specified training and reevaluation; or (3) to cancel the examiner's designation.

D. *Appeal to the Regional Flight Standards Division Manager.* An airman whose examiner designation has been canceled may appeal that decision to the regional flight standards division manager. In making this appeal, the airman may provide a written statement or may request to appear in person. The following procedures apply:

(1) *Appearance in Person.* Should the airman request to appear in person, the regional division manager shall invite regional counsel to attend. A record of the meeting shall be made. The airman shall be provided with a copy of the record and shall be offered an opportunity to submit comments. These comments shall be attached to the record.

(2) *Decision of RFSD - Notification Procedures.* The airman shall be notified of the regional division manager's decision and the reasons for it by "Certified Mail - Return Receipt Requested," with an information copy sent to the CHDO. Should the division manager concur with the inspector in favor of cancellation of the airman's examiner designation, the letter shall include advice to the airman about legal recourse. Recourse is available by petition for review to the United States Court of Appeals within 60 days of the postmark of the division manager's letter.

D. *Recording the Cancellation for Cause.* When an examiner designation is canceled for cause, the POI or office manager shall complete the designated examiner's current FAA Form 8710-6, "Examiner Designation and Qualification Record," as follows:

(1) The word "CANCELED" shall be stamped or typed in the block titled, "Inspector's Recommendation Action," in the section labeled, "Justification for Approval/Reasons for Disapproval." In the same space, the inspector or office manager shall enter an explanation of the reasons for the cancellation.

(2) The inspector shall sign and date the form under the explanation of the reasons for cancellation.

(3) This form shall be retained in the designated examiner's records file in the CHDO for at least 2 years.

401. OTHER ACTIONS. When an inspector or office manager confirms a report of unacceptable conduct by a designated examiner, such as irresponsibility or incompetence, or personally observes unacceptable conduct, appropriate action must be taken, as follows:

A. *Counseling or Training.*

PTRS 1595 FAR Parts 61, 63, 65, 121, 135, 142

Appropriate action may take the form of counseling or training. In such cases, the inspector must record the reason for the action and some description of the action itself, and shall enter that information in the PTRS system and in the designated examiner's records file.

B. *Reexamination for Competence.*

PTRS 1534 - Reexamination (formerly 609 reexamination)

In cases when professional incompetence is observed or when safety is jeopardized, the inspector may require a reexamination of the examiner's competence in accordance with Title 49 U.S.C., § 44709 (formerly Section 609a of the Federal Aviation Act of 1958).

C. *Criminal Prosecution.* In extreme cases such as fraud, the facts in the case must be provided to the Department of Justice for possible criminal prosecution.

403. COORDINATION WITH RFSD. Before taking any action, POI's, TCPM's and FSDO managers shall ensure the matter is thoroughly documented and shall coordinate with the applicable regional flight standards division office and the regional counsel.

404.–410. RESERVED.

FIGURE 5.5.2.1.
FAA FORM 8710-6, "EXAMINER DESIGNATION AND QUALIFICATION RECORD" (FRONT)

Form Approved
OMB NR.2120-0033

U.S. Department of Transportation
Federal Aviation Administration

EXAMINER DESIGNATION AND QUALIFICATION RECORD

TYPE OF DESIGNATION
- PRIVATE PILOT
- COMMERCIAL PILOT EXAMINER
- AIRLINE TRANSPORT PILOT EXAMINER
- PROFICIENCY PILOT EXAMINER
- FLIGHT ENGINEER EXAMINER
- FLIGHT INSTRUCTOR EXAMINER
- OTHER

Attach supplemental sheets if more space is required for any item

1. NAME (Last, first, middle) — Telephone No.

2. ADDRESS (Number, street, city, state, and ZIP code)

3. DATE OF BIRTH (Month, day, and year)

4. U.S. CITIZEN — YES / NO

5. DO YOU NOW HOLD, OR HAVE YOU EVER HELD, AN EXAMINER DESIGNATION — YES / NO — TYPE AND NUMBER

6. HAS ANY CERTIFICATE OR RATING ISSUED YOU EVER BEEN SUSPENDED OR REVOKED OR HAVE YOU PAID A CIVIL PENALTY AS A RESULT OF A VIOLATION OF THE FEDERAL AVIATION REGULATIONS. (Complete for original designations only) — YES / NO

7. CERTIFICATES HELD

TYPE	CERTIFICATE NO.	RATINGS	DATE ISSUED

8. FLIGHT EXPERIENCE (in hours)

	AIRPLANE		ROTORCRAFT		GLIDERS		INSTRUMENT FLIGHT (Actual or sim)	NIGHT FLIGHT
	TOTAL	LAST 12 MOS.	TOTAL	LAST 12 MOS.	TOTAL	LAST 12 MOS.		
PILOT-IN-COMMAND								
FLIGHT INSTRUCTION GIVEN								
COPILOT								
FLIGHT NAVIGATOR								
FLIGHT ENGINEER								

9. EMPLOYMENT (Indicate professional experience pertinent to the designation)

EMPLOYER'S NAME	NATURE OF WORK	DATES	TITLE OF POSITION

10. SPECIAL TRAINING PERTINENT TO THE DESIGNATION

CERTIFICATION: I certify that I am familiar with the requirements for this designation, its privileges and limitations, and that the information stated herein is true. It is understood that this designation may be terminated upon notice by the FAA for the reasons specified in section 183.15(c) of the Federal Aviation Regulations.

DATE — SIGNATURE

FAA FORM 8710-6 (10-63)

FIGURE 5.5.2.1.
FAA FORM 8710-6, "EXAMINER DESIGNATION AND QUALIFICATION RECORD" (FRONT)

Form Approved
OMB NR.2120-0033

U.S. Department of Transportation
Federal Aviation Administration

EXAMINER DESIGNATION AND QUALIFICATION RECORD

TYPE OF DESIGNATION
- PRIVATE PILOT
- COMMERCIAL PILOT EXAMINER
- AIRLINE TRANSPORT PILOT EXAMINER
- PROFICIENCY PILOT EXAMINER
- FLIGHT ENGINEER EXAMINER
- FLIGHT INSTRUCTOR EXAMINER
- OTHER

Attach supplemental sheets if more space is required for any item

1. NAME (Last, first, middle) — Telephone No.

2. ADDRESS (Number, street, city, state, and ZIP code)

3. DATE OF BIRTH (Month, day, and year)

4. U.S. CITIZEN — YES / NO

5. DO YOU NOW HOLD, OR HAVE YOU EVER HELD, AN EXAMINER DESIGNATION — YES / NO — TYPE AND NUMBER

6. HAS ANY CERTIFICATE OR RATING ISSUED YOU EVER BEEN SUSPENDED OR REVOKED OR HAVE YOU PAID A CIVIL PENALTY AS A RESULT OF A VIOLATION OF THE FEDERAL AVIATION REGULATIONS. (Complete for original designations only) — YES / NO

7. CERTIFICATES HELD

TYPE	CERTIFICATE NO.	RATINGS	DATE ISSUED

8. FLIGHT EXPERIENCE (in hours)

	AIRPLANE		ROTORCRAFT		GLIDERS		INSTRUMENT FLIGHT (Actual or sim)	NIGHT FLIGHT
	TOTAL	LAST 12 MOS.	TOTAL	LAST 12 MOS.	TOTAL	LAST 12 MOS.		
PILOT-IN-COMMAND								
FLIGHT INSTRUCTION GIVEN								
COPILOT								
FLIGHT NAVIGATOR								
FLIGHT ENGINEER								

9. EMPLOYMENT (Indicate professional experience pertinent to the designation)

EMPLOYER'S NAME	NATURE OF WORK	DATES	TITLE OF POSITION

10. SPECIAL TRAINING PERTINENT TO THE DESIGNATION

CERTIFICATION: I certify that I am familiar with the requirements for this designation, its privileges and limitations, and that the information stated herein is true. It is understood that this designation may be terminated upon notice by the FAA for the reasons specified in section 183.15(c) of the Federal Aviation Regulations.

DATE — SIGNATURE

FAA FORM 8710-6 (10-63)

FIGURE 5.5.2.2.
TRAINING CENTER EVALUATION DESIGNATION CHECKLIST

Name of Training Center: Far North Training Center
Name of Designee: John Q. Smith

Reference:
FAA Order 8400.10 Air Transportation Operations Inspector's Handbook
FAA Order 8700.1 General Aviation Operations Inspector's Handbook
FAA Order 8710.3B Pilot Examiner's Handbook

Original Designation

YES	NO		
☐	☐	Nominee is employed/assigned to a training center operating under FAR 142 and/or 61, 121, 135 exemptions	
☐	☐	Nominee possesses an ATPC with the appropriate class ratings	
☐	☐	Nominee is type rated on the aircraft for which SDE authority is requested	
☐	☐	Nominee has satisfactorily completed a proficiency check in accordance with the provisions of the training center's exemption	
☐	☐	Nominee has at least one year of experience as an instructor check airman or designated examiner under FAR Part 61 or in a FAR Part 121 or 135 air carrier training program as appropriate unless waived by the administrator (experience as an FAA operations inspector is considered to meet this requirement)	
☐	☐	Nominee has had no accidents incidents or violations related to instructor check airman or examiner duties within designee authority is requested	
☐	☐	FAA Form 8710-6 has been completed	Date:
☐	☐	Nominee has completed the SDE standardization course conducted by the TCPM or the appropriate PPM	Date:
☐	☐	Nominee has observed an FAA inspector conduct an oral and a practical test of a TCE–AC candidate	Oral Date: Sim Date:
☐	☐	Nominee has administered both an oral and a practical test of a TCE–AC candidate under the surveillance of an FAA inspector	Oral Date: Sim Date:
☐	☐	PTRS forms have been completed reflecting the oral and practical tests observed and conducted by the nominee	
☐	☐	TCPM has completed reverse side of FAA Form 8710-6	Date:
☐	☐	TCPM has completed FAA Form 8430-9	Date:
☐	☐	TCPM has completed FAA Certificate 8000-5	Date:
☐	☐	TCPM has completed SDE's Letter of Authority and limitations	Date:
☐	☐	TCPM has notified AFS-200 and regional headquarters of SDE designation	Date:
☐	☐	TCE–AC approval notification to AFS-840	Date:
☐	☐	TCE–AC approval notification to AFS-200 (for air transportation)	Date:
☐	☐	TCPM has established a file for the SDE containing the following: ☐ Examiner Letter of Authorization ☐ FAA Form 8430-9 ☐ FAA Certificate 8000-5 ☐ FAA Form 8710-6 ☐ FAA Form(s) 8000-36 PTRS sheets ☐ PTRS record of activity ☐ Part 121/135 Check airman letters of approval ☐ Other correspondence	

FIGURE 5.5.2.3.
FAA FORM 8000-5, "CERTIFICATE OF DESIGNATION"

U.S. Department of Transportation
Federal Aviation Administration

Certificate of Designation

Reposing special trust and confidence in the integrity, diligence, and discretion of

who has been found to have the necessary knowledge, skill, experience, interest, and impartial judgment to merit special public responsibility, I hereby designate as

with authorization to act in accordance with the regulations and procedures prescribed by the Federal Aviation Administration relating to this designation.

Issued at *By Direction of the Administrator*

Dated _____

Certificate No. _____

FIGURE 5.5.2.4.
FAA FORM 8430-9, "CERTIFICATE OF AUTHORITY"

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
CERTIFICATE OF AUTHORITY

DESIGNATION NO.
SW-17-1234

NAME
Jim Little

DESIGNATION EXPIRES
9-94

Is authorized to act in the capacity of a
PE - Airplane

AT FIXED BASE OF OPERATION
Little Rock, Arkansas, District

DESIGNEE'S SIGNATURE

for the Administrator

09-23-93
(DATE)

Don Brown
(SIGNATURE)

FAA FORM 8430-9 (1-70)

The bearer has received all pertinent instructions and is authorized to act in the capacity set forth on this Certificate of Authority while under the supervision of the following district office or offices:

Office	Date	Inspector's signature
LIT FSDO	9-23-93	Don Brown
BTR FSDO	10-15-93	A. L. Jones

FIGURE 5.5.2.5.
SAMPLE LETTER OF AUTHORITY

(Office Letterhead)

February 4, 1993

Mr. John Q. Smith
2600 Overlook
Othertown, State 12333-8765

Subject: Letter of Authority - Training center evaluator–air carrier (TCE–AC)

Dear Mr. Smith:

This letter authorizes you to perform the following activities as a Training center evaluator–air carrier on the indicated aircraft at the Far North Training Center as a representative of the Administrator:

Under FAR Part 61:

B-727 Recurrent pilot proficiency/competency evaluations required by the US Code of Federal Regulations, FAR Part 61, for those individuals and organizations whose employees are not operating under FAR Part 121 (or FAR Part 135).

B-727 Oral and Simulator (and aircraft, if applicable) evaluations of individual applicants leading to issuance of an Airline Transport Pilot Certificate and/or an additional type rating.

Under FAR Parts 121 (or FAR Part 135):

B-727 Recurrent pilot proficiency evaluations required by the US Code of Federal Regulations for those individuals and organizations whose employees are operating under FAR Part 121 (or FAR Part 135), and for which you have been approved by the Principal Operations Inspector of that operator as a check airman.

B-727 Oral and Simulator (and aircraft, if applicable) evaluations of applicants employed by a FAR Part 121 (or FAR Part 135) air carrier leading to issuance of an Airline Transport Pilot Certificate and/or an additional type rating, subject to your maintaining check airman status for that company.

Enclosed is FAA Form 8000-5, ''Certificate of Designation,'' and an FAA Form 8430-9, ''Certificate of Authority.'' Copies of these documents, together with this letter, have been provided to the Far North Training Center for inclusion in your instructor/examiner records file. The Certificate of Authority must be in your possession when performing any evaluation activity for the training center or for an air carrier contracting with the training center.

Your evaluation authority under FAR Part 61 is limited to graduates of Far North's approved training programs, and is subject to the conditions of any exemptions from the Federal Aviation Regulations (FAR) which authorize the use of those programs. Your evaluation authority under FAR Part 121 (or FAR Part 135) is limited to graduates of approved training programs conducted on behalf of air carriers by Far North Training Center, and is subject to the conditions of any exemptions from the Federal Aviation Regulations (FAR) which authorize the use of those programs.

Your designation as a Training center evaluator–air carrier is also subject to the terms of the Memorandum of Understanding between your company and the Federal Aviation Administration, XYZ Flight Standards District Office.

FIGURE 5.5.2.5.—Continued
SAMPLE LETTER OF AUTHORITY

You are not permitted to perform proficiency evaluations or otherwise to perform Check Airman functions in respect to employees of any FAR Part 121 (or FAR Part 135) operator unless the Principal Operations Inspector (POI) for that operator has approved you as a Check Airman for that operator. A copy of the applicable check airman Letter of Approval must be included in your instructor/examiner records file at Far North Training Center.

Your designation as a TCE–AC is subject to the continuing need demonstrated by Far North Training Center and expires on June 30, 1995, by regulation. It may be renewed, allowed to expire, or terminated early at the discretion of the Administrator.

Sincerely,

Adam C. Jones
Training Center Program Manager
Far North Training Center

FIGURE 5.5.2.6.
SAMPLE LETTER OF NOTIFICATION OF PROPOSED REVOCATION

(Office Letterhead)

November 28, 1991

"CERTIFIED MAIL RETURN RECEIPT REQUESTED"

In Reply
Refer to: Jones

Mr. John J. Examiner
1011 S. Cottage Grove Ave.
Urbana, Illinois 33022

Dear Sir,

This office has evidence that indicates you issued an L-1011 type rating to Mr. John Smith on November 27, 1991, without conducting the required flight examination.

This is to inform you that this matter is under investigation by the Federal Aviation Administration, and this office is considering canceling your airman examination designation. We wish to offer you an opportunity to discuss the incident personally and/or submit a written statement. If you desire to do either, this should be accomplished within 10 days following receipt of this letter. Your statement should contain all pertinent facts and any extenuating or mitigating circumstances which you believe may have a bearing on this incident. You may contact this office by telephone at (303) 555-1111.

Until this matter is resolved, you may not conduct any airman examinations and are directed to return all examiner materials and supplies issued to you.

Sincerely,

John Jones
Manager

FIGURE 5.5.2.6.
SAMPLE LETTER OF NOTIFICATION OF PROPOSED REVOCATION

(Office Letterhead)

November 28, 1991

"CERTIFIED MAIL RETURN RECEIPT REQUESTED"

In Reply
Refer to: Jones

Mr. John J. Examiner
1011 S. Cottage Grove Ave.
Urbana, Illinois 33022

Dear Sir,

This office has evidence that indicates you issued an L-1011 type rating to Mr. John Smith on November 27, 1991, without conducting the required flight examination.

This is to inform you that this matter is under investigation by the Federal Aviation Administration, and this office is considering canceling your airman examination designation. We wish to offer you an opportunity to discuss the incident personally and/or submit a written statement. If you desire to do either, this should be accomplished within 10 days following receipt of this letter. Your statement should contain all pertinent facts and any extenuating or mitigating circumstances which you believe may have a bearing on this incident. You may contact this office by telephone at (303) 555-1111.

Until this matter is resolved, you may not conduct any airman examinations and are directed to return all examiner materials and supplies issued to you.

Sincerely,

John Jones
Manager

CHAPTER 6. AIRCREW DESIGNATED EXAMINER (ADE) PROGRAM

SECTION 1. GENERAL

411. GENERAL. This chapter contains information concerning aircrew designated examiner (ADE) programs and guidance to be used by principal operations inspectors (POI) and managers when evaluating an operator's request for an ADE program. Section 1 contains a general description of the ADE program. Section 2 contains guidance for the management of an ADE program. Section 3 contains guidance on the selection, training, and supervision of aircrew program designees (APD).

413. ADE PROGRAM OBJECTIVES. The primary objective of an ADE program is to make effective use of available inspector resources for airman certification and for surveillance of Federal Aviation Regulation (FAR) Part 121 and FAR Part 135 operators.

A. *Effective Use of Inspector Resources.* The ADE program is effective when the inspector is relieved from certification activities in order to perform oversight and management functions more efficiently; and when the designated examiner maintains the standards set by the inspector. The program requires that assigned inspectors gain close knowledge of the operator's aircraft, manuals, procedures, management personnel, and training programs. Surveillance is an integral part of the assigned inspector's everyday activities and is supplemented by planned inspections by geographic surveillance units. Desirable levels of compliance with airman certification requirements, operating regulations, and safe operating practices are maintained through a close working relationship between the inspector and the operator's Designated Examiner.

B. *Airman Training and Certification.* The ADE program is a means of assuring the continued qualification and proficiency of airmen trained and certified in a specific operator's training program.

C. *Safe Operating Practices.* The ADE program is a means of continuously monitoring the operator's flight operations and training programs to detect and correct (with the operator's cooperation) potential problems which could adversely affect safety.

415. PROGRAM DESCRIPTION. The ADE program was originally established under the provisions of FAR Part 183 for the purpose of delegating certification authority and activity to select employees of FAR Part 121 and FAR Part 135 operators. The program was designed for those operators with sophisticated training capabilities and programs that includes the extensive use of flight simulators and flight training devices, highly trained personnel, and a large volume of certification activity. Eligibility requirements have since been relaxed to permit smaller air carriers to take advantage of the benefits of an ADE program. The ADE program was and still is based on the premise that a candid relationship must be maintained between the operator and the Federal Aviation Administration (FAA). The program is comprises (1) an operator's check airman, further authorized by the FAA as aircrew program designees (APD) to conduct certification on behalf of the administrator; and (2) FAA inspectors, known as Aircrew Program Managers (APM) who oversee the APD's activities. Both APD's and APM's are selected for their experience, knowledge, and professional standing, in the interest of maintaining high certification standards. An APD candidate is selected from the ranks of the operator's proficiency check airmen and is given training in FAA policies and certification procedures before being designated as an APD (see section 3 of this chapter). An APM candidate is selected for knowledge and experience related to airman certification and air carrier training programs. Before being assigned APM duties, an APM is trained by the operator to qualify as a pilot-in-command (PIC) and as a fully-qualified check airman in one of the operator's aircraft. If the ADE program for an aircraft includes designated flight engineer examiners (DFEE), the APM is trained by the operator to qualify as a flight engineer. An APM maintains effective quality control over the operator's programs by leveraging knowledge of the operator to correct deficiencies and encourage high performance.

417. GUIDELINES FOR ESTABLISHING AN ADE PROGRAM. POI's, certificate-holding district office (CHDO) managers, and regional flight standards division (RFSD) managers should consider

establishing an ADE program when doing so would benefit the operator, the FAA, or both parties.

A. *Certification Activity.* Circumstances vary widely from operator to operator, and each situation must be considered separately to determine if establishing an ADE program is beneficial to the FAA and to the operator. Many factors should be considered such as multiple crew domiciles, travel time to and from training sites, the complexity of the operator's aircraft, and the complexity of the operator's type of operation. For example, an operator's entry into international operations may argue for an ADE program, even though fewer than 40 certification actions per year occur in that aircraft type. As a guideline, 40 complete airman certification or type rating actions on a specific aircraft type annually is usually sufficient activity to justify establishing an ADE program. The number 40 has been established because it roughly approximates 1 year of work for an inspector.

B. *New or Added Aircraft Type.* An ADE program may be practical and efficient when a new aircraft or a new derivative of existing aircraft is introduced. APM training provided by the operator affords timely appropriate training for the FAA inspector having oversight responsibility. This training in turn enables the FAA to provide good service to the operator in reviewing, approving, and overseeing the operators training program. Also, it allows the APM to establish an effective surveillance program.

C. *Future Requirements.* When inspectors evaluate the need for an ADE program, future requirements must be considered. For example, when an operator introduces a new aircraft into service, the FAA often experiences an exceptionally high demand for airman certification work and a need for expert surveillance of operations with that aircraft during the first few years that the aircraft is operated. In such cases the operator may often benefit by FAA anticipating the need and being ready for an ADE program as the aircraft is entered into service.

- CHDO and RFSD managers electing to create an APM position should ensure that the APM is selected and that the APM position is filled in time for the selectee to attend initial cadre training.
- It is particularly important that the APM selectees attend initial cadre training together with the operator's employees; the APM selectee participate in Flight Standardization Board (FSB) deliberations concerning type rating and training program requirements.

419. OPERATOR QUALIFICATION FOR AN ADE PROGRAM. In order to qualify for participation in an ADE program, an operator must be an FAR Part 121 or Part 135 operator, and should have at least one year of experience of operating with an approved FAR Part 121, Appendix H advanced simulator training program, or the equivalent. The operator must have an acceptable history of compliance with the FAR and safe operating practices, and must have sustained a good working relationship with the FAA. Operators requesting participation in an ADE program must commit to the following:

- Enter into a Memorandum of Understanding (MOU). An MOU is a written agreement between the operator and the FAA which specifies how the ADE program is to be conducted. In particular, an MOU must specify: (1) that the operator may have the benefit of APD's for a program, and (2) in return, the operator shall provide initial and recurrent training at the operator expense to an APM (or the APM's representative) who will oversee that program and supervise APD activities.
- To extend privileges and courtesies to the APM beyond those extended to aviation safety inspectors (ASI) other than APM's (These privileges must include all privileges that the operator grants to its own check airmen, except that of acting as PIC of an aircraft in flight. For example, an APM must be granted the same authority to operate the controls of flight simulators and flight training devices that the operator grants to its own check airmen.)

420.–430. RESERVED.

[PAGES 5-243 THROUGH 5-254 RESERVED]

CHAPTER 6. AIRCREW DESIGNATED EXAMINER (ADE) PROGRAM

SECTION 2. ADE PROGRAM MANAGEMENT

431. GENERAL. This section contains guidance for principal operations inspectors (POI) and aircrew program managers (APM) when administering an operator's aircrew designated examiner (ADE) program. This section also contains information on the general structure of the ADE program and descriptions of the duties and responsibilities of the individuals involved with the program.

433. ADMINISTRATIVE STRUCTURE OF AN ADE PROGRAM. Flight standards district offices (FSDO) that hold certificates for operations with ADE programs may be organized in a variety of ways. Regional flight standards division (RFSD) managers may structure the administration of an ADE program to accommodate local conditions. The following individuals have primary roles in an ADE program:

A. *Certificate Manager.* The person in a certificate–holding district office (CHDO) with responsibility for oversight of the operator is the certificate manager. Designation of the certificate manager is dependent upon the structure of the office. The CHDO may be a certificate management office (CMO) or a flight standards district office (FSDO), which may have a certificate management unit (CMU). The certificate manager may be:

- An office manager
- A unit supervisor
- A supervisory principal inspector
- A POI, a PMI, or a PAI

The certificate manager is responsible for all matters concerning the administration of the operator's certificate.

B. *Principal Operations Inspector (POI).* The POI is the operations inspector with responsibility for all operational matters of the ADE program. The POI reports to, and is directly responsible to, the certificate manager. The organization of the operations unit below the level of POI is left to the discretion of the POI with the concurrence of the certificate manager and the RFSD manager. Operations inspectors assigned to the ADE program support the POI, but may have unrelated activities as well. (ADE program-related duties may constitute only a fraction of an inspector's activities.) Similarly, the operators employees involved in the ADE program also support the POI.

C. *Aircrew Program Managers (APM).* APM's are appropriately trained operations inspectors assigned to oversee the certification activity and manage the surveillance of an operator's training program in a specific aircraft. The APM is reports to the POI on all technical matters concerning the ADE program.

D. *Partial Program Managers (PPM).* PPM's may be assigned to complement the APM in oversight and management activities related to an ADE program. A PPM is appropriately trained in a specific aircraft, and reports to the APM.

435. RESPONSIBILITIES OF POI's. POI's are responsible for all operational matters concerning the administration of the operator's certificate, including management of the ADE program. This responsibility includes the following:

A. *Achievement of Program Objectives.* The POI monitors performance to ensure that the ADE program meets its objectives. Objectives are identified nationally under the National Work Program and locally by FAA managers as special or local emphasis items.

NOTE: When SPAS becomes fully operational, local offices will have the capability of redirecting specified surveillance goals to meet program requirements.

B. *FAA/Operator Relations.* The certificate manager is responsible for establishing policies and procedures for operations inspectors in relation to the operator. This responsibility entails not only coordinating administrative policies and functions, such as scheduling, and maintaining effective working relations between operations inspectors and the operator's employees. The POI implements policies and procedures established by the certificate manager.

C. *Supervision of APM's.* Supervision of APM's includes the following:

(1) Certificate managers are responsible for the technical and administrative supervision of APM's, including the preparation of APM employee performance reports. District office managers and the RFSD manager shall organize the district offices so that effective supervisory and reporting relationships are established between certificate managers and APM's.

(2) The APM position requires a high degree of independence, specialization, expertise, and flexibility. An APM usually requires only broad guidance from the certificate manager. On occasion, a certificate manager may be required to provide detailed and specific guidance to standardize APM activities and to implement national policy.

D. *Resource Management.* Certificate managers and other certificate holding district office (CHDO) managers are responsible for recommending the initial establishment of an ADE program. A certificate manager is responsible for identifying APM resource requirements and for coordinating with the POI, the CHDO manager, and the RFSD to ensure that these requirements are met. Resource management duties include the following:

(1) *Monitoring APM Workloads and Assignments.* An APM position may be initially established on the assumption that the APM workload will fully occupy the assigned inspector. A certificate manager is responsible for monitoring APM workload and for recommending the deletion of the APM position if the workload decreases. Contrarily, a certificate manager may recommend that the APM position may be augmented by the assignment of one or more PPM's.

(a) When an APM's duties, as defined in this handbook, require less than 100% of the APM's available time, the POI should consider the assignment of additional duties to the APM. For example, an APM might be assigned duty as a PPM on another type of aircraft, or duty as an assistant POI.

(b) When an APM's duties, as defined by this handbook, exceed 100% of the APM's available time, the POI should consider the assignment of a PPM for the particular aircraft type.

(c) As mentioned earlier, 40 complete certificate actions a year when coupled with other work inherent in the program, may be a useful indicator of one year's work for one inspector. When the number of certification actions exceeds 40 there may be reason for the POI to consider appointing another PPM(s).

(2) *Overseeing Administrative Support Requirements.* The certificate manager is responsible for ensuring that APM administrative support requirements are identified and for coordinating with the POI, the CHDO manager, and the RFSD to meet those requirements. ADE program work and training requirements, as described in this handbook, must take priority over other inspector functions. When ADE program requirements have not been met, an APM should not be assigned other work. APM's should not normally be assigned administrative tasks or other duties such as answering complaints or conducting incident investigations and enforcement activities that are unrelated to an assigned ADE program. Such duties are more appropriately assigned to assistant POI's or to other inspectors.

NOTE: This provision is not intended to relieve APM's from the responsibility for processing enforcement cases when the APM has observed noncompliance during the course of assigned duties. It is also not intended to relieve the APM from administrative duties directly related to the ADE program.

(3) *Overseeing APM Training Requirements.* The certificate manager shall ensure that APM's are scheduled for, and receive, the required training provided by the operator and by the FAA. The certificate manager shall identify and coordinate any requirements with district and regional office management. Certificate managers are responsible for projecting needed manpower, training, and budget requirements at least 3 years ahead.

(4) *Obtaining Support Services and Supplies.* The certificate manager shall establish channels to obtain the services of qualified inspectors to support APM programs, when necessary. Certificate managers shall coordinate with CHDO and local automation network (LAN) managers to ensure that APM's are provided with adequate data processing support and are supplied with computer generated reports.

E. *Coordinating with Geographic Surveillance Units.* Certificate managers are responsible for establishing procedures for communicating with: (1) units having responsibility for geographic surveillance of an operator and (2) Training Center Program Managers when an operator is conducting its own training at a training center or is contracting for training at a training center.

437. RESPONSIBILITIES OF APM's. An APM supports the POI and is the focal point for all technical matters and surveillance in respect to an assigned aircraft. The APM manages the portion of the ADE program relating to that aircraft. These duties include the following:

A. *Airman Certification.* An APM is responsible for ensuring that airman certification standards

prescribed by the FAR, the [Practical Test Standards (PTS)] and this handbook are maintained in the ADE program. The APM recommends candidates to the POI for selection as APD's and is responsible for qualifying the APD's in the conduct of airman certification. The APM maintains certification standards through an active program of meetings and surveillance. (PTRS Activity Code 1590) To ensure continued, firsthand knowledge of an operator's program and certification activities, an APM shall personally conduct a minimum of four certification activities (oral, simulator or flight evaluations) annually, provided there is sufficient certification activity. If not the APM shall conduct a minimum of four proficiency checks, preferably with no advance notice.

B. *Check Airmen.* APM's shall ensure that high standards are maintained in the operator's proficiency and line check program by developing and maintaining active surveillance of the operator's check airmen. (PTRS Activity Code 1631) An APM or PPM should observe each check airman performing check airman duties during the initial qualification for check airman. The initial check airman observation may be conducted by a qualified inspector when workload prevents an APM or PPM from personally performing the observation.

NOTE: A geographic inspector must receive approval from the POI or the APM before conducting an initial check airman observation requested by the operator. (PTRS Activity Code 1631) The inspector must be familiar with the certificate holder's operating procedures, and with the qualification procedure established by the POI under which a successful check airman candidate is to be processed. Geographic inspectors shall not perform an initial qualification observation without first ensuring that the POI is aware that the candidate is scheduled for the observation. Satisfactory completion of a check activity by a check airman candidate who has been observed by an FAA inspector does not complete the approval process. The POI (or APM) shall complete the approval process by issuing an appropriate check airman letter of approval unless other arrangements have been made. The approval process concludes with completion of appropriate VIS entries. (PTRS Activity Code 1346/1347/1349)

(1) *Observing Check Airman.* An APM shall ensure that each check airman is observed at least once a year. (PTRS Activity Code 1631) Before a check airman candidate is approved, the APM shall determine the geographic unit that will have surveillance responsibility for that airman. This information is entered into the air operator's Vital Information Subsystem (VIS) check airman file as a Geographic District Office (GDO). This information is downloaded to the respective GDO. The National Work Program process determines surveillance requirements. The geographic unit shall be notified of the check airman approval so that an annual check airman observation may be made an "R" or "P" item in the Program Tracking and Reporting Subsystem (PTRS) system. This requirement applies to proficiency check airman and to line check airmen.

NOTE: The PTRS program is being modified to differentiate between line and proficiency check airmen in PTRS. This change has not yet been implemented.

(2) *Conducting Inspections Personally.* The APM shall personally conduct a number of inspections annually. These items, which shall be made "P" items on the APM's work program, should include the following:

- At least four inspections (preferably no notice) of the operator's check airmen conducting proficiency checks
- At least four inspections of check airmen conducting line checks (preferably no notice)

C. *Training Programs.* An APM is responsible for reviewing training programs for assigned aircraft and, when appropriate, for recommending initial and final approval to the POI. An APM is responsible for ensuring that the initial and continuing quality of the operator's training program meets the highest standards. APM's and PPM's shall monitor an operator's actions when students do not progress as scheduled or fail proficiency tests. An APM is responsible to the certificate manager and to the POI for conducting surveillance and for reevaluating the adequacy of the assigned aircraft training program at least once each calendar year. (PTRS Activity Code 1626). This surveillance shall be entered as a "P" item in PTRS for that APM's annual work program. In this reevaluation, the APM should identify any deficiencies and recommend changes as appropriate.

D. *Currency.* An APM shall maintain aircraft qualification and currency, as specified in paragraph 443 in this section. Completion of the required training or check in the calendar month before or after the due-month is considered to meet requirements, but does not change the due-month.

E. *Technical Assistance.* An APM is expected to develop expert knowledge of the assigned aircraft. An APM shall provide technical assistance on incident, accident, and violation investigations related to an assigned aircraft. An APM shall review the

operator's aircraft operating and policy manuals, MEL's, and procedures as an integral part of the surveillance program. (PTRS Activity Code 1621) An APM shall advise the POI in approving manuals and shall consult with the Aircraft Evaluation Group (AEG) for technical assistance.

F. *En Route Surveillance.* An APM is responsible for ensuring a high level of aircrew performance through en route surveillance of operations in the assigned aircraft type. En route surveillance includes following activities:

(1) *Determining Geographic Unit Responsibility.* An APM shall determine which geographic unit has surveillance responsibility for each aircrew domicile. From the tables presented in volume 6 of this handbook, the APM shall determine the desired number of observations and the proportion required for each aircrew domicile. The APM shall ensure that this information is made available to each geographic unit supervisor through the POI by August 1 of each year so that the supervisor may construct a work plan for the next fiscal year.

(2) *Conducting En Route Surveillance.* An APM shall personally conduct en route surveillance each quarter to maintain first hand knowledge of the operator's line operations. These observations shall be entered as "P" items on the APM's work program.

(3) *Monitoring En Route Inspection Program.* An APM shall continuously monitor the effectiveness of the en route inspection program. For example, an APM may find that an inadequate number of en route inspections are being conducted in a particular area of operation. The APM may recommend increased en route inspections to the POI. The POI, in turn may refer the APM's recommendation to the appropriate geographic unit supervisors. AN APM should analyze inspection results for trends that indicate a need for corrective action. The APM shall inform the POI of any trends or deficiencies identified and, if appropriate, shall recommend that the POI establish a program of special emphasis items for en route inspections of the operator.

(4) *Preparing Annual En Route Inspection Trend Analysis.* The POI, together with each APM, shall prepare an annual en route inspection trend analysis. The POI shall provide a copy of the report to the operator. This report should refer to the comments and observations made by inspectors through the PTRS system. The report is not normally useful as a statistical account alone, but does act as an effective early warning and quality control tool for the FAA and for the operator's managers. The report is often a departure point for deliberations by the POI and the operator on the corrective measures to be taken by the operator.

G. *Training Geographic Unit Inspectors.* An APM shall participate in a program to train geographic unit inspectors responsible for oversight of segments of the ADE program managed by the APM. Training must include the operator's manuals, checklists, and procedures. This training is normally conducted annually with a 60-day prior notification to geographic unit supervisors, so that the appropriate inspectors may be scheduled to attend.

H. *Exchanging of Information.* An APM is encouraged to share information and ideas with other APM's and inspectors. The APM shall identify inspectors in other FAA offices who are qualified in the assigned aircraft and who conduct surveillance on the operator. When appropriate, the APM shall communicate directly with these inspectors and their supervisors. To provide feedback to district offices with geographic surveillance responsibility for the operator, the APM shall send copies of the annual en route inspection program trend analysis report to those district offices.

I. *Serving on Boards.* When selected, an APM should commit to serve on the Flight Standardization Board (FSB) and/or the Flight Operations Evaluation Board (FOEB), for the appropriate aircraft. APM's are uniquely qualified and are a valuable resource for these boards.

439. APM ELIGIBILITY REQUIREMENTS. Before being assigned to an operator's training program, inspectors who are APM candidates must meet the following APM eligibility requirements:

- Be fully qualified as an aviation safety inspector, GS 1825
- Hold an ATP certificate
- Hold a type rating in an aircraft of the same group, for assignment to a FAR Part 121 aircraft
- Hold a type rating in an aircraft of the same category, for assignment to a FAR Part 135 aircraft requiring a type rating
- Hold a class rating in an aircraft of the same category, for assignment to a FAR Part 135 aircraft not requiring a type rating
- Must pass the flight engineer written exam before beginning training with the operator, when the aircraft requires a flight engineer

- Must have served a minimum of 3 years as an aviation safety inspector performing airman certifications

NOTE: For an inspector being considered for assignment to a FAR Part 121 aircraft, the 3-year experience requirement must have been acquired in FAR Part 121 aircraft. For candidates being considered for assignment to a FAR Part 135 aircraft, this experience must have been acquired in aircraft of the same category. Credit may be given for equivalent experience gained in industry as a check airman or as a designated pilot examiner. Credit mat also be given for experience in military service as an instructor or flight examiner in equivalent aircraft.

- Must be willing to remain in the APM assignment for a minimum of 2 years after completion of training

441. APM TRAINING BEFORE DESIGNATION. Before APM designation, an inspector must satisfactorily complete the same training and qualify to the same standards as flight crewmembers and as check airmen employed by the operator.

A. *Minimum Required Training for APM's.* An APM candidate must complete, to the satisfaction of the POI and the operator, at least the following curriculum segments of the operator's approved training program:

(1) Basic indoctrination training.

(2) Pilot-in-command (PIC) initial equipment training, including type certification, when appropriate. If the operator does not have an initial equipment training curriculum segment for the aircraft, APM's must complete the PIC transition curriculum for the aircraft. APM's shall complete the flight engineer initial equipment curriculum segment or transition curriculum, when applicable.

(3) Any special training, such as Category II, Category III, or long-range navigation, that is required for qualification as a PIC for the operator.

(4) The operator's check airman training for the pilot duty position and for the flight engineer duty position, when applicable.

(5) Line observation experience. Instead of receiving operating experience (OE), as the operator's flight crewmembers do, the APM candidate shall observe at least three on-line flight segments that are representative of the operator's use of that aircraft in line operations.

NOTE: An APM candidate is eligible for the advanced simulation provisions of FAR Part 121, Appendix H, and may receive the certification flight tests in a level C, or higher, simulator.

B. *Inspector Duties During Training.* During the period in which APM candidates are in training with an assigned operator, they should not be assigned or perform normal inspector duties.

C. *APM Qualification in a New or Additional Aircraft.* Under limited conditions, an inspector may be assigned as an APM on more than one aircraft. The following guidance applies:

(1) An inspector shall not be assigned as an APM for more than one operator.

(2) An APM assigned to an operator's program that involves a turbojet or other aircraft requiring a type rating is normally current only in that aircraft. An APM may be assigned responsibility for more than one aircraft for an operator only with the specific approval of the RFSD manager.

(3) An APM assigned to FAR Part 135 aircraft other than the transport and commuter category family of aircraft, may be assigned to two families of aircraft, as defined in volume 3, chapter 2, section 2 of this handbook. In the multiengine, general-purpose airplane family other than transport and commuter category, an assigned APM may maintain qualification in two equivalent series of aircraft, such as the Cessna and Piper series.

(4) Should it become necessary to qualify an APM in a new aircraft or in a second type of aircraft, the APM shall complete all of the training requirements of this section for the second aircraft, except for the following:

- Basic indoctrination training
- That portion of check airman training not specific to the second airplane type

D. *Costs of Training.* The operator is responsible for providing all required training and bearing its costs. The FAA shall bear the cost of any lodging and per diem incurred by the APM.

443. MAINTAINING APM QUALIFICATIONS. APM's must complete the same proficiency, currency, and recurrent training requirements as the operator's check airmen, with the exception of line checks.

A. *Recurrent Training.*

(1) Recurrent training for an APM shall consist of the same ground and flight training curriculum segments that the operator provides for its PIC's, including the proficiency check requirements for a PIC and flight engineer, when applicable. An APM should also

complete the FAA air carrier operations inspector job function recurrent training, at least once in every 24 calendar months (course number 21621). Proficiency checks of an APM shall be conducted by an inspector chosen by the POI or by an APD observed by another inspector. A company qualified check airman will occupy the copilot's position as a safety pilot during all APM proficiency checks conducted in an aircraft.

(2) When the operator's training program features single visit training (under an exemption to FAR Part 121), or AQP, the APM will participate in that training program, in the same manner as the operators PIC's.

NOTE: FAR § 121.453 specifies the currency requirements for a flight engineer. The POI and the operator should include a provision in the memorandum of understanding to allow the APM to maintain currency for a flight engineer. One method would be to provide simulator periods every 6 months for training and for checking.

B. *Check Airman Qualification.*

(1) *Training and Standardization Meetings* An APM shall attend the recurrent check airman training and standardization meetings that the operator provides for its check airmen.

(2) *Single Visit Training and AQP.* When the operator's training program features single visit training (under an exemption to FAR Part 121), or AQP, the APM will participate in the instructor, LOFT facilitator and evaluator training required by those programs.

C. *Landing Currency.* The MOU between the FAA and the operator shall provide for the APM to maintain currency in the assigned aircraft. An APM shall maintain landing currency (3 landings every 90 days) for each assigned aircraft for which a type rating is required as an APM. The operators shall offer the APM the opportunity to accomplish landing currency by making available a minimum of two hours of simulator time each quarter. If the operator is unable to make available the required simulator time, the operator must provide an aircraft, at the operator's expense, to accomplish the required landing currency. For aircraft not requiring a type rating, the APM shall maintain currency for the assigned category, class, and equivalent grouping of aircraft.

D. *Maintaining Dual Qualification.* An APM assigned to two aircraft types must be trained and qualified on both aircraft in accordance with this handbook and the operator's approved training program.

E. *Failure to Maintain Qualification and Currency.* An APM failing to maintain qualification in accordance with this paragraph shall not perform inspector duties until all requirements are met.

(1) Training completed in the month before or the month after the due-month is considered to have been accomplished in the due-month.

(2) A POI shall not designate an APD when the operator has not provided the APM with the opportunity to remain qualified and current. The POI and district office managers must take positive action to ensure that FAA responsibilities are fulfilled for keeping APM's qualified and current. When an APM transfers or retires, the POI shall obtain the services of qualified inspectors to perform the APM's duties on a temporary basis until the APM position can be refilled. If adequate oversight of APD's and the program cannot be maintained, the POI shall cancel one or more APD designations, and may consider cancelling the ADE program.

445. TRANSITION UPON REASSIGNMENT OF AN APM. When an APM is reassigned, the POI, the office manager, and the regional flight standards division (RFSD) are responsible for assuring the continuity of the ADE program. When the need of a replacement for a reassigned APM is known, a replacement inspector shall be identified and entered into training as soon as practical. An outgoing APM's shall complete the renewal requirements for those APD's whose designations will expire within 90 days of the date of reassignment. If an APM position is vacant for an extended time, the office manager, the POI, and the regional flight standards division shall detail a qualified inspector to oversee the program. If the APM position remains unfilled for 6 months or more , the office manager shall consider cancelling the ADE program for the affected aircraft fleet.

447. REMOTE TRAINING FACILITIES. An operator with an ADE program may have training facilities located outside the CHDO's area of geographic responsibility. An APM working in such a program shall be assigned to the certificate holding office. This APM shall regularly travel to the training facility to accomplish APM duties. In some cases this arrangement may be inefficient, and it may be beneficial to locate the APM in a facility other than the certificate holding office. The POI and certificate holding office manager shall evaluate the specific circumstances, particularly the time and means of commuting to the remote site. If the travel time between the certificate holding office and the training facility is too great for an APM to travel and to perform APM duties in the same day, locating the APM in a district office closer to the training facility should be considered. Another consideration is whether the APM can perform en route surveillance on the appro-

priate aircraft during travel to and from the training location. When the certificate holding office and training facility are in the same region, the recommendation for an APM's remote placement shall be forwarded to the RFSD. When the certificate holding office and training facility are in different regions, the recommendation shall be coordinated through the affected RFSD's and forwarded to AFS–200 for approval. The RFSD for the office in which the remote APM is located shall ensure that the necessary support is provided by that office.

449. OPERATOR RESPONSIBILITIES. Under an ADE program the operator assumes special responsibilities, as follows:

A. *FAA Operator Relations.* The ADE program is based on the assumption that an open relationship between the operator and the FAA can be maintained. The operator must be willing to maintain this open working relationship and to give the APM complete access to facilities, working level personnel, and managers. The operator must be willing to accept input from the POI and APM concerning procedures, manuals, and training programs and to seek mutually acceptable solutions for deficiencies at the working level. The operator must be willing to cooperate fully with incident, accident, and violation investigations. In this relationship, compliance is usually achieved with minimum use of enforcement action. Internal audit programs and self-disclosure programs are evidence of a good compliance posture by an operator. When an operator is no longer willing to maintain an open relationship, the POI shall cancel the ADE program.

B. *APM Support.* The operator commits to provide training and to bear costs of qualifying the APM. The operator must be willing to cooperate in scheduling so that APM qualification and currency requirements are accomplished in a timely manner.

C. *Information.* The operator must agree to make the following information available to the POI and APM:

- Projected and revised training schedules
- Projected and revised APD schedules
- Notification of any failures and withdrawals from training
- Actions taken on students who fail or who are withdrawn from training
- A report of additional training provided to airmen in excess of approved training hours
- A report of failed proficiency and line checks

451. CERTIFICATE HOLDING OFFICE MANAGER RESPONSIBILITIES. A manager of a certificate holding office is responsible for establishing effective administrative systems to support an ADE program. This support shall include the following:

A. *Certification Paperwork.* An office managers shall establish and maintain administrative procedures for the efficient processing of certification paperwork. As much of the processing as possible should be accomplished by trained administrative personnel and not by an inspector, an APM, or a POI. An APM is not relieved of the responsibility to ensure that an APD punctually and accurately completes certification paperwork. A flight standards offices is not required to maintain hard copies of certification paperwork since the PTRS serves as a record of certification activity.

B. *Data Processing Support and Standards Reports.* The office manager shall establish and maintain administrative procedures for entering APM and APD data into the PTRS. At the close of each quarter the POI and the office managers shall have three reports prepared for use by the APM in managing his/her work program. These reports are generated through ad-hoc procedures from the PTRS data base. In the future, these reports shall be available as standard reports. The three reports are as follows:

(1) *APD Surveillance Report.* An APD surveillance report, showing the surveillance accomplished on each APD during the past 4 quarters, should be formatted as follows:

- Operator
- Aircraft type and name of APD assigned to that aircraft
- Name of each APM
- Type of surveillance (oral/simulator/aircraft), and date of surveillance
- Starting date of report
- Ending date of report

(2) *Check Airman Surveillance Report.* A check airman surveillance report, showing the surveillance accomplished on check airmen during the past 4 quarters, should be formatted as follows:

- Operator
- Aircraft type and number of approved check airmen by specialty (proficiency check or line check)

- Names of check airmen observed, type of surveillance (proficiency check or line check), and date of surveillance
- Starting date of report
- Ending date of report

(3) *Aircraft Activity Report.* A quarterly activity report should be prepared for each aircraft in the operator's ADE program (see figure 5.6.2.1. for format).

453. RFSD RESPONSIBILITIES.

A. *Program Approval.* An RFSD manager is responsible for the approval of the initial establishment of an ADE program for any operator located within the region. The RFSD should give written notification of any such action to AFS–200 and AFS–500, including a copy of the MOU.

B. *Resources.* An RFSD manager shall ensure that an ADE program is allocated adequate staffing and funding to function effectively.

(1) *APM Training.* Sufficient resources must be allocated to provide for the training of APM's, in accordance with the requirements of this handbook.

(2) *Staffing.* An adequate number of APM's, PPM's, assistant POI's, ASI's, and clerical staff must be provided to accomplish the certificate management and APM functions described in this handbook, in an effective and timely manner.

(3) *Forecasting Staffing.* Personnel and budget forecasts for a 3–year period shall be prepared annually and revised annually. Adequate provisions must be made for turnover caused by promotions and retirements. Additional positions due to expected growth in operators programs must be forecast.

C. *Components of ADE Program Assessment.* The RFSD shall conduct periodic reviews of each ADE program. The purpose of these reviews is to ensure that the ADE program is effectively managed and that the program meets its stated objectives. These reviews shall be conducted as often as necessary, but not less than once each 36 months. A checklist for this purpose is provided in figure 5.6.3.2.

(1) *Assessment Team Members.* The program assessment team shall consist of five members:

- A team leader from within the region, designated by the regional division manager
- A headquarters representative, designated by the AFS–500 division manager
- A POI of another operator having an ADE program, preferably from outside the region
- Two APM's from other programs, preferably from outside the region

(2) *Four Part Program Assessment Report.* The program assessment report shall consist of at least four parts:

- An assessment of the operator's training program to determine if airmen are being adequately trained to perform in the operating environment
- An assessment of the APD's and check airmen to determine if the required standards are being maintained
- An assessment of the certificate holder's operating practices to determine if there are any undetected trends which might affect safety (particular attention should be given to manuals, checklists, and operating procedures)
- An assessment as to whether or not the operations portion of the certificate unit is performing effectively and a determination as to whether the division, certificate manager, POI, assistant POI's, and APM's have followed the guidance of this chapter

(3) *Major Findings.* The assessment contained in the program assessment report shall be divided into major and minor findings. Major findings consist of the following items:

- Operator deficiencies which could adversely affect safety and which have gone undetected, unreported, or uncorrected
- Management deficiencies, which in the opinion of the assessment team, have a major impact on the effectiveness of the program

(4) *Minor Findings.* Minor findings contained in the assessment report are those deficiencies which APM's or POI's have recognized. Those deficiencies are being corrected or are correctable. Minor findings should be brought to the attention of the appropriate individual(s) and may be resolved during the assessment period.

(5) *Oral Out Briefing.* An oral out briefing shall be given to the certificate manager, the POI, and the APM(s). A written report of the assessment shall be prepared, containing the identification of each major finding and the recommended corrective action. A review of the extent and nature of minor findings shall be presented, but the identification of each minor finding and recommended action is unnecessary. A copy of the report shall be furnished to the certificate

manager, the regional division manager, and AFS–200. A separate out briefing shall be conducted for the operator. This out briefing should cover items of concern to the operator.

455. ESTABLISHING AN ADE PROGRAM - MOU. The operator or the FAA may initiate discussions about the establishment of an ADE program. The assigned POI should discuss the contents of this chapter in detail with the operator. Program requirements, authorizations, and limitations should be completely understood by the operator. When an operator decides to participate in an ADE program, a ''Memorandum of Understanding'' (MOU) shall be jointly prepared by the POI and the operator. A sample MOU is included as figure 5.6.2.3. This sample is provided only as an example. Since each operator has its own training needs, each MOU should reflect those needs. The MOU must be signed by an appropriate official for the operator and by the POI. The memorandum of understanding should contain the reasons for establishing the ADE program; the aircraft types involved; and an overview of how the requirements of the program will be met. A copy of this memorandum, any appropriate attachments, and the office manager's recommendations shall be forwarded to the RFSD for review. If the RFSD manager determines that the ADE program should be established, approval of the program shall be indicated by the RFSD stamping or typing the word, ''APPROVED,'' on the memorandum of understanding. The RFSD manager shall sign and date the memorandum of understanding and return it to the certificate holding office files for retention in the ADE program files. When an ADE program is approved, the flight standards division shall forward a copy of the memorandum of understanding to AFS–200. If the RFSD manager determines the ADE program should not be established, the manager shall forward a letter to the appropriate office manager and return the memorandum of understanding. The letter must contain an explanation of the reasons for not establishing the ADE program.

457. PROGRAM REVISIONS. Revisions to an approved ADE program mat be required for a variety of reasons, such as mergers and equipment changes. The POI shall consider the effects of such changes and shall take appropriate action. Typically the MOU may need to be revised. Some changes, such as mergers, may affect more than one operator. Recommendations for changes affecting more than one operator in the same region shall be forwarded to the RFSD for action.

458.–468. RESERVED.

FIGURE 5.6.2.1.
ADE PROGRAM QUARTERLY ACTIVITY REPORT

Aircraft Type:_____

Operator Name:_____

Dates:_____

PILOT CERTIFICATION	ORAL ATP/TR 1510/1514	SIMULATOR ATP/TR 1511/1515	AIRCRAFT ATP/TR 1512/1516
Conducted By: APM	_____	_____	_____
ASI	_____	_____	_____
APD	_____	_____	_____
Totals:	_____	_____	_____

F/E CERTIFICATION	ORAL ORIGINAL/ADDED 1510/1518	SIMULATOR ORIGINAL/ADDED 1511/1519	AIRCRAFT ORIGINAL/ADDED 1512/1520
Conducted By: APM	_____	_____	_____
ASI	_____	_____	_____
DFEE	_____	_____	_____
Totals:	_____	_____	_____

CHECK AIRMAN SURVEILLANCE - PTRS ACTIVITY CODE 1631

No. Conducted By APM _____ No. Conducted By ASI _____ Total: _____

APD SURVEILLANCE - PTRS ACTIVITY CODE 1672

No. Conducted By APM _____ No. Conducted By ASI _____ Total: _____

DESIGNATED FLIGHT ENGINEER EXAMINER SURVEILLANCE - PTRS ACTIVITY CODE 1668

No. Conducted By APM _____ No. Conducted By ASI _____ Total: _____

FIGURE 5.6.2.2.
PROGRAM ASSESSMENT CHECKLIST

AREA I. OPERATOR'S TRAINING PROGRAM. An assessment of the operator's training program shall be conducted.

A. Are the airmen trained and certified in the program qualified for and proficient in the operations conducted?

B. Does the operator have a consistent cockpit management philosophy which is applied to all aircraft operated?

C. Does the operator's training program incorporate CRM training?

AREA II. APD AND CHECK AIRMAN PERFORMANCE. An assessment of the APD's/DFEE's and the check airman's performance shall be conducted to determine if the required standards are being maintained.

A. Is the level of competence required for the check airman and APD designation adequate?

B. Are the APD's complying with the airman certification regulations and the guidance of this handbook?

C. Are the check airmen complying with the regulations and guidance of this handbook?

AREA III. OPERATING PRACTICES. An assessment of the certificate holder's operating practices shall be made to determine if undetected trends are present which might affect safety.

A. Is the policy and direction provided by the operator clear and adequate?

B. Do crews adhere to the policy and guidance provided by the operator, the regulations, and safe operating practices?

C. Are problems or trends present that have not previously been recognized and documented?

D. Are corrective actions being taken to solve previously identified problems?

E. If there are previously identified problems, does the team judge the corrective actions as likely to be effective and sufficient?

AREA IV. ADE PROGRAM MANAGEMENT. An assessment of the operations portion of the certificate unit will be made to determine if the APM is performing effectively in managing the ADE program.

A. Are APM's able to concentrate on technical questions, APD training, and the surveillance of APD's and check airmen, or are they required to concentrate on certification activities and enforcement duties?

B. Have APM's gained an expert knowledge of the operator's aircraft, manuals, procedures, management personnel, and training programs?

C. Are APM's personally conducting a minimum of four certification actions (oral tests or flight tests) each year?

D. Are APM's personally conducting the required number of inspections that follow?

- At least four inspections of the operator's check airmen conducting proficiency checks
- At least four inspections of check airmen conducting line checks
- Conducting surveillance of the operator's training program related activities for their assigned aircraft, to include initial, upgrade, differences, recurring, and specialized training?
- Conducting surveillance of the flight simulators and flight training devices used in the operator's training program to determine if they are being properly used with respect to program requirements and are they being maintained so that training program effectiveness is not adversely affected?
- Are the operator's instructors and examiners documenting malfunctions in the simulators and flight training devices, and is the equipment being repaired promptly when discrepancies are noted?

E. Are APM's establishing programs to ensure that each check airman is observed at least once a year?

(1) Are geographic units being notified of check airman designations?
(2) Are the results of check airman observations being monitored and analyzed for trends?

Figure 5.6.2.2.–Continued
Program Assessment Checklist

F. Are APM's reviewing training programs for their assigned aircraft and monitoring operators' actions when students do not progress as scheduled or fail proficiency tests?

G. Are APM's monitoring and analyzing the effectiveness of the en route inspection program on both the operator and the assigned aircraft on a continuing basis?

(1) Are APM's determining the geographic units which have surveillance responsibility for aircrew domiciles of the assigned aircraft and providing geographic unit supervisors with information to establish "P" items by August 1 of each year?
(2) Are APM's analyzing inspection results for trends and other areas that indicate a need for corrective action?
(3) Are en route inspection trend analysis reports prepared by the POI in conjunction with each APM?
(4) Are copies of the report provided to and discussed with the operator?
(5) Are APM's identifying and training geographic unit inspectors who have specific surveillance responsibilities for segments of the program the APM manages?
(6) Are APM's exchanging information and ideas with other APM's and inspectors?

H. Applying the guidance of volume 5, chapter 5, section 2, of this handbook (40 airman certification actions per year), how many APM's should be assigned to the program?

(1) Is this number too many or too little for the conditions found? Are there other factors such as the need for expert training present?
(2) Have future factors been identified and planned for?

I. Is the operator willing to participate in the program?

(1) Is the operator providing the APM's with the training previously agreed to?
(2) Is the operator extending privileges and courtesies to APM's required as a condition of the program?
(3) Is the operator giving APM's unrestricted access to facilities, working-level personnel, and managers?
(4) Is the operator willing to accept input from the POI's and APM's concerning procedures, manuals, and training programs and to seek mutually acceptable solutions for deficiencies at the working level?
(5) Is the operator willing to cooperate fully with incident, accident, and violation investigations?
(6) Is the operator cooperating in scheduling so that APM qualification and currency requirements are accomplished in a timely manner?
(7) Is the operator providing the required information to the POI and APM's?

J. Is there a memorandum of agreement between the operator and the CHDO?

(1) In the team's opinion, does the memorandum effectively define the responsibilities of both parties?
(2) Are these responsibilities being faithfully discharged?
(3) Has the memorandum of understanding been kept up to date?

K. Is the operations unit effectively managed?

(1) Is the certificate manager informed about issues, problems, and corrective actions within the ADE program?
(2) Are both the authority and responsibility for accomplishing the administrative functions related to management of the certificate and to the ADE program, vested in one senior operations inspector, who reports to and is directly responsible to the certificate manager?
(3) In the team's opinion, is the organizational structure effective?
(4) How is the operations unit measuring, analyzing, and ensuring that the ADE program meets its objectives?

Figure 5.6.2.2.–Continued
Program Assessment Checklist

(5) Have policies and procedures been established for operations inspectors in relation to the operator? In the opinion of the team, are these policies and procedures effective?
(6) Does the office organizational structure ensure that supervisory and reporting relationships between the POI and the APM's are effective?
(7) Have APM's resource requirements been analyzed annually and projected 3 years ahead? Has coordination been conducted with the certificate manager, office manager, and the RFSD to ensure that these requirements are satisfied?
(8) Has a budget forecast for 3 years ahead been forwarded to the certificate manager and to the regional Flight Standards district office?
(9) Have APM's administrative support requirements been identified and coordinated with the certificate manager to obtain the necessary support?
(10) Are APM's scheduled for required training from both the operator and from the FAA? Are APM's actually receiving the required training from both the operator and from the FAA?
(11) Were channels established to obtain the services of qualified inspectors in support of APM programs, when necessary?
(12) Are adequate data processing support facilities supplied?

L. Are APM's completing the same training and qualified to the same standards as flight crewmembers and check airmen employed by the operator in the assigned aircraft? Are APM's completing the following training?

(1) Basic indoctrination training?
(2) PIC initial equipment training?
(3) Special training, such as CAT II, CAT III, or long-range navigation, that is required for qualification as a PIC for the operator?
(4) The operator's check airman training for the pilot duty position (or for the flight engineer duty position, when applicable)?
(5) Observing at least three crews on line flights before designation?

M. During the period in which APM candidates are training with the assigned operator, are they relieved of normal inspector duties?

N. Is the operator satisfied with the qualifications and competency of the individuals assigned as APM's?

O. Are office managers and POI's coordinating with the RFSD to assure continuity of the ADE program when an APM is reassigned?

P. If an operator has training facilities located outside the area of geographic responsibility of the CHDO, has an analysis been made of the benefits of locating the APM's within the CHDO?

FIGURE 5.6.2.3.
SAMPLE MEMORANDUM OF UNDERSTANDING

MEMORANDUM OF UNDERSTANDING BETWEEN _____ (AIR CARRIER NAME) & THE FEDERAL AVIATION ADMINISTRATION

This Memorandum of Understanding is based upon guidance found in Federal Aviation Administration (FAA) Order 8400.10, ''Air Transportation Operations Inspector's Handbook,'' volume 5, chapter 5. The parties involved are _____ (air carrier name) and the Certificate Holding District Office (CHDO) or Certificate Management Office (CMO) or Certificate Management Unit (CMU). The object of this memorandum is to establish a working agreement for an Aircrew Designated Examiner (ADE) program for the following airplane fleet(s): _____.

1. The FAA ADE program has been established under the provisions of the Code of Federal Regulations Title 14 part 183 (part 183) for the delegation of certification authority and responsibility to selected employees of part 121 operators. The ADE program is comprised of the employee(s) of _____ (air carrier name), known as Aircrew Program Designees (APD) and Designated Flight Engineer Examiners (DFEE), who will conduct airman certification examinations under the supervision of FAA Inspector(s), known as Aircrew Program Managers (APM). The APM is, in turn, functionally responsible for the surveillance and certification of airmen on specific airplane types. All APM's report directly to the air carrier's principal operations inspector (POI) on all matters pertaining to the ADE program. When an ADE program becomes complex, additional FAA inspectors may be assigned to assist the APM. These inspectors are known as Partial Program Managers (PPM). Additional APM's may also be added as programs become more complex.

2. The FAA inspector, assigned as the POI, is responsible for the overall management of the ADE program, including establishing policies and procedures, coordinating, and standardizing APM's.

3. The ADE program is based upon the requirement that _____ (air carrier name) and the CHDO, CMO, or CMU maintain an open relationship. _____ (air carrier name) agrees to allow APM's unrestricted access to facilities, working level personnel and managers. _____ (air carrier name) agrees to accept input from the POI and the APM's (and PPM's) concerning procedures, manuals, and training programs and to seek, at the working level, mutually acceptable solutions for deficiencies.

A. _____ (air carrier name) agrees to actively and continuously measure the effectiveness of its policies and procedures, manuals, and training programs. Through the POI and the APM's (and PPM's), the FAA will share its surveillance findings, so that _____ (air carrier name) is provided an independent assessment to measure the effectiveness of their training program.

B. It is mutually understood that in the management of a complex organization such as an airline, technical deviations from the regulations may occur, and good operating policies, FAA-approved manuals, checklists, procedures, and training programs become outdated. _____ (air carrier name) and the FAA agree to use the Voluntary Disclosure Program as described in Advisory Circular 120-56 to ensure compliance with the applicable Federal Aviation Regulations (Regulations) and _____ (air carrier name) policies. In accordance with the Administrators' policy on compliance and enforcement relating to the violations of the Regulations, the _____ CHDO, CMO, or CMU agrees to record, but defer any enforcement or other action (such as withdrawing approval) on such deficiencies until a mutually acceptable solution is determined. Should a mutually acceptable corrective action be found and successfully implemented, the matter will be processed in accordance with the procedures contained in AC 120-56. This policy does not, however, extend to the acts of individual employees which actually jeopardize flight safety or to matters of non-compliance that are discovered by the FAA that do not meet the criteria for the Voluntary Disclosure Program.

C. _____ (air carrier name) agrees to enforce its policies and directives by taking appropriate and just disciplinary action against employees who fail to comply. The FAA will take enforcement action against any individual who violates any Regulation and poses an actual threat to passengers or other employees. In order to be fair, however, the _____ CHDO, CMO, or CMU, agree to delay, and to recommend a sanction in such cases until it determines what action(s) _____ (air carrier name) has taken. If, in the POI's opinion, the disciplinary action is appropriate and timely, the POI shall recommend that the FAA accept it as an adequate sanction.

D. In order for APM's (and PPM's) to function effectively in the ADE program, they require an expert knowledge of the operator's program. _____ (air carriers name) agrees to extend certain privileges to APM's and PPM's. These privileges include all privileges that the operator grants to its own check airmen, except that of acting as a required flight crewmember in an air carrier flight operation. For example, APM's and PPM's must be granted the same authority to operate the controls of flight simulators and flight training devices as the operator grants to its own check airmen and instructors.

4. _____ (air carrier name) will provide APM and PPM candidates with the same training that _____ (air carrier name) provides to its own flight crewmembers and check airmen to meet initial qualification requirements and recurrent training requirements. APM's and PPM's must complete this training to the mutual satisfaction of _____ (air carrier name) and the POI. Should an APM or PPM fail to progress through training satisfactorily, _____ (air carrier name) will provide the same remedial training that is provided to its own flight crewmembers. Should the APM or PPM continue to fail to reach or maintain a mutually satisfactory standard, the POI shall meet with a designated airline official to resolve the matter. The minimum required training includes the following:

- Basic indoctrination training
- Initial equipment training (includes type rating and flight engineer rating, if required)
- Any special training (such as Category II (CAT II) or Category III (CAT III) procedures, if required)
- Check airman training for the pilot and flight engineer position, if required

5. The APM or PPM candidate (in lieu of operating experience (OE)) must observe, from the cockpit, a minimum of three _____ (air carrier name) line flights. These flights must include two complete revenue trip patterns and involve no less than 3 days. These flights will require that the APM or PPM remain with the aircrew throughout the trip pattern to become familiar with a cross-section of line operations. The FAA Program Tracking and Reporting Subsystem (PTRS) Data Sheet completed for these flights will show in the comments section, "Participating in Aircrew Program Manager or PPM Training with _____ (air carrier name) in the _____ (specify airplane)."

6. The APM or PPM is eligible for advanced simulation provisions of part 121, Appendix H, and may receive the certification/proficiency check in a level C or D simulator.

7. The APM or PPM will complete airplane currency, annual recurrent training, and proficiency checks on the same basis as that administered to the airline's PIC's and check airmen (all checks) as follows:

A. Two hours of simulator flight training time as PIC each calendar quarter. This simulator training time will be provided by _____ (air carrier name) at their expense and may be provided in a "dry" or "wet" status. If the air carrier is unable to provide the APM or PPM with the required simulator time, the air carrier must provide an airplane, at the operator's expense, to accomplish the required training. For additional airplanes, the APM shall maintain currency for the assigned category, class, and equivalent grouping of airplane. Coordination for scheduling this training will be handled by the respective FAA APM or PPM and _____ (air carrier name).

B. Two hours of flight simulator time annually for warm-up practice as PIC, or 4 hours of flight simulator time annually for warm-up practice as PIC and flight engineer in three-crewmember airplane. This warm-up simulator time is required prior to the APM or PPM receiving the annual proficiency check. This simulator warm-up period will be provided by _____ (air carrier name) at their expense between the hours of 0600 and 2200 and may be provided in a "dry" or "wet" status. This warm-up simulator training will satisfy the quarterly requirement for the calendar quarter in which it is provided.

C. A 2-hour simulator period will be made available for administering the APM's or PPM's PIC proficiency check or recurrent flight training; or, if appropriate, annual flight check or recurrent flight training. The FAA may provide an inspector or the operator may provide a check airman to administer the required proficiency check. _____ (air carrier name) will provide qualified crewmembers to fill other required crew positions, as appropriate. This simulator time will be provided by _____ (air carrier name) at their expense.

D. When _____ (air carrier name) training program incorporates single visit training under an exemption to the Regulations or an Advanced Qualification Program (AQP) under Special Federal Aviation Regulation (SFAR) 58, the APM/PPM will participate under that training program. Simulator time will be provided by _____ (air carrier name) at their expense.

E. Sufficient simulator time to maintain 90-day landing currency. This simulator time will be provided by the airlines at their expense.

F. Each APM will receive annual recurrent ground training on the same basis as that administered to _____ (air carrier name) pilots. This training will be provided by _____ (air carrier name) at their expense.

8. APD and DFEE candidates must be nominated by _____ (air carrier name). An individual designated as an APD/DFEE may have APD/DFEE authority canceled or terminated, if that individual becomes unacceptable to the POI or to _____ (air carrier name). An APD/DFEE candidate must meet the following minimum qualifications:

- Be employed by _____ (air carrier name)
- Possess the appropriate airman certificate, class rating and, if appropriate, type rating
- Qualify as an FAA-approved pilot or flight engineer check airman in the airplane in which the APD/DFEE candidate is to perform APD/DFEE duties
- Have served as a Check Airman for a minimum of 1 year before designation as an APD/DFEE, subject to reduction at the discretion of the POI (Check airman experience in other types of airplane and with other operators may be credited.)
- Possess above average knowledge, ability, and experience
- Have a good record of compliance with the Regulations (isolated and unrelated violations or incidents not disqualifying)

9. The APD/DFEE candidate will submit a complete statement of professional qualifications on FAA Form 8710-6, "Examiner Designation and Qualification Record." The APM shall review the candidate qualifications and, will recommend to the POI that the candidate be designated as an APD/DFEE, when appropriate. An APD/DFEE selection must be mutually agreed upon by the APD/DFEE, the APM, and _____ (air carrier name).

10. An APD/DFEE will be authorized to perform airman certification on only one type of airplane. This authority is limited to the certification of graduates of _____ (air carrier name)' FAA-approved training program who are employed as flight crew members by _____ (air carrier name).

11. All certification activity conducted by the APD/DFEE shall be limited to the privileges of the APD's/DFEE's airman certificate and the APD's/DFEE's Certificate of Authority in the assigned airplane. The APD may conduct pilot oral examinations and flight tests for: (1) Airline Transport Pilot (ATP) certificates and (2) for category, class, and type ratings to be added to an ATP certificate. DFEE's may conduct: (1) oral examinations and (2) flight tests for flight engineer certificates and for the addition of a class rating to a flight engineer certificate.

A. An APD/DFEE may not conduct an evaluation of any applicant that the APD/DFEE has instructed for the certificate or rating to be issued unless specifically authorized by the POI or by the APM. In addition, an APD/DFEE may not conduct FAA written tests, special medical evaluations, tests for waivers, or any test for competency under Title 49, U.S.C. section 44709 (formerly the FAA Act of 1958). Any privileges and limitations listed on the certificate of authority issued outside an ADE program do not apply to the ADE program.

B. The APM shall train and evaluate the prospective APD/DFEE on APD/DFEE duties and responsibilities. The APD shall be trained and evaluated in at least the following areas:

- The knowledge, abilities, and skill requirements for the original issuance of the ATP certificate and applicable added type ratings (or Flight Engineer Certificate and added class rating, as applicable)
- The procedures, methods, and techniques associated with administering the required certification tests
- The responsibilities, authority, and limitations under the Regulations and FAA Order 8400.10, "Air Transportation Operations Inspector's Handbook"
- The usage of FAA forms and job aids associated with the particular job function
- The administrative procedures and supervisory relationships that exist in the ADE program
- The understanding that _____ (air carrier name) policies, business matters, union loyalties, and seniority issues with _____ (air carrier name) are not relevant when certificating an airman
- After formal training, an APD/DFEE candidate must observe the APM conduct a complete oral test, flight test, and the necessary briefings, as well as the completion of the certificate paperwork; and vice versa
- The APM shall conduct regular meetings with the APD/DFEE for the purpose of maintaining an effective working relationship and clarifying any problem areas, and shall attend crewmember safety meetings held by _____ (air carrier name). (The APM shall ensure that required supplies and materials are available to the APD/DFEE.)

The following signatures signify agreement to this memorandum of understanding and its contents:

_____

_____

_____

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[PAGES 5-273 THROUGH 5-288 RESERVED]

CHAPTER 6. AIRCREW DESIGNATED EXAMINER PROGRAM

SECTION 3. AIRCREW PROGRAM DESIGNEES AND DESIGNATED FLIGHT ENGINEERS IN AN AIRCREW DESIGNATED EXAMINER PROGRAM

469. GENERAL. This section contains information and guidance to be used by certificate managers, Principal Operations Inspectors (POI) and inspectors concerning Aircrew Program Designee (APD) and Designated Flight Engineer Examiner (DFEE) responsibilities and the selection, training, supervision, and administrative control of APD's/DFEE's in an ADE program.

471. PRIVILEGES OF AIRCREW DESIGNATED EXAMINERS—ADE/DFEE. All certification conducted by an APD/DFEE shall be limited to the privileges of the APD's airman certificate, the APD's Certificate of Authority, the APD's Letter of Authority, one certificate type (pilot or flight engineer), and one aircraft type.

A. *Privileges.* An Aircrew Program Designee (APD) is authorized to perform airman certification in one type of aircraft for an operator's pilots who have been trained under the operator's Federal Aviation Administration (FAA)-approved training program. A Designated Flight Engineer Examiner (DFEE) in an ADE program is authorized to perform airman certification for an operator's flight engineer candidates who have been trained under the operator's FAA-approved training program.

B. *Limitations.*

(1) Evaluation of any applicant by an APD/DFEE when the examiner has instructed that student during the latter half of the candidate's training, or when the examiner has recommended the applicant, is not recommended and must be approved by the POI on a case-by-case basis. Instruction during the initial phase of training will not disqualify the APD/DFEE from conducting an evaluation of an applicant.

(2) APD's may not conduct FAA written tests, special medical evaluations, tests for waivers, or any test for competency under Title 49 United States Code (U.S.C.), § 44709 (formerly § 609a of the Federal Aviation Act of 1958). Applicants for such tests shall be referred to the Aircrew Program Manager (APM) or the local district office. Flight Standard District Office/Certificate Management Office (FSDO/CMO)

C. *Designation as an Examiner Outside of an Aircrew Designated Examiner (ADE) Program.* An individual's designation as an APD does not prevent the individual from obtaining a designation as an examiner in another program or capacity. When an APD holds a designation, the privileges and limitations that may be exercised outside of the ADE program must be specified on the Certificate of Authority and Letter of Authority. The privileges and limitations listed on the Certificate of Authority issued outside an ADE program do not apply to the ADE program.

473. SELECTION OF AN APD/DFEE.

A. *Eligibility Requirements.* The following apply to the selection of APD and DFEE candidates:

- Must be employed by the operator either full time, part time, or under contract to the operator
- Must possess the appropriate airman certificate, class rating, and type rating, if applicable
- Must be an FAA-approved pilot (or flight engineer, as applicable) simulator qualified proficiency check airman for the operator in the aircraft in which the APD/DFEE candidate is to perform examiner duties. Must also be an FAA-approved line check airman-all seats and proficiency check airman-airplane for the operator in the aircraft in which the APD candidate is to perform examiner duties in an aircraft
- Should have served as a check airman for a minimum of one year (preferably six months as a proficiency check airman) before designation as an APD/DFEE (Check airman experience in other types of aircraft and in service with other operators may be credited. Crediting of past experience, including length of time and type of check airman, is at the discretion of the POI and APM.)
- Must possess an above-average level of knowledge, ability, and experience
- Must have a good record of compliance with the Federal Aviation Regulations (FAR) (iso-

lated and unrelated violations or incidents are not disqualifying)

B. *Evaluation of Qualifications.* The APD/DFEE candidate shall submit a complete statement of professional qualifications on FAA Form 8710-6, "Examiner Designation and Qualification Record." The APM shall review the qualifications to determine whether the candidate meets the requirements and standards for an APD/DFEE designation. If the candidate is eligible, the Aircrew Program Manager (APM) may recommend to the POI that the candidate be designated as an APD/DFEE. An APD/DFEE selection must be agreed upon by the APM, the POI, and the operator.

475. APD TRAINING AND EVALUATION. The APM shall train and evaluate the prospective APD/DFEE on APD duties and responsibilities as follows.

A. *Training.* Inspectors should ensure that the APD/DFEE is trained and evaluated in at least the following areas:

- The knowledge, ability, and skill requirements for the original issuance of the ATP certificate and added ratings, as applicable (Flight Engineer certificate and added rating for DFEE candidates)
- The procedures, methods, and techniques associated with administering the required certification tests
- The responsibilities, authority, and limitations of an examiner under the FAR and this handbook
- The use of FAA forms and job aids associated with the particular APD function
- The administrative procedures and supervisory relationships that exist in an ADE program

NOTE: The POI and the APM's shall stress to examiner candidates that in performing their duties as an APD/DFEE, they are representatives of the Administrator and responsible to the Administrator. Prospective APD/DFEE must understand that company politics, economics, union loyalties, and seniority issues are not relevant when certificating airmen.

B. *Evaluation.* After formal training, an APD/DFEE candidate shall observe the APM or, at the POI's discretion, another inspector or examiner, in conducting a complete oral test, flight test, the necessary briefings, and the completion of the certification paperwork. The APM shall then observe and evaluate the candidate in conducting at least one complete oral test and flight test (simulator and airplane, if applicable), including the necessary briefings and certification paperwork for the certificate or added rating involved.

477. SUPERVISION AND ADMINISTRATIVE CONTROL OF APD's The APM assigned to a particular aircraft type is responsible for the supervision of APD's and DFEE's who conduct airman certification activities for that aircraft type. Inspectors should evaluate the supervisory and administrative process, taking into account the following:

A. *Working Relationships.* An APM observes and counsels APD's and DFEE's. An APM should emphasize to APD's and DFEE's appropriate methods for handling applicants; for maintaining desired test standards; and for completing and processing certification and Program Tracking and Reporting Subsystem (PTRS) paperwork. An APM should endeavor to maintain a working relationship with each APD and DFEE which promotes the examiners' confidence in the performance of their duties and in their interactions with their assigned APM. An APM shall conduct regular meetings with the program's APD's and DFEE's for the purpose of maintaining these effective working relationships. During the APD meetings, a close and continuing dialogue for the clarification of problem areas should be developed. Special meetings should be held when there is any change to FAA airman certification requirements, policies, or procedures affecting the particular APD/DFEE or the program in general. An APM should attend crewmember safety and standardization meetings held by the operator.

B. *APD/DFEE Supplies and Materials.* An APM shall ensure that APD's and DFEE's have continuing access to the following materials, including current amendments and additional supplies, as needed:

- Volume 5 of FAA Order 8400.10, "Air Transportation Operations Inspector's Handbook"
- All appropriate job aids
- FAA Form 8710-1, "Airman Certification and/or Rating Application"(Pilot)
- FAA Form 8400-3, "Application for an Airman Certificate and/or Rating" (Flight Engineer and Aircraft Dispatcher)
- FAA Form 8060-4, "Temporary Airman Certificate"
- FAA Form 8060-5, "Notice of Disapproval of Application"
- FAA Form 8000-36, "Program Tracking and Reporting Subsystem (PTRS) Data Sheet,"

which may be overprinted to facilitate standardization of data entered into the system.

479. CERTIFICATE-HOLDING DISTRICT OFFICE (CHDO) APD ADMINISTRATIVE FILES. The CHDO shall maintain a file on each APD. Inspectors shall ensure that the CHDO file contains the following documents for each APD:

- FAA Form 8710-6, "Examiner Designation and Qualification Record" for original issuance and each renewal
- FAA Form 8430-9, "Certificate of Authority" for original issuance and each renewal
- "Letter of Authority" for original issuance and each renewal or change of authority or limitations
- FAA Form 8000-5, "Certificate of Designation"
- Documentation of the candidate's airman certificates and any history of accidents, incidents or enforcement action contained in the Flight Standards Information System (FSIS)
- A summary of annual activity from the PTRS for each renewal (replaces FAA Form 8000–5, "Airman Certification Log")
- Periodic surveillance reports (in PTRS)
- Any pertinent correspondence

481. PROCESSING INITIAL APD DESIGNATIONS.

A. *APM Responsibilities.* When processing an initial APD/DFEE designation, the APM shall ensure that all requirements for designation have been met. The APM shall then prepare all of the necessary, additional paperwork. The APM shall complete the back of FAA Form 8710-6, "Examiner Designation and Qualification Record," and sign the space labeled, "Inspector's Signature." The APM shall enter the words, "Aircrew Program Designee" or "Designated Flight Engineer Examiner" and the airplane type in the space labeled, "Type of Designation" under the "Regional Office Action" block. The APM shall record the APD designation number under the space labeled, "Certificate of Authority Issued" in the space titled, "No." The expiration date is the last day of the month that is one year from the date of designation. The "DO to Serve Under" space should be left blank by the APM. The APM should cross-out the word "Regional" in the block titled, "Regional Office Action" and substitute the word "District" for the word "Regional" (see figure 5.5.3.1.).

B. *POI Approval.* The POI shall indicate approval by completing the first line of the block labeled, "District Regional Office Action" on FAA Form 8710-6, "Examiner Designation and Qualification Record" and then sign in the appropriate space. POI's shall also sign the FAA Form 8000-5, "Certificate of Designation," FAA Form 8430-9, "Certificate of Authority" (see figures 5.5.3.2. and 5.5.3.3.) and the "Letter of Authority." The originals of these forms shall be issued to the APD and copies shall be retained in the APD's file in the CHDO.

C. *APD Designation Numbers.* Examiner Designation Numbers. For APD's and DFEE's the airman's certificate number, coupled with the applicable four character designator for the operator, may be used in all instances when an Examiner Designation Number may be called for. (Example: 123456789DALA for an APD/DFEE at Delta Airlines) The four character suffix will allow for differentiation between programs when there is more than one ADE program within a CHDO.

483. RENEWAL OF APD DESIGNATIONS. APD designations must be renewed every twelve calendar months as follows.

A. *Renewal Date.* The renewal date is one month prior to the expiration date. An APD/DFEE may not conduct certification tests after the expiration date.

B. *Renewal Application.* Refer to volume 5, chapter 5, section 2, paragraph 391 of this handbook for renewal procedures. In order to renew a designation, an APD must submit the following documentation to the APM:

- The expiring FAA Form 8430-9, "Certificate of Authority"
- A newly-completed FAA Form 8710-6, "Examiner Designation and Qualification Record"
- Evidence of having attended, during the past twelve calendar months, at least one APD safety meeting or a briefing conducted by the APM, (such as a notation on the back of the FAA Form 8430-9, "Certificate of Authority," signed by the APM)

C. *Annual Observation.* At least once within the year preceding an APD's renewal, the examiner must be observed conducting a complete certification. The observation is made by the APM or by another appropriately-rated inspector designated by the APM or POI. Preferably, this observation should take place within the 120-day period before the current designation expires (PTRS code 1672). To complete the

observation, the APD shall conduct at least one oral examination and one simulator (and aircraft, if applicable) evaluation. When an examiner designation is renewed, the day and month will normally remain the same and only the year will be changed.

NOTE: If it is acceptable in an operator's approved training program for the entire flight check to be accomplished in a simulator, then the APM is not required to observe the APD in the aircraft for a renewal.

D. *APM and POI Responsibility.* Before renewing an APD designation, the APM and POI shall determine whether the APD's services have been satisfactory, whether the APD's level of activity warrants a redesignation, and whether the APD's services continue to be needed. The examiner's level of activity may be determined from the PTRS.

E. *Processing a Renewal.* The administrative steps for renewal are the same as those outlined for original designation (see paragraph 481).

485. AMENDMENT OF APD DESIGNATIONS. An APD may be issued only one FAA Form 843–9, "Certificate of Authority." An APD's examining authority shall normally be cancelled when the APD enters transition training on a new aircraft type. The POI may designate a former APD, provided the following actions have been completed:

A. The APD must have completed the operator's approved pilot-in-command (PIC) or flight engineer ground and flight training for the new aircraft. The APM must determine whether the designee has accumulated sufficient experience on the new aircraft to accumulate an above-average level of knowledge of its systems and operations.

B. The APD must have completed the operator's check airman training and be approved as a proficiency check airman for the new aircraft.

C. The APM for the new aircraft must hold an interview with the APD to establish an appropriate working relationship and review the administrative processing (paperwork/documentation) procedures for certification activities.

D. The APM for the new aircraft must observe the APD conducting at least one complete oral examination and simulator (and aircraft, if applicable) evaluation, as appropriate to the certificate or type rating involved, on the new aircraft type.

E. The administrative steps for the issuance of the new designation shall be the same as those outlined for initial designation (see paragraph 481).

487. PROCESSING APD CERTIFICATION PAPERWORK. An APD shall forward the airman certification paperwork to the CHDO for review, processing, and transmittal to the Airmen Certification Branch, AFS-760. The paperwork shall be accepted and processed only by the CHDO and not by any other district office.

A. *APD Responsibilities.* An APD shall complete the airman certification paperwork in accordance with the requirements of chapters 1, 2, or 3 of this volume, as applicable. An APD shall complete the PTRS data sheets for each evaluation function conducted. An APD is responsible for the accurate, complete, and timely submission of certification paperwork. Satisfactory fulfillment of this responsibility is a condition for continued designation as an APD.

B. *APM Responsibilities.* An APM is responsible for training each APD in correct documentation procedures, and in remedial training, when required.

489. REVIEW OF APD DECISION. If an airman is dissatisfied with an APD's decision, the airman may appeal to an APM for a reevaluation. The airman must submit the appeal in writing and indicate the reasons for protesting the APD's decision. The APM shall review the matter and decide if reevaluation is warranted. If a reevaluation is granted, a new application must be completed, and the entire evaluation must be reaccomplished by an FAA inspector.

491. TERMINATION OF APD DESIGNATIONS. An APD designation may be terminated or canceled for cause by the POI at any time. Refer to volume 5, chapter 5, section 2 of this order for applicable procedures.

492.–502. RESERVED.

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observation, the APD shall conduct at least one oral examination and one simulator (and aircraft, if applicable) evaluation. When an examiner designation is renewed, the day and month will normally remain the same and only the year will be changed.

NOTE: If it is acceptable in an operator's approved training program for the entire flight check to be accomplished in a simulator, then the APM is not required to observe the APD in the aircraft for a renewal.

D. *APM and POI Responsibility.* Before renewing an APD designation, the APM and POI shall determine whether the APD's services have been satisfactory, whether the APD's level of activity warrants a redesignation, and whether the APD's services continue to be needed. The examiner's level of activity may be determined from the PTRS.

E. *Processing a Renewal.* The administrative steps for renewal are the same as those outlined for original designation (see paragraph 481).

485. AMENDMENT OF APD DESIGNATIONS. An APD may be issued only one FAA Form 843–9, "Certificate of Authority." An APD's examining authority shall normally be cancelled when the APD enters transition training on a new aircraft type. The POI may designate a former APD, provided the following actions have been completed:

A. The APD must have completed the operator's approved pilot-in-command (PIC) or flight engineer ground and flight training for the new aircraft. The APM must determine whether the designee has accumulated sufficient experience on the new aircraft to accumulate an above-average level of knowledge of its systems and operations.

B. The APD must have completed the operator's check airman training and be approved as a proficiency check airman for the new aircraft.

C. The APM for the new aircraft must hold an interview with the APD to establish an appropriate working relationship and review the administrative processing (paperwork/documentation) procedures for certification activities.

D. The APM for the new aircraft must observe the APD conducting at least one complete oral examination and simulator (and aircraft, if applicable) evaluation, as appropriate to the certificate or type rating involved, on the new aircraft type.

E. The administrative steps for the issuance of the new designation shall be the same as those outlined for initial designation (see paragraph 481).

487. PROCESSING APD CERTIFICATION PAPERWORK. An APD shall forward the airman certification paperwork to the CHDO for review, processing, and transmittal to the Airmen Certification Branch, AFS-760. The paperwork shall be accepted and processed only by the CHDO and not by any other district office.

A. *APD Responsibilities.* An APD shall complete the airman certification paperwork in accordance with the requirements of chapters 1, 2, or 3 of this volume, as applicable. An APD shall complete the PTRS data sheets for each evaluation function conducted. An APD is responsible for the accurate, complete, and timely submission of certification paperwork. Satisfactory fulfillment of this responsibility is a condition for continued designation as an APD.

B. *APM Responsibilities.* An APM is responsible for training each APD in correct documentation procedures, and in remedial training, when required.

489. REVIEW OF APD DECISION. If an airman is dissatisfied with an APD's decision, the airman may appeal to an APM for a reevaluation. The airman must submit the appeal in writing and indicate the reasons for protesting the APD's decision. The APM shall review the matter and decide if reevaluation is warranted. If a reevaluation is granted, a new application must be completed, and the entire evaluation must be reaccomplished by an FAA inspector.

491. TERMINATION OF APD DESIGNATIONS. An APD designation may be terminated or canceled for cause by the POI at any time. Refer to volume 5, chapter 5, section 2 of this order for applicable procedures.

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CHAPTER 8. AIRCRAFT NAVIGATOR CERTIFICATES

SECTION 1. GENERAL

625. APPLICABILITY. This chapter contains the necessary information, direction, guidance, and procedures to be used by inspectors and examiners for the conduct of aircraft navigator certification.

627. ELIGIBILITY. The eligibility requirements for an aircraft navigator are listed in subpart C of Federal Aviation Regulations (FAR) Part 63. Inspectors should have applicants submit the following documentation for the practical flight test:

- AC Form 8080-2, "Airman Written Test Report"
- Second-class medical certificate (issued within the last 12 months)
- Logbooks verifying flight time
- Evidence substantiating compliance with FAR § 63.55 or a statement of graduation from an aircraft navigator course

NOTE: An applicant who meets the special circumstances described in FAR § 63.57(b) does not need to present Advisory Circular (AC) Form 8080-2 before taking the navigator practical flight test.

629. APPLICATION PHASE. The inspector should have the applicant complete an Federal Aviation Administration (FAA) Form 8400—3, "Application for an Airman Certificate and/or Rating." This form includes the application for the flight test. The "Instructor's Recommendation" block in section 7 of the form does not have to be completed if the inspector or examiner evaluating the applicant determines that the applicant meets the requirements of FAR §§ 63.51, 63.53, and 63.55.

631. INDIVIDUALS QUALIFIED TO CONDUCT AIRCRAFT NAVIGATOR FLIGHT TESTS. The aircraft navigator flight test must be conducted by an operations inspector who currently holds an aircraft navigator certificate. Regional offices that do not have qualified inspectors should contact Flight Standards District Office (FSDO)-13 in the Western Pacific Region or FSDO-15 in the Eastern Region for assistance.

633. CONDUCT OF WRITTEN TEST. Inspectors must have an applicant take the written test before that applicant can be administered the flight test. The exception to this process would be when an applicant fits into the circumstances described in FAR § 63.57(b).

635. CONDUCT OF ORAL TEST.

A. *Purpose.* The purpose of the oral test is for the inspector to determine the applicant's familiarity with the equipment to be used during the flight test. The inspector should not instruct the applicant on the use of the equipment.

B. *Content.* During the oral test, the inspector should examine the applicant on basic navigational techniques. The applicant should demonstrate to the inspector that the applicant has adequate knowledge of air communications and navigation regulations relating to aircraft position reporting and variances from planned flight routes. The inspector should also determine if the applicant is familiar with the organized track system in the North Atlantic and Pacific composite separation schemes.

637. CONDUCT OF FLIGHT TEST. The inspector may conduct the flight test on a scheduled or nonscheduled flight. If possible, the inspector should have the flight test conducted over water. Passengers, cargo, or both, may be carried during the flight test if a fully qualified aircraft navigator is a flight crewmember and if the flight route requires an aircraft navigator. The inspector must ensure that the applicant has provided a suitable, properly equipped aircraft for accomplishing the flight test, and, finally during the test, the inspector must measure the applicant's skill in the following:

- Flight planning
- Dead reckoning
- Celestial navigation
- Raw data LORAN C navigation
- Use of absolute altimeter

NOTE: Navigational systems which have the capability of performing tasks such as automating fixes and estimating ground speed should not be used during the flight test.

639. DISPOSITION AND ISSUANCE OF FAA FORM 8060-4, "TEMPORARY AIRMAN CERTIFICATE" OR FAA FORM 8060-5, "NOTICE OF DISAPPROVAL OF APPLICATION."

A. *Unsuccessful Applicant.* If an applicant is not successful in completing the written or oral test, the inspector shall issue the applicant an FAA Form 8060–5, "Notice of Disapproval of Application." The inspector shall then send a copy of the FAA Form 8060–5 and a copy of the applicant's FAA Form 8400-3, "Application for an Airman Certificate and/or Rating," to the Airman Certification Branch, AFS–760, in Oklahoma City.

B. *Successful Applicant.* If the applicant has successfully completed the written test and the flight test, the inspector shall issue the applicant an FAA Form 8060-4, "Temporary Airman Certificate."

(1) After the applicant has received notice of having satisfactorily completed the written test, the applicant should present the following documents to the inspector:

- FAA Form 8400-3, "Application for an Airman Certificate and/or Rating"
- AC Form 8080-2, "Airman Written Test Report"
- FAA Form 8060-5, "Notice of Disapproval of Application," if applicable

(2) After the applicant has presented the documents, the inspector shall issue the applicant an FAA Form 8060-4, "Temporary Airman Certificate." The inspector must date the certificate with the date in which the applicant has satisfactorily completed all of the requirements for the certificate. The inspector shall then send a copy of the applicant's FAA Form 8060–4 to the Airman Certification Branch, AFS–760, in Oklahoma City.

NOTE: An applicant applying under the circumstances described in FAR § 63.57(b) who has satisfactorily completed the test, will not be issued a temporary certificate. In this case, the inspector should enter in Item 9 of FAA Form 8400-3 the following statement: "Application made under the provisions of FAR § 63.57(b). Temporary Airman Certificate not issued."

641. APPLICANTS UNDER 21 YEARS OF AGE. When an applicant, under 21 years of age, has successfully passed the written and flight tests for the aircraft navigator certificate, the inspector should issue the applicant a letter of aeronautical competency. The inspector should inform the applicant that the applicant should retain the original letter of aeronautical competency. Once the applicant has reached 21 years of age, the applicant may present the letter of aeronautical competency and a current second-class medical certificate and obtain an FAA Form 8060–4, "Temporary Airman Certificate." The inspector shall then forward the applicant's original letter of aeronautical competency, original FAA Form 8400–3, "Application for an Airman Certificate and/or Rating," and a copy of the applicant's FAA Form 8060–4 to the Airman Certification Branch, AFS–760, in Oklahoma City.

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CHAPTER 1. ACCIDENT AND INCIDENT INVESTIGATION AND REPORTING.

SECTION 3. INVESTIGATION OF A OCEANIC GROSS NAVIGATION AND OTHER ERRORS

61. GENERAL.

A. *Navigation Performance Concept.* The concept of navigation performance involves the precision that must be maintained for the assigned route and altitude within a particular area. Navigation performance is measured by the deviation (for any cause) from the exact centerline of the route and altitude specified in an air traffic control (ATC) clearance. This includes errors due to degraded accuracy and reliability of navigation equipment and/or the flightcrew's competence in using the equipment. Flightcrew competence involves both flight technical errors and navigation errors. Flight technical error is defined as the pilot's accuracy in controlling the aircraft as measured by how closely the aircraft's actual position matches the desired position. Standards of navigational performance vary depending on traffic density and the complexity of the routes flown. Aircraft operating in special use airspace must achieve the highest standards of navigation performance accuracy. Improvements in navigation accuracy benefit aviation through reductions in separation minimums and more cost-effective routing. Flights within the North Atlantic (NAT) minimum navigation performance specification (MNPS) airspace require that the aircraft have approved navigation performance capabilities and be authorized by the Administrator to perform such operations required by (Federal Aviation Regulations (FAR) § 91.705). This authorization includes all aspects of the expected navigation performance accuracy of the aircraft, navigation equipment, installation and maintenance procedures, and crew navigation procedures and qualifications. FAR Part 91, Subpart H, is applicable to all U.S.-certificated aircraft.

B. *MNPS Airspace Requirements for Operations in the NAT.* FAR Part 91, Appendix C, defines the limit of NAT MNPS airspace, the required navigation performance capabilities, and the ATC deviation authorizations. FAR § 91.703(a)(1) makes the flight rules contained in International Civil Aviation Organization (ICAO) Annex 2 binding for U.S. operators operating over the high seas. ICAO Annex 2 states that the aircraft "shall adhere to its current flight plan" and "when on an established ATS route, operate along the defined centerline of that route."

C. *Separation Minimums.* Separation minimums represent the minimum dimensions of a three-dimensional block of airspace assigned by ATC. Separation minimums establish the minimum lateral, vertical, and longitudinal distances used to separate aircraft, and represent the minimum level of overall navigation performance that can be accommodated at any time without jeopardizing safety. Any aircraft deviating by greater than one-half the separation minimums established for that operation has failed to meet the required level of navigation performance and to navigate to the degree of accuracy required for control of air traffic. Separation minimums for U.S. national airspace system operations can be found in Federal Aviation Administration (FAA) Order 7110.65, "Air Traffic Control." FAA Order 7110.83, "Oceanic Air Traffic Control," prescribes separation minimums in international oceanic airspace delegated to the United States by ICAO. ICAO Document 7030/3, "Regional Supplementary Procedures," prescribes separation minimums in international airspace.

63. TYPES OF INVESTIGATIONS. There are three types of navigation/altitude deviations to be investigated: gross navigation errors, altitude deviation errors, and erosion of longitudinal separation in excess of 3 minutes. Investigations to determine the cause(s) of these errors are conducted upon receipt of reports of navigation and altitude deviations and erosion of longitudinal separation. These reports are generated by domestic and foreign ATC units. Reports are forwarded to the appropriate flight standards district office (FSDO) or certificate management office (CMO), for civil aircraft, by the Flight Standards National Field Office (FSNFO), AFS-500. Military navigation errors are sent directly to the applicable military service by AFS-400. Inspectors must be aware that these investigations are not enforcement investigations, although the findings may result in initiation of enforcement investigations. Representatives from Flight Standards, Air Traffic, and the Gen-

eral Counsel's office have determined that, since a navigation error could occur for several reasons, it would be inappropriate to investigate errors in accordance with the guidelines for investigation of pilot deviations in accordance with the geographic unit concept as contained in FAA Order 8020.11A, "Aircraft Accident and Incident Notification, Investigation, and Reporting," and also, FAA Order 7110.83B, "Monitoring of Navigation/Altitude Performance in Oceanic Airspace."

A. *Reasons for Investigations.* The cause(s) of reported navigation/altitude deviations are investigated for numerous reasons. These include promotion of aviation safety, the necessity of ensuring safe and economic flight, and U.S. compliance with international agreements as a member of ICAO. The data gathered during these investigations is used in the risk modeling process conducted by the FAA Technical Center in Atlantic City, NJ, and can lead to a reduction of separation minimums and availability of more economic flight routes in heavily used airspace.

B. *Timeliness of Investigations.* Investigation of navigation/altitude deviation reports should begin promptly to ensure the availability of evidence needed to establish the cause(s) of the deviation. The nature and extent of the investigation will depend upon factors such as the status of the equipment at the time of the deviation, crew qualifications for oceanic operations, and other factors.

65. REFERENCES, FORMS, AND JOB AIDS.

A. *References.*

- Advisory Circular (AC) 91-70, "Oceanic Operations"
- AC 91-RVSM, "Approval of Aircraft and Operations for Flight in Airspace Above Flight Level (FL) 290 Where a 1,000 Foot Vertical Separation Minimum is Applied"
- AC 90-92, "Guidelines for the Operational Use of Loran-C Navigation Systems Outside the U.S. National Airspace System (NAS)"
- Annexes to the Convention on Civil Aviation
- FAA Order 8400.10
- FAA Order 7110.83B, "Monitoring of Navigation/Altitude Performance in Oceanic Airspace."

B. *Forms.*

- FAA Form 8000-36, "Program Tracking and Reporting Subsystem Data Sheet"

C. *Inspector Work Sheets.*

- Oceanic Navigation Error Report (ONER) (figure 7.1.3.1.)
- ONER Supplemental Information Record (figure 7.1.3.2.)
- Oceanic Altitude Deviation Report (OADR) (figure 7.1.3.1.)
- OADR Supplemental Information Record (figure 7.1.3.3.)
- Investigative Report-Erosion of Longitudinal Separation Worksheet (figure 7.1.3.4.)
- Navigation Error Report for Omega-Equipped Aircraft (figure 7.1.3.5.)

67. PROCEDURES AND RESPONSIBILITIES.

A. *FSNFO Responsibilities.* The FSNFO, AFS-500, will send an ONER, OADR, or an erosion of longitudinal separation report to the FSDO or CMO best suited to investigate the deviation. If the investigation reveals that a FAR violation has occurred, that office will also be responsible for initiating and completing an enforcement investigation report. The FSNFO will also be responsible for the following:

- Determining the appropriate office (FSDO/CMO) to investigate the reported deviation, if it involves a civil aircraft
- Coordinating with the appropriate FSDO and regional office as required
- Reviewing completed investigations to ensure that the findings are correct and that appropriate action was taken
- Forwarding a copy of the completed report to the Technical Programs Division, AFS-400, within 10 days of receipt

B. *Regional Office Responsibilities.* Regional Flight Standards divisions shall:

- Appoint an individual to act as focal point within that region for matters pertaining to oceanic operations
- Monitor investigations conducted within that region and ensure that report investigations are completed and the findings are recorded on the prescribed forms, within 45 days after a deviation occurrence
- Review actions proposed by FSDO's in that region to prevent recurrence of navigation errors, altitude deviations, erosion of longitudinal separation

- Coordinate follow-up action with FSDO's and the FSNFO, as necessary. Forward the completed investigation, with attachments, to AFS–500

C. *FSDO/CMO Responsibilities.* Upon receipt of a report, the FSDO's/CMO's shall:

- Contact the appropriate ATC unit and obtain all available flight data within 15 days of the deviation's occurrence
- Contact the aircraft operator and conduct an investigation
- Establish the cause and/or factors contributing to the deviation
- Complete the appropriate supplemental information record (figure 7.1.3.3. and 7.1.3.4.)
- Take action as necessary to prevent recurrence of the deviation and determine if remedial training, counseling, administrative action, equipment replacement, or enforcement action is the most appropriate course of action and proceed accordingly. If the air carrier has an internal publication for its pilots, ensure that an article is published to educate other pilots
- Complete the Flight Standards portion of the deviation report, including appropriate attachments
- Forward a copy of the completed package to the regional flight standards division (RFSD)
- Complete the PTRS entry
- Notify the FSNFO when the investigation is completed and entered in the PTRS system (within 45 days of the deviation occurrence)

69. ONER/OADR REPORT INVESTIGATION PROCEDURES.

A. *FSDO Report Investigation.* Upon receipt of an ONER or OADR, inspectors should familiarize themselves with Items 1-16 (figure 7.1.3.1.). For either an ONER or an OADR, the inspector must complete the following tasks:

(1) Open a PTRS record of the investigation using activity code 1712. Enter the report number assigned by the FSNFO in the National Use field.

(2) Obtain all available flight information, relative to the flight under investigation, from ATC.

(3) Contact the operator and obtain the information needed to complete the investigation, establish the cause, and identify any contributing factors within 45 days. Inspectors should complete the appropriate supplemental information record (figure 7.1.3.2., 7.1.3.3., or 7.1.3.4.).

NOTE: Do not use FAA Form 8020-5, Aircraft Incident Record, or other such forms to report supplemental information for this task.

B. *ONER Report Completion.* Inspectors should complete Items 17-23 on the ONER report form (figure 7.1.3.1.) and the items listed on the ONER Supplemental Information Record (figure 7.1.3.2.).

(1) In Item 17, Operator/Crew Identification and Remarks, enter any operator or crew comments that may identify factors that resulted in or contributed to the navigation error.

(2) In Item 18, Was the Use of Special Use Airspace Authorized? i.e., Does the air carrier have the appropriate operations specifications.

(3) In Item 19, Cause of Deviation, indicate the most likely cause of the navigation error as determined by the investigation and analysis of the data gathered.

(4) In Item 20, Investigator's Comments, record the investigator's findings and an analysis of the event. Include the number, manufacturer(s), and type(s) of long-range navigation equipment in use at the time of the event.

NOTE: If pilot error, expand the write-up to the maximum extent possible, so as to allow details of the events to be incorporated into future CRM training curriculum.

(5) In Item 21, Corrective Action Recommended or Initiated, enter any action taken with reference to equipment, procedures, or personnel to prevent recurrence of the deviation and improve performance. Enter any recommendations for action in reference to the authorization for operations in MNPS airspace, if pertinent. This section will determine what further action is required. Inspectors must determine if verification of equipment repair or replacement, remedial training or counseling, administrative action, or an enforcement investigation is the best disposition of the ONER. A recommendation may also be made for no further action. Completion of the investigation report does not require that the recommended corrective action be completed.

(6) In Item 22, Flight Standards National Field Office Assigned Report Number, enter the number assigned by the FSNFO.

(7) In Item 23, Attachments, check "yes" or "no" to indicate the additional information that is attached to the report.

(8) Complete the PTRS entry as described in paragraph 77 of this section.

C. *OADR Report Completion.* Inspectors should complete Items 17-23 on the OADR report (figure 7.1.3.1.) and the items listed on the OADR Supplemental Information Record (figure 7.1.3.3.).

NOTE: An OADR is often referred to as a Height Deviation Report, particularly by foreign governments.

(1) In Item 17, Operator/Crew Identification and Remarks, enter any operator or crew comments that may identify factors that resulted in or contributed to the navigation error.

(2) In Item 18, Was the use of Special Use Airspace Authorized

(3) In Item 19, Cause of Deviation, indicate the most likely cause of the altitude deviation as determined by the investigation and the analyses.

(4) In Item 20, Investigator's Comments, record the investigator's findings and an analysis of the event. Include the number, manufacturer(s), and type(s) of altimeter equipment in use at the time of the event.

NOTE: If pilot error, expand the write-up to the maximum extent possible, so as to allow details of the events to be incorporated into future CRM training curriculum.

(5) In Item 21, Corrective Action Recommended or Initiated, enter any action taken with reference to equipment, procedures, or personnel to prevent recurrence of the deviation and improve performance. Enter any recommendations for action in reference to the authorization for operations in MNPS airspace, if pertinent. This section will determine what further action is required. Inspector's must determine if an enforcement investigation, verification of equipment replacement, remedial training or counseling, or administrative action is the best disposition of the OADR. A recommendation may also be made for no further action.

(6) In Item 22, Flight Standards National Field Office Assigned Report Number, enter the number assigned by the FSNFO.

(7) In Item 23, Attachments, check "yes" or "no" to indicate the additional information that is attached to the report.

(8) Complete the PTRS entry as described in paragraph 77 of this section.

71. INVESTIGATE EROSION OF LONGITUDINAL SEPARATION.

A. *FSDO Procedures.* The FSNFO will forward reports of erosion of longitudinal separation to the appropriate FSDO or CMO. Upon receipt of a request to investigate an incident involving erosion of longitudinal separation, inspectors should contact the operators of both aircraft and obtain the information necessary to complete Part 2 of the Investigative Report–Erosion of Longitudinal Separation Investigation Worksheet (figure 7.1.3.4.). If an inspector determines that another FSDO or CMO can provide significant input to the investigation because of familiarity with either of the aircraft involved, the inspector should solicit the assistance of that office and record that fact in the Remarks section of Part 1 of the investigation worksheet. The majority of the information required to complete Part 1 of the investigation worksheet will have been provided by air traffic. FSDO/CMO investigations will require the inspector to obtain the information necessary to complete Part 2 and, if appropriate, Part 3 of the investigation worksheet.

B. *Completion of Part 2.* Inspectors should complete Part 2 of the investigation worksheet as follows:

(1) In Item 12, enter aircraft #1's home base or, in the case of air carriers, the CMO.

(2) In Item 13, enter aircraft #1's operator's name and address. Post office boxes should not be used as an address unless the inspector has exhausted all means to obtain a street address.

(3) Items 15 through 17 - repeat Items 12 through 14 for aircraft #2.

(4) In Item 18, record the type of special use airspace where the loss of longitudinal separation occurred, or enter "N/A."

(5) Item 19 - All details of the investigation should be included in this section and copies of any flight strips, weather reports or other data should accompany the submission of the report. Inspectors should request a copy of the flight strip from ATC and a recording of the oceanic clearance for each of the aircraft. If the first aircraft's position reports are consistent with its clearance, the second aircraft most likely caused the erosion of separation. This can be verified by comparing the second aircraft's position reports and clearance. Inspectors should note that erosion of separation, regardless of which aircraft caused the erosion, does not necessarily constitute cause for an enforcement investigation. During oceanic operations, individual aircraft may encounter the effects of a jet stream shift that does not affect other aircraft. When an inspector suspects this type of situation, it may be necessary to investigate all available weather data in determining the cause of the deviation.

(7) Complete the PTRS entry as described in paragraph 77 of this section.

C. *Completion of Parts 3A and 3B.* Part 3A should be completed only in the event that aircraft #1 experienced a partial or complete flight management system failure. Part 3B should be completed only in the event that aircraft #2 experienced a partial or complete flight management system failure. Since instructions for both parts are identical, only instructions for Part 3A are included in this paragraph.

(1) Item 20 - Inspectors should provide as much detail as possible about the failed unit(s). If more than one unit failed, each unit should be listed.

(2) Item 21 - As close an estimate as possible of the latitude and longitude of the aircraft at the time of equipment failure should be listed for each equipment failure.

(3) Item 22 - This requires only a "yes" or "no" answer.

(4) Item 23 - Time of failure should be entered in UTC and the date of failure entered in this block.

(5) Item 24 - Enter the estimated duration of equipment failure. If the equipment became operational prior to the end of the flight, enter the word "temporary" after the time entry. If the equipment failure was total (until the end of the flight), inspectors should attempt to obtain the name and location of the repair station and note this information in the Remarks section of Part 1.

(6) Item 25 - The time entered in this item should be the UTC when the aircraft departed the special use airspace. If the flight did not take place in special use airspace, enter "N/A."

(7) Item 26 - Enter the time in hours and minutes that the equipment failed while in special use airspace. If more than one unit failed, list time for each. If the flight was not in special use airspace, enter "N/A."

(8) Item 27 - If ATC was advised of the failure by the crew, enter the time ATC was advised. If multiple units failed, enter the time for each. If ATC was not advised, enter "not advised."

73. REPORT COMPLETION DIFFICULTIES. Numerous situations exist which may make it difficult or impossible for an inspector to determine ownership of an aircraft at the time of a deviation. As a general rule, inspectors should attempt to impress upon the owner of record that the owner should provide as much information as possible to prevent the possibility of any future liabilities resulting from illegal export, operating an unregistered aircraft in a foreign country, or other liabilities resulting from incidents or accidents by the current owner. If the current owner of an aircraft cannot be located, a certified letter should be sent to the owner, at the address of record. The letter should inform the owner that authorization for operation in special use airspace will be cancelled in 30 days unless the owner contacts the inspector and the matter is resolved. The following paragraphs provide examples of special situations that may be encountered, and include recommendations for resolving those situations:

A. *Change in Aircraft Ownership.* A U.S. owner sells an aircraft to a foreign national and refuses to give the inspector details regarding the sale, and the owner claims that deregistration papers were sent to the Aircraft Certification Branch in Oklahoma City, AFS-760. Change in an aircraft's ownership negates an aircraft's registration under FAR § 47.41. This applies regardless of whether the ownership change is domestic or international. If the previous owner is still the certificate holder at the time of a deviation, that owner should be advised of the liability implications of the new owner operating an unregistered aircraft. Every attempt should be made to obtain information about the new aircraft owner. Inspectors should advise the owner of the potential for future liability as noted above. If still unable to obtain cooperation, contact the regional oceanic operations focal point and AFS–500.

B. *Corporate Ownership of Aircraft.* An aircraft cited in a deviation report is found to be registered to a lending institution such as a bank or a savings and loan. Inspectors should contact the lending institution and advise them that an operational deviation has been reported and that it is necessary to contact the aircraft operator to possibly prevent legal action. If the institution is uncooperative, they too can be advised of the potential for future liabilities and enforcement action. If the inspector is still unable to determine the operator, notify the regional oceanic operations focal point and AFS-500.

C. *Sale to a Foreign Country.* An aircraft cited in a deviation report is found to have been sold to a foreign country. Inspectors should obtain as much detail as possible about the sale and return the information and deviation report to AFS-500 as soon as possible.

D. *Training Considerations.* Inspectors investigating deviations should be especially diligent in determining what type of international operations training the crew has received. If the training appears to be lacking in quality or content, the inspectors should consider surveillance of the training program

as a possible remedial action to prevent future deviations.

E. *Omega/VLF or GPS Equipped Aircraft.* Figure 7.1.3.5. is a sample of a form used by the U.S. Coast Guard and the Omega Association to provide information that will further their cooperative efforts to improve Omega navigation. Inspectors should encourage operators of Omega-equipped aircraft to provide this information during investigation of deviations by those aircraft. A loss of GPS signal shall also be documented. The information should become part of the investigation report.

75. EXAMPLES OF DEVIATION INVESTIGATIONS THAT REQUIRE ENFORCEMENT ACTION. While conducting investigations of navigation/altitude errors, inspectors should be alert for the following situations.

A. When applicable, ensure that the aircraft involved were authorized to operate in MNPS airspace in accordance with FAR § 91.705.

B. Ensure that the aircraft was equipped with the appropriate radio equipment in accordance with FAR § 91.511.

C. Ensure that the pilots have the proper qualifications to operate the navigation systems, which includes having the ability to monitor the progress of the flight and to resolve discrepancies between the navigation systems.

D. Determine if the following occurred:

(1) The aircraft was flown contrary to ATC instructions and in violation of FAR § 91.123. (ICAO Rule 3.6 Annex 2)

(2) The aircraft was flown off course in violation of FAR § 91.181. (ICAO Rule 3.6 Annex 2)

(3) The pilot was careless by inserting incorrect waypoints in the navigation system in violation of FAR § 91.13. (ICAO Rule 3.1 Annex 2)

(4) An emergency was declared, prior to or immediately after the event, such as an altitude deviation or a track deviation due to weather.

77. TASK COMPLETION.

A. *PTRS Entry.* Complete the PTRS entry in the normal manner, and include the following specific entries required for this task:

(1) Activity number: 1712

(2) In the National Use field, enter the FSNFO assigned report number.

(3) Under Miscellaneous in Section 1, identify the type of investigation using one of the following acronyms:

(a) "ONER" for oceanic navigation error report

(b) "OADR" for oceanic altitude

(c) "EOLS" for erosion of longitudinal separation

(4) In Section II, Personnel, list the names of the crewmembers and note their certificate numbers in the Remarks column.

(5) In Section III, Equipment, if equipment failure contributed to the deviation, list the equipment in this section.

(6) In Section IV, Comment Section, enter the following codes as appropriate:

(a) For an ONER, enter Primary/Key code A741

(b) For an OADR, enter Primary/Key code A729

(c) For a report of erosion of longitudinal separation, enter Primary/Key code A749

(7) Enter appropriate opinion code.

(8) In the Comment Text section, record the responses to all items on the appropriate report (ONER, OADR, erosion of longitudinal separation) in the order that those items appear on the report (for example, record the answers to Items 1 - 22 of an ONER report in order by number).

B. *Report Disposition.* After completing the PTRS entries, forward the complete investigation package, with attachments, to the regional office. The package should include the initial deviation report and any required supplemental information reports as identified on the appropriate checklist. Upon completion of the report, notify the FSNFO by the most expeditious means (cc:mail, fax, E-mail) by forwarding the report's FSNFO assigned report number, the PTRS record number for that report, and the date of completion.

79. TASK OUTCOMES. The following activities may be initiated:

A. Administrative action against an airman or certificate holder.

B. Remedial training or counseling of an airman.

C. An airworthiness or avionics inspector may inspect the aircraft to determine if defective equipment that caused the deviation has been repaired or

replaced, as appropriate, and to determine if the pilot made a malfunction report as required by FAR § 91.187.

D. Enforcement action may be initiated against an airman or certificate holder.

E. Future activities may include:

- Change in operations specifications
- Initiation of enforcement action

82.–98. RESERVED

FIGURE 7.1.3.1.
OCEANIC NAVIGATION ERROR REPORT/OCEANIC ALTITUDE DEVIATION REPORT

FROM: FAX: PHONE:

OCEANIC NAVIGATION ERROR REPORT/OCEANIC ALTITUDE DEVIATION REPORT (TO BE COMPLETED BY AIR TRAFFIC)
1. Gross navigation error report message ☐ Altitude deviation of 300 feet or more ☐ (Check one)
2. Reporting agency and local reporting number, if used
3. Date of occurrence
4. Time of occurrence (UTC)
5. Aircraft identification and operator (If military, provide call sign)
6. Aircraft type
7. ATC cleared route or track
8. Radar observed position (in latitude and longitude) and distance left or right of assigned route or track or observed* or reported** flight level or altitude (*Use observed if Mode C; **reported if pilot reported)
9. Assigned flight level or altitude
10. Crew comments when notified
11. Location where flight plan filed (For general aviation aircraft, insert the 4-letter ICAO location identifier. For air carrier aircraft insert the company or agency which filed the flight plan.)
12. Type of long-range navigation equipment in use
13. Did ATC advise operator of occurrence?
14. Remarks (anything which might assist in the investigation or analysis. For example, for ONER's, if time permits, ask the pilot if the aircraft is equipped with and using Omega, Loran C, or GPS. If so ask the pilot to identify the facilities in use if any ground-based NAVAID's are being used, the number of satellites used for navigation (if GPS), and any malfunction codes displayed by those stations)
15. Flight plan data. (Forward flight plan, if available. If the flight plan is not available, enter any available information to help locate the operator, such as identification of departure and arrival points.)

FIGURE 7.1.3.1.—Continued
OCEANIC NAVIGATION ERROR REPORT/OCEANIC ALTITUDE DEVIATION REPORT

TO BE COMPLETED BY FLIGHT STANDARDS
16. Addressee -- please acknowledge receipt.
17. Operator/crew identification and remarks (For military, provide call sign only)
18. Was the use of special use airspace authorized?
19. Cause of deviation
20. Investigator's comments
21. Corrective action recommended or initiated
22. Flight Standards National Field Office assigned report number
23. Attachments - Please indicate what additional information is attached to this report by circling "yes" or "no," as appropriate. • ONER/OADR supplemental information record* Yes No • Flight log Yes No • Waypoint notebook Yes No • ATC flight plan Yes No • Other (please identify) _____ **Copies of the ONER/OADR Supplemental Information Record are contained in: FAA Order 8700.1, Chapter 223. FAA Order 8400.10, Vol. 7, Chap. 1, Sect. 3.

FIGURE 7.1.3.1.—Continued
OCEANIC NAVIGATION ERROR REPORT/OCEANIC ALTITUDE DEVIATION REPORT

TO BE COMPLETED BY FLIGHT STANDARDS
16. Addressee -- please acknowledge receipt.
17. Operator/crew identification and remarks (For military, provide call sign only)
18. Was the use of special use airspace authorized?
19. Cause of deviation
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23. Attachments - Please indicate what additional information is attached to this report by circling "yes" or "no," as appropriate. • ONER/OADR supplemental information record* Yes No • Flight log Yes No • Waypoint notebook Yes No • ATC flight plan Yes No • Other (please identify) _____ **Copies of the ONER/OADR Supplemental Information Record are contained in: FAA Order 8700.1, Chapter 223. FAA Order 8400.10, Vol. 7, Chap. 1, Sect. 3.

FIGURE 7.1.3.2.—Continued
ONER SUPPLEMENTAL INFORMATION RECORD

11. PART 3 DETAILED DESCRIPTION OF INCIDENT
Please provide an assessment of the actual track flown by the aircraft and the cause(s) of the deviation. Continue on a separate sheet of paper, if necessary.

12. PART 4 TO BE COMPLETED IN THE EVENT OF PARTIAL OR COMPLETE NAVIGATION EQUIPMENT FAILURE				
	INS	OMEGA	GPS	OTHER (Specify)
Indicate the number of units that failed				
Estimated latitude/ longitude at time of eqipment failure				
Time of failure				
Estimate duration of equipment failure				
Time of exit from special use airspace (if applicable)				
Duration of failure in special use airspace (if applicable)				
Time ATC was advised of failure				

Investigator	Date	Routing Symbol

FIGURE 7.1.3.3.
OADR SUPPLEMENTAL INFORMATION RECORD

PART 1 GENERAL INFORMATION
1. Flight Standards National Field Office record number _____ PTRS report number _____
2. Operator's name and address
3. Aircraft registration, model/series, and home base
4. Position (latitude & longitude)
5. Did flightcrew declare an emergency?
6. Radar unit observing deviation
7. Type of special use airspace where deviation occurred
8. Letter of Authorization number (if applicable)
9. PIC's name
10. PIC's address
11. PIC's certificate number Certificate type
12. Separation minimum of airspace where deviation occurred (circle one) 1,000 ft. 2,000 ft.
13. Was aircraft CAS or TCAS equipped? (circle one) Yes No

14. PART 2 AIRCRAFT ALTIMETERS				
Check or enter data as appropriate. This part is not required if an operational malfunction caused the deviation.				
Number and type	Primary	#2	#3	#4
Calibration date				
Check unit coupled to encoder				
Manufacturer				
Check unit coupled to autopilot				

Investigator	Date	Routing Symbol

FIGURE 7.1.3.3.—Continued
OADR SUPPLEMENTAL INFORMATION RECORD

15. PART 3 DETAILED DESCRIPTION OF INCIDENT
Please provide an assessment of the actual track flown by the aircraft and the cause(s) of the deviation. Continue on a separate sheet of paper if necessary.

16. PART 4 TO BE COMPLETED IN THE EVENT OF PARTIAL OR COMPLETE ALTIMETER FAILURE				
	PRIMARY	#2	#3	#4
Indicate the number of units that failed				
Estimated latitude/ longitude at time of equipment failure				
Time of failure				
Estimate duration of equipment failure				
Time of exit from special use airspace (if applicable)				
Duration of failure in special use airspace (if applicable)				
Time ATC was advised of failure				

Investigator	Date	Routing Symbol

FIGURE 7.1.3.4.
INVESTIGATIVE REPORT - EROSION OF LONGITUDINAL SEPARATION WORKSHEET

PART 1
1. Erosion of longitudinal separation report
2. Reporting agency
3. Date
4. First aircraft identification and operator
5. Aircarft type
6. Mach number/position/time/altitude
7. Second aircraft identification and operator
8. Second aircraft type
9. Match number/position/time/altitude
10. Crew comments when notified (if applicable)
11. Remarks

Investigator	Date	Routing Symbol

FIGURE 7.1.3.4.—Continued
INVESTIGATIVE REPORT - EROSION OF LONGITUDINAL SEPARATION WORKSHEET

PART 2 GENERAL INFORMATION
12. Aircraft #1 home base
13. Operator's name and address
14. Letter of Authorization number (if applicable)
15. Aircraft #2 home base
16. Operator's name and address
17. Letter of Authorization number (if applicable)
18. Type of special use airspace where deviation occurred
19. Please provide an assessment of the actual track flown by the aircraft and the cause(s) of the deviation. Continue on a separate sheet of paper, if necessary.

Investigator	Date	Routing Symbol

FIGURE 7.1.3.4.—Continued
INVESTIGATIVE REPORT - EROSION OF LONGITUDINAL SEPARATION WORKSHEET

PART 2 GENERAL INFORMATION
12. Aircraft #1 home base
13. Operator's name and address
14. Letter of Authorization number (if applicable)
15. Aircraft #2 home base
16. Operator's name and address
17. Letter of Authorization number (if applicable)
18. Type of special use airspace where deviation occurred
19. Please provide an assessment of the actual track flown by the aircraft and the cause(s) of the deviation. Continue on a separate sheet of paper, if necessary.

Investigator	Date	Routing Symbol

FIGURE 7.1.3.5.
NAVIGATION ERROR REPORT FOR OMEGA/GPS-EQUIPPED AIRCRAFT

1. Details of aircraft and reported error
Name of operator
Aircraft identification
Date/time of observed error
Flight level
Position (latitude/longitude)
Approximate cross-track deviation (NM)
2. Was Omega/GPS being used as the primary means of navigation and steering guidance?
3. Do you consider failure of, or difficulty with, the Omega system as a contributory cause of the deviation? If not, do not complete items 5-10.
4. Manufacturer of Omega/GPS equipment, type of equipment, most recent modification date.
5. Give details of cleared track within NAT oceanic airspace.
6. Give details of any problems experienced with Omega, together with the approximate geographic location.
7. Give details of Omega/VLF signals used and received strength.
8. Have there been previous difficulties with the Omega installation? If so, give details.
9. Have any faults been discovered during general checks/maintenance work?
10. What rectification work has been performed?
11. Please provide any additional information that you feel is relevant.

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APPENDIX 2. INSPECTOR FEEDBACK

INFORMATION CURRENCY. The Air Transportation Division, Technical Standards Programs, AFS-200 HB, has developed a revision process to ensure that the information contained in this handbook is correct and current. Any comments regarding content, whether to point out deficiencies or suggest improvements, should be directed to AFS-200 HB. All comments will be reviewed, and the handbook will be amended as appropriate. A job aid for suggesting changes is provided on the following page for your convenience. Your feedback is important to the success of this document. FAA.MAIL can be directed to AFS200HB.

APPENDIX 3. HANDBOOK BULLETINS

All current Flight Standards Handbook bulletins for Air Transportation (HBAT) and the appropriate index should be maintained in this appendix. HBAT's are issued as interim guidance to FAA order 8400.10, the Air Transportation Operations Inspector's Handbook. The material covered in these bulletins is intended to be incorporated into the handbook during the normal change cycle. Only bulletins and the index that are current and in effect should be maintained in this appendix.

Handbook bulletins are available via FAA electronic mail and will be maintained electronically using ASCII or MS WORD(v6.0) on the FEDWORLD BBS at the National Technical Information Service (NTIS) BBS (703-321-3339). Bulletins at NTIS are also available on the Internet at URLs FTP://fwux.fedworld.gov and http://www.fedworld.gov.

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APPENDIX 3. HANDBOOK BULLETINS

This appendix contains all current Flight Standards handbook bulletins (HBAT) as of the publication of this change and will be updated periodically through the normal cycle of handbook changes. Inspectors must retrieve the latest handbook, posted to the "FEDWORLD" bulletin board system of the Department of Commerce, National Technical Information Service (NTIS) and file them at the end of this appendix. When new handbook bulletins are issued on the Handbook Bulletin Board, a notice will be posted to "FEDWORLD." An updated listing of all current bulletins will be posted at the beginning of the 8400.10 Bulletin Board.

Handbook bulletins for Air Transportation (HBAT) are issued as interim guidance to FAA Order 8400.10, "Air Transportation Operations Inspector's Handbook." The material covered in these bulletins is intended to be incorporated into the handbook during the normal change cycle. Only bulletins that are current and in effect will be maintained electronically on the bulletin board.

The current change to 8400.10 is Change 11.

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HANDBOOK BULLETIN FOR AIR TRANSPORTATION (HBAT) 91-13
TCAS INDUSTRY ALERT BULLETINS -- FIELD INSPECTOR GUIDANCE
PUBLISHED 04-16-91

A. Background. The Federal Aviation Administration (FAA) Program Office and the Air Transport Association (ATA) Separation Task Force established the "Event Analysis Team" as a quick response group comprised of members from within the FAA, private sector, and pilot unions who have extensive Traffic Alert and Collision Avoidance System (TCAS) experience. This team is responsible to act quickly to any TCAS event that affects "Safety of Flight." Government agencies, manufacturers, and user groups will receive TCAS Industry Alert Bulletins in a timely manner whenever a "Safety of Flight" issue is detected during the implementation period of TCAS.

(1) TCAS Industry Alert Bulletins will recommend corrective actions and/or required operational procedures relevant to urgent, "Safety of Flight" issues. The FAA will distribute these bulletins via E-mail. Principal inspectors will ensure that their respective carriers are notified of these bulletins.

(2) Any information relevant to TCAS Industry Alert Bulletins from inspectors, flight crews, or controllers that might assist in determining additional corrective action and operational procedure changes should be provided to ARINC Research Corp., 2551 Riva Road, Annapolis, MD 21401, Attn: Mr. Gary Gambarani, MS 1-115, (301) 266-4588; or Federal Aviation Administration, 800 Independence Avenue, S.W., Washington, DC 20591, Attn: Mr. Bill Petruzel, AFS-450, (202) 267-7209/FTS 267-7209.

(3) TCAS Industry Alert Bulletins will be retained behind this handbook bulletin for further reference.

B. Further Information. Action Notice A8430.66, "TCAS Training," and Handbook Bulletin 91-10, Flight Inspector's Handbook, Order 8400.10, "Guidance for Field Inspectors During TCAS Implementation Period" contain additional guidance and information. Any questions regarding this bulletin may be addressed to AFS-210, through the Regional Flight Standards Division.

TCAS INDUSTRY ALERT BULLETIN #1

Issued by the TCAS "Event Analysis Team," February 25, 1991

The FAA TCAS Program Office and the ATA Separation Assurance Task Force established the "Event Analysis Team" as a quick response group comprised of members from within the FAA, industry, and pilot unions who have extensive TCAS experience. This team is tasked with the responsibility to react quickly to any TCAS event that affects "Safety of Flight." The TCAS Industry Alert Bulletin will be the vehicle by which government agencies, manufacturers, and user groups will be notified in a timely manner of urgent TCAS "Safety of Flight" issues and recommended corrective actions and/or required operational procedures during the TCAS implementation period. Each organization is requested to provide timely distribution to its members.

Any information requested from flightcrews and controllers to assist in determining required corrective action should be provided to ARINC Research Corp., 2551 Riva Road, Annapolis, MD 21401, Attn: Mr. Gary Gambarani, MS 1-115 via the TCAS Transition Program (TTP) Questionnaire available from your organization, or by any other available means. Mr. Gambarani can be reached at (301) 266-4588.

It is requested that all TCAS Industry Alert Bulletins be retained for reference.

Alert Event Number 91-1:

PROBLEM: In the past week, the TTP has received two completed pilot questionnaires that described TCAS encounters in which TCAS issued a "DESCEND" Resolution Advisories (RA) while the TCAS-equipped aircraft was at approximately 500 feel AGL, even though the TCAS system is designed to inhibit DESCEND RAs at 1,000 feet AGL. One RA occurred on final and the other RA occurred on departure. These are the only two reports of this problem in over 200,000 hours of TCAS operation.

ACTIONS BEING TAKEN: The TTP participants are actively reviewing all available data from these two events to determine the reason for TCAS issuing the DESCEND RA. The investigation will examine the design of the TCAS software, the implementation of the design by the avionics manufacturer, the interfaces between TCAS and other aircraft systems, and the presence of other aircraft in the vicinity when the RAs were issued. Once the cause of this problem is identified, fixes will be developed and implemented.

INTERIM ACTION/OPTIONS: After reviewing the initial reports, the TTP Event Analysis Team felt it was very important to provide the operators of TCAS equipment with the following guidelines for interim management of this anomaly.

1. A pilot may elect to operate in TA Only when established on final approach upon arrival and until communication is established with en route air traffic control on departure.

2. At the Captain's discretion, the TA/RA mode can be used during the approach or departure providing the crew is briefed that DESCEND RAs will not be followed below 1,000 feet AGL.

3. If a DESCEND RA is issued below 1,000 feet AGL, the airline TCAS coordinator or ARINC Research should be notified and a pilot questionnaire completed as soon as possible to allow all available data on the event to be collected. As a minimum, the following information is required: airline and flight number; aircraft nose or tail number; date and time of RA; location; altitude; and a brief description of the event.

HANDBOOK BULLETIN FOR AIR TRANSPORTATION (HBAT) 91-27
COCKPIT VOICE RECORDER (CVR) PREFLIGHT PROCEDURES
PUBLISHED 06-19-91 NTSB NO. 90-70

A. BACKGROUND. Recently, numerous aircraft accident reports have revealed regular findings of poor CVR performance. This degradation of CVR performance can be greatly alleviated by better CVR maintenance and effective preflight check procedures.

B. ACTION. Principal operations inspectors (POI) shall bring the contents of this bulletin to the attention of their respective operators. POIs shall ensure that their operators' training programs and operations manuals adequately address the frequency of flightcrew CVR preflight checks and the preflight check procedures based upon the guidelines established by the manufacturer. The preflight procedures should include a check using headphones for CVRs having recording monitoring provisions.

As a minimum, these CVR checks should be accomplished on the first flight of the day and whenever a flightcrew change occurs during that day.

C. PTRS INPUT. POI's shall make a PTRS entry to record the actions directed by this handbook bulletin with each of their operators. The PTRS entry shall be listed as activity code number 1380 in section 1, and as code A831 in the ''Primary/Key'' column in section IV. POI's should use the comments section to record comments of interaction with the operators.

D. FURTHER GUIDANCE. Any questions or clarifications regarding this bulletin may be addressed to AFS-510.

HANDBOOK BULLETIN FOR AIR TRANSPORTATION (HBAT) 91-32
AIR CARRIER INTERNAL EVALUATION PROGRAM
PUBLISHED 08-19-91

A. BACKGROUND. The text of this handbook bulletin was issued July 29, 1990 as Action Notice A8430.65. This information continues to be valid and may be shared with industry as delays have been encountered in the issuance of the advisory circular that is discussed below.

B. ACTION. This handbook bulletin establishes procedures to facilitate the implementation of Compliance/ Enforcement Bulletin No. 90-6 issued on March 29, 1990. Additionally, inspectors should become familiar with the new definitions and procedures included in proposed Advisory Circular (AC) 120-XX entitled Air Carrier Internal Evaluation Programs.

The policy described in Compliance/Enforcement Bulletin No. 90-6 is designed to improve safety compliance by foregoing a civil penalty where a certificate holder promptly discloses to the FAA an apparent, inadvertent violation and takes prompt action satisfactory to the FAA to correct the violation and preclude its recurrence. Notwithstanding a certificate holder's failure to report a violation, this policy also provides that the nature and extent of a certification holder's voluntary remedial action may be considered in mitigation of any formal enforcement action otherwise appropriate.

The voluntary disclosure policy represents a major change in our enforcement policy and, consequently, has generated attention at the highest levels of the FAA and among certificate holders. The policy also provides principal inspectors with new and greater autonomy and flexibility in responding to certificate holder disclosures of infractions. In coordination with district office management, principal inspectors will determine all actions to be taken under the voluntary disclosure policy.

Some certificate holders already have made voluntary disclosures of infractions. We anticipate many more voluntary disclosures in the near future. An open sharing of findings and a cooperative, as well as advisory effort, in solving problems will promote greater aviation safety. Compliance/Enforcement Bulletin No. 90-6 and AC 120-XX suggest, but do not require, that disclosures to principal inspectors occur under a program of continuous, internal evaluation conducted by certificate holders. An Internal Evaluation Program, as described in AC 120-XX, should improve an air carrier's capability to regularly identify and correct any safety problems before, rather than after FAA inspections.

The procedures outlined in the advisory circular apply to certificate holders operating under Parts 121 and 135 of the FAR and encompass the following aspects of an air carrier's organization:

a. Maintenance;

b. Flight operations; and

c. Security.

The information that follows covers the procedures that inspectors and field agents shall follow when implementing the policy described in Compliance/Enforcement Bulletin No. 90-6. Any questions regarding the implementation of these procedures should be directed to the Field Programs Division, AFS-500, or Civil Aviation Security Division, ACS-100.

1. Principal Inspector Investigation Process

a. After initial notification by a certificate holder of a possible violation of the FAR, the principal inspector should undertake the following action:

(1) Make a record of the initial notification, i.e., a record of a telephone call.

(2) Forward a written response to the certificate holder acknowledging receipt of the initial notification (see the sample letter in Attachment A of Advisory Circular 120-XX). This acknowledgement must include the request for a written report and serves in lieu of a letter of investigation, provided the written report is completed in accordance with the voluntary disclosure reporting procedures and Appendix B of the Air Carrie Internal Evaluation Program advisory circular.

b. Assign an inspector/agent to the case.

(1) The assigned inspector/agent will assist the principal inspector in conducting a thorough investigation and in preparing an investigative package.

(2) The principal inspector may request that a geographic inspector be assigned to provide assistance in the investigation. When necessary, requests shall be handled through the appropriate regional office.

(3) The principal inspector will make the decisions associated with accepting the proposed fix and processing the case.

2. In opening a case for investigation, the principal inspector, or assigned inspector/agent at the direction of the principal inspector, shall accomplish the following:

a. Create an office file for the apparent violation.

b. Assign an enforcement investigative report (EIR) number.

c. Enter appropriate information into the enforcement information system (EIS).

d. Prepare a program tracking and reporting system (PTRS) report utilizing the administrative action codes 1733, 3732, and 5732 for operations, airworthiness, and avionics respectively. In the National Use block enter "ACIEP." A synopsis of the disclosure and the comprehensive fix must be included in the comment section. (Not applicable to security cases at this time.)

3. As a part of the ensuing investigation, the principal inspector, or assigned inspector/agent at the direction of the Principal inspector, shall accomplish the following:

a. Review the EIS/PTRS for similar violations. These data, relative to internal evaluation/voluntary disclosure, will be compiled as cases are entered into the PTRS.

b. Consult with certificate-holding district office (CHDO) management, regional specialists, regional counsel, and others when he/she deems appropriate.

c. Conduct an investigation in accordance with Order 2150.3A, Compliance and Enforcement Program, guidance to verify the following:

(1) The full extent or scope of the alleged violation.

(2) If possible, why or how the violation action occurred.

d. Obtain the certificate holder's written report that includes its analysis of the alleged violation and supporting objective evidence.

e. Include the certificate holder's report in the office file created for the alleged violation.

f. Provide the certificate holder with a formal acknowledgement of receipt of the written report.

g. Determine whether the objective evidence supports a violation of the FAR.

(1) If a FAR has not been violated, close the file with "No Action." When the principal inspector believes that systemic concerns (potential for noncompliance in the future) exist, assistance should be offered to the certificate holder in developing and implementing a comprehensive fix that addresses those concerns.

(2) If a FAR has been violated, decide whether administrative action in accordance with Compliance/Enforcement Bulletin No. 90-6 can be pursued or if legal enforcement action is necessary.

4. If the review of objective evidence verifies that a comprehensive fix is necessary, the principal inspector, or assigned inspector/agent at the direction of the principal inspector, shall accomplish the following:

a. Determine if the corrective steps outlined in the comprehensive fix and a time schedule for completion of a fix are acceptable.

b. If appropriate, issue a letter of correction, which includes a summary of the comprehensive fix and the completion schedule. A letter of correction can be issued even though the approved comprehensive fix has not been completed. A statement would be added to the letter of correction stating that if the fix is not completed as agreed, the case will be reopened and legal enforcement action may be pursued.

c. Monitor the implementation of the approved comprehensive fix.

5. A complete investigative package must include the following elements:

a. FAA Form 2150-5, Enforcement Investigative Report. This form shall be completed as normal with the exception that source code 29 in block 22 will be used.

b. Inspector's summary and analysis. The analysis shall be included in Section B of the package. Unless a case is reopened for legal enforcement action, the analysis typically completed under Section D will not be necessary.

c. Immediate notification documentation record, i.e., record of telecon.

d. Certificate holder's written report.

e. Copies of appropriate objective evidence, particularly perishable material such as documents that need not be retained by the certificate holder.

f. Copy of the principal inspector's letter of correction.

g. Statement of follow-up investigation by the FAA confirming that the certificate holder's comprehensive fix was satisfactorily implemented.

6. Principal Inspector and Geographic Inspector/Field Agent Coordination.

a. Under this guidance, certificate holders are instructed to disclose apparent violations to its appropriate principal inspector. However, in a case where a representative of the certificate holder makes its initial disclosure to an inspector/field agent, the inspector/field agent must promptly notify the principal inspector of the disclosure. The principal inspector will then provide official acknowledgement for the initial notification to the certificate holder.

b. Before proceeding with legal enforcement action, a geographic inspector/field agent should determine from the principal inspector whether a certificate holder has previously disclosed an infraction that may have a bearing on the inspector/agent's enforcement case. Additionally, results from surveillance performed by a geographic inspector/field agent may prove valuable to the principal inspector in cases where a certificate holder is in the process of implementing a comprehensive fix.

7. Certificate Holder's Failure To Complete A Comprehensive Fix.

a. If the certificate holder reports, or the FAA discovers, that an approved comprehensive fix was not completed, the principal inspector should reopen the case and proceed with legal enforcement action.

b. If the certificate holder initiates a change to a comprehensive fix that is not yet satisfactory and the FAA does not concur with the change, the case should be reopened. The principal inspector may wish to consult with FAA technical specialists before making a final decision.

8. Recording and Tracking Voluntary Disclosure Packages.

a. The original investigative package should be maintained at the CHDO or with the principal security inspector.

b. A copy of all closed investigative packages must be forwarded through appropriate regional division to regional counsel for filing. Closed cases will not be reopened except as stated in 7(a).

c. A case may be closed prior to the completion of corrective steps outlined in the comprehensive fix. In these situations, a copy of the statement of follow-up investigation must be sent through the appropriate regional division to regional counsel when the fix has been determined to be satisfactorily completed.

d. As the focal point for information related to the Air Carrier Internal Evaluation Program/voluntary disclosure, the principal inspector should ensure that all PTRS report entries are made. The PTRS record shall be closed when the letter of correction is issued. If the comprehensive fix has not yet been satisfactorily completed, a PTRS surveillance record should be opened to track accomplishment.

9. Subsequent Violations/Reports.

a. A subsequent violation promptly disclosed to the FAA by the certificate holder following a satisfactory fix would be considered a new problem. The closed case would not be reopened.

b. If, at a later date, a satisfactory fix does not prevent the finding from recurring, the FAA will not take action against the findings incorporated in the original disclosure.

c. Actions taken by an airman which are independent of actions by the air carrier and which are violations of the basic regulations under which the airman serves (i.e., FAR Part 91 or 43) are not covered by this policy. However, consideration of any mitigating circumstances must be given when pursuing legal enforcement action.

10. Application to Airmen.

a. The policy set forth in Compliance/Enforcement Bulletin No. 90-6 applies to individual airmen operating under Parts 121 and 135 of the FAR when the following conditions are met:

(1) The apparent violation involves only FAR Part 121 or 135 and the action taken is part of an air carrier operation or procedure.

(2) The airman makes the first report of the apparent violation to the employing certificate holder.

(3) The infraction is promptly reported to the FAA.

b. When the above conditions are satisfied, the voluntary disclosure procedures covered in this handbook bulletin and the advisory circular should be applied in determining the type of corrective action to initiate.

11. Program Review and Analysis.

a. Appeals. As noted, all matters related to a certificate holder's voluntary disclosure shall be dealt with at the principal inspector level. However, problem resolution may include principal inspector consultation with system experts throughout the FAA (i.e., national resource specialists). If a problem cannot be resolved by a principal inspector, the appropriate FAA reporting chain will be followed.

b. Legal Reviews. Closed investigative packages may be reviewed by regional counsel to assure that the policy is correctly interpreted from a legal standpoint. Such reviews cannot, however, result in the reopening of any case that has been closed by a principal inspector.

c. Trend Analysis. All investigative packages generated by a voluntary disclosure will be reviewed by a central review function. The review is intended to provide feedback to industry and the FAA on trends identified as a result of the voluntary disclosure policy. This central clearinghouse also will provide program standardization. Analysis of closed investigative reports will help to determine what additional guidance is needed and whether national, regional, or local trends are occurring. In addition, we hope to provide the industry with de-identified reports of trends or problems that are uncovered in investigative reports, thereby encouraging the prompt identification and correction of potential deficiencies. Public safety will benefit from the sharing of such information.

We intend to continue National Aviation Safety Inspection Program inspections and our normal surveillance and legal enforcement programs. Aviation safety is best served by this additional policy which allows certificate holders to identify and correct their own instances of inadvertent noncompliance. Additionally, implementation of this new policy will promote the expending of time and resources in efforts to preclude the recurrence of noncompliance matters. We anticipate that our new policy of voluntary disclosure will strongly encourage air carriers to make internal evaluation a part of their everyday management process.

ORDER:	8300.10 and 8400.10
APPENDIX:	3
BULLETIN TYPE:	Joint Handbook Bulletin for Airworthiness (HBAW) and Air Transportation (HBAT)
BULLETIN NUMBER:	HBAW 92-19 and HBAT 92-12
BULLETIN TITLE:	Surveillance of Financially Distressed Operators
EFFECTIVE DATE:	10-16-94
TRACKING NUMBER:	N/A

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1. GENERAL. This bulletin contains direction and guidance to be used by inspectors concerning the surveillance of operators that have become financially distressed. The FAA must ensure that public safety is not jeopardized when operators become financially distressed. Operators that are financially distressed may attempt to decrease costs by curtailing certain necessary maintenance and operational activities, thereby adversely impacting safety. Such operators include those whose status is as follows:

--Approaching economic failure (sustained periods when revenues do not cover costs)

--Insolvent (unable to meet obligations when due)

--Bankrupt or have reorganized under Chapter 11 of the Federal Bankruptcy Code

A. Identification and Monitoring of Operators By AFS-500. The Field Programs Division (AFS-500) receives information from the Department of Transportation (DOT), from field inspectors, and from other sources to identify and monitor operators that have become financially distressed. Primarily, these are large Part 121 operators that operate aircraft that have a maximum seating capacity of more than 60 seats or a maximum payload capacity of more than 18,000 pounds or that conduct international operations. Smaller Part 121 and Part 135 operators may also be monitored as determined by AFS-500. When inspectors become concerned that a large Part 121 operator may be experiencing sustained financial difficulty, this information should be communicated to AFS-500 through the appropriate regional office. After analysis of the operator's situation, AFS-500 will determine if the operator is financially distressed and will advise the certificate-holding region.

B. Surveillance Program. Upon being notified by AFS-500 of a financially distressed operator, the certificate-holding region andthe district office shall develop an appropriate surveillance program. The program must be specific to the requirements of the operator. It must show those areas in which surveillance activity will be changed and how such activity differs from planned surveillance. The specific Program Tracking and Reporting Subsystem (PTRS) activity code which will be affected by the surveillance program should be identified. Geographic units may be tasked to perform additional surveillance activities as required by the program. The surveillance program should be forwarded to AFS-500 for coordination.

C. Operators Other than Those Identified and Monitored by AFS-500. Office managers, geographic supervisors, and principal inspectors are responsible to be alert for conditions and events which could be indicative of financial distress among all operators. While conducting surveillance activities, field inspectors should be aware of indicators of financial distress and their potential effect on operator safety. When such operators are identified, special surveillance programs should be implemented locally to ensure adequate surveillance.

2. INDICATIONS OF FINANCIAL DISTRESS. Some conditions and events that could be indicative of financial distress are as follows:

--Demands for "Cash on Delivery" by suppliers who formerly granted credit

--Significant layoffs of personnel due to the loss of business

--Major changes in operating scope, such as route contractions and decreases in number of aircraft

--Inadequate maintenance of aircraft

--Major increases in the turnover rate among employees

--Delays in meeting payrolls

--Infrequent revenue flights

--Frequent and unexpected changes in management personnel

--Increase in the frequency of complaints against the operator

--Reorganizations/mergers/buy-outs

--Adverse changes in financial condition

3. REPORTING. Upon being informed by AFS-500 of a reporting requirement for a financially distressed operator, the certificate- holding region and district office shall provide a weekly status report to AFS-500 with attention to AFS-540 via FAA Mail by the close of business (COB) each Thursday. This reporting requirement is in addition to the existing requirement contained in the "Airworthiness Inspector's Handbook," FAA Order 8300.10, volume 3, chapter 125. The report format will appear as follows:

A. Surveillance. This includes operations, airworthiness, and avionics surveillance activities that are accomplished by the certificate-holding district office (CHDO) and others during the previous week (mo/da/yr). Results are shown by PTRS codes and descriptions. Significant comments in the PTRS should also be annotated. See the following example:

PTRS	DESCRIPTION	CHDO	OTHERS	TOTAL
1622	Ramp	2	0	2
3629	En route-cockpit	8	4	12
5628	Spot	6	6	12
TOTAL		16	10	26

Significant comments:

B. Aircraft/Route Acquisitions.

C. Status of Reorganizations/Mergers/Buy-outs.

D. Changes in Management Personnel, Equipment, et cetera.

E. Labor/Management Issues.

F. Changes in Financial Condition.

G. Current Compliance Status/Pending Enforcement Cases.

H. Other Significant Areas Reflecting a Change in the Operator's Status.

I. Newsworthy Items.

4. LOCATION IN HANDBOOKS. The material covered in this handbook bulletin will be incorporated by AFS-500 in the "Air Transportation Operations Inspector's Handbook," FAA Order 8400.10, in volume 2, chapter 3; and in the "Airworthiness Inspector's Handbook," FAA Order 8300.10, in volume 3, chapter 125.

Until the new material is incorporated in these handbooks, inspectors should make a written reference of this handbook bulletin in the chapters indicated.

5. INQUIRIES. Any questions regarding this handbook bulletin should be directed to AFS–510 at (703) 661-0342.

/s/

Edgar C. Fell

ORDER:	8400.10 and 8700.1
APPENDIX:	3
BULLETIN TYPE:	Joint Handbook Bulletin for Air Transportation (HBAT) and General Aviation (HBGA)
BULLETIN NUMBER:	HBAT 93-02, HBGA 93-01 [1]
BULLETIN TITLE:	Operations Inspector Currency Requirements
EFFECTIVE DATE:	05-05-93
TRACKING NUMBER:	N/A

1. PURPOSE. This bulletin amends guidance to general aviation operations inspectors and air transportation operations inspectors regarding the flight training requirements that must be met in order for those inspectors to perform aircraft type- specific job functions in an aircraft/simulator for general aviation and air transportation.

2. BACKGROUND. This bulletin contains interim guidance for inspectors and managers at all levels of Flight Standards for the management of flight training course quotas and the qualification of operations aviation safety inspectors. This guidance supplements guidance contained in Volume 5, Chapter 1, Section 1 of FAA Order 8400.10, ''Air Transportation Operations Inspector's Handbook,'' and amends Volume 2, Chapter 1, Section 2 of FAA Order 8700.1, ''General Aviation Operations Inspector's Handbook.''

A. Definitions. In order to prevent misinterpretation of the guidance contained in this bulletin, Order 8400.10, and Order 8700.1, the following definitions are presented.

(1) First level supervisor. A first level supervisor is a supervisory aviation safety inspector assigned to duties that involve direct supervision of line inspectors.

(2) Flight crewmember. FAR Part 1 defines a flight crewmember as ''a pilot, flight engineer, or flight navigator assigned to duty in an aircraft during flight time.''

(3) Flight training. As used in this bulletin and in Order 8700.1, flight training is a Flight Standards-approved and numbered course that may include instruction in applicable regulations and procedures. The course may be given in an aircraft or in an FAA-approved simulator/training device.

(4) Job function. For an inspector, those aircraft type-specific responsibilities and duties or tasks, such as pilot certification or testing, identified in the official position description of Order 8400.10 or Order 8700.1.

(5) Line inspector. A line inspector is a non-supervisory aviation safety inspector assigned to a Flight Standards district office (FSDO), certificate management office (CMO), or aircraft evaluation group (AEG) in a work program involving airmen certification, check airmen functions, and surveillance events.

(6) Safety pilot. As used in this bulletin and in Orders 8400.10 and 8700.1, a safety pilot is a pilot seated at the controls, other than the pilot being checked, who is fully qualified in accordance with Part 91.109 of the Federal Aviation Regulations (FAR). (Example: an inspector conducting a certification flight check or proficiency check with the airman applicant utilizing a view-limiting device.)

(7) Staff inspector. A staff inspector is an aviation safety inspector assigned to a regional office, headquarters office, or the FAA academy.

B. Inspector Qualifications.

(1) Before performing airmen certification and/or testing functions, an inspector must have completed either the air carrier or general aviation indoctrination course, as appropriate to the certification task. The inspector must hold valid and appropriate airmen certificates and type ratings corresponding to the job function.

(2) An inspector conducting an airline transport pilot (ATP) practical test in a small rotorcraft need not have a type rating in that rotorcraft on his or her ATP certificate, but must possess full ATP privileges (i.e., without

a visual flight rules (VFR) limitation) for rotorcraft and appropriate category and class ratings. An inspector holding an ATP with multiengine land or sea ratings may give ATP practical tests for single-engine land or sea ratings, as appropriate, provided the inspector holds the corresponding class rating (land or sea) at the commercial level.

(3) All inspectors must have satisfactorily completed the applicable on-the-job training (OJT) in accordance with FAA Order 3140.19, "On-the-Job Training (OJT) of Aviation Safety Inspectors."

C. Training Requirements. In order for an operations inspector to perform job functions requiring the inspector to act as a required flight crewmember or safety pilot, the inspector must have met the following criteria as appropriate.

(1) The inspector must meet the requirements of FAR 61.56, 61.57 and 61.58, as applicable to the aircraft used. The flight training course requirements of this bulletin do not supersede or contradict the requirements of FAR 61.58 with respect to aircraft certificated for more than one required pilot crewmember.

(2) If 12- or 24-month, as appropriate, flight/simulator training or proficiency checks are accomplished in the month before or the month after they were due, they are considered to have been accomplished in the month they were due. This 3-month period is the "eligibility period."

(3) Inspectors assigned to flight crewmember, safety pilot, or airmen certification duties in a simulator or aircraft, other than those requiring type ratings by type design, must complete one flight/simulator training course each 24 months in each aircraft category used for the job function.

(4) Inspectors assigned to flight crewmember, safety pilot, or airmen certification duties in a simulator, airplane, or rotorcraft requiring type ratings by type design, must complete at least one flight/simulator training course each 12 months in a type of aircraft for which that inspector is assigned. Flight/simulator training courses should be scheduled in rotation for those inspectors who are assigned to more than one aircraft requiring a type rating. However, these inspectors should not be scheduled for more than one course every 12 months in an aircraft category.

(5) Inspectors assigned to airmen certification duties in gyroplanes, gliders, or lighter-than-air categories of aircraft may satisfy the 24-month flight training requirements by completing a pilot-in-command (PIC) proficiency check in the appropriate aircraft category under the "FAA Aircraft Management Program," Order 4040.9D. Under these circumstances, if the inspector being checked in accordance with 4040.9D fails any of the required maneuvers or pilot operations required to complete the check, the person giving the check will give additional proficiency flight time and practice to the inspector during the course of the check. At the completion of a check where an inspector required additional proficiency flight time but was unsuccessful in completing the check, the person giving the check will forward a report to the manager requesting the flight check with the pertinent details of the check and a recommendation for any further action.

(6) Inspectors assigned to flight crewmember, safety pilot, or airmen certification job functions in turboprop airplanes must have completed the FAA Academy course, "Turboprop Initial Qualification," FAA Course No. 20056. This requirement does not apply to inspectors who hold a type rating in a turbopropeller-powered airplane. Regional Flight Standards divisions (RFSD's) may submit requests for a waiver to AFS-520 when an inspector has logged at least 200 hours as a pilot in a turbopropeller-powered airplane within the last 5 years.

(7) Inspector training and/or qualification requirements to conduct inspection and surveillance job functions other than those specifically addressed in this bulletin are contained in the inspector handbook appropriate to that job function.

D. Scheduling and Training Priorities. To allow the FAA to manage limited flight training resources, and in consideration of programmed training quotas, the following priorities shall be followed in allocation of flight training.

(1) Line inspectors assigned to airmen certification duties as a required flight crewmember/safety pilot will be scheduled for, and be given the FIRST AND HIGHEST PRIORITY for, flight/simulator training. RFSD's will reprogram training quotas to ensure that line inspectors who have not received recurrent flight/simulator training within the past 24 calendar months, or 12 months for inspectors assigned to aircraft requiring a type rating, are given the first priority for any flight training available in order of their last training date.

(2) First level supervisors and regional and headquarters staff inspectors will not normally be assigned to airmen certification duties. In the rare event that this becomes necessary, those inspectors will be given SECOND PRIORITY for any available training after all line inspectors have received the minimum flight training described in paragraph 2D(1) of this bulletin.

(3) Inspectors who have indicated an intention to retire or terminate their service within the 6 calendar months after the month in which their flight training is due should not be sent to flight training. Inspectors in this category may be placed on a waiver to this requirement for up to 6 months.

E. Letters of Authorization.

(1) If an application is received for a practical test in an aircraft for which a rated and current inspector is not avail- able, the RFSD may request from AFS-520 a letter of authorization (LOA) in lieu of a type rating for an inspector who is deemed best qualified in an aircraft with similar characteristics. This provision is limited to those cases in which an appropriately rated inspector is not available.

(2) The LOA must name the applicant(s) to be checked. Blanket authorizations to individual inspectors will not be issued.

(3) Inspectors issued such an LOA shall conduct the practical test from an approved forward observer's seat unless circumstances preclude it. In such cases, specific permission to conduct the practical flight test from a required flight crewmember seat must be granted in the LOA issued by AFS-520. An LOA authorizing the conduct of a practical test from a required flight crewmember seat will only be issued to an inspector who meets the appropriate currency requirements of FAR Part 61.

F. Inspector Status During Practical Tests.

(1) The inspector is not PIC of the aircraft during the practical test unless acting in that capacity for the flight, or a portion of the flight, or by prior arrangement with the applicant or other PIC. To administer a practical test for an ATP certificate or a class or type rating on that certificate, or to administer a Part 121 proficiency flight check, an inspector occupying a pilot seat must be fully qualified and current to act as PIC in that aircraft. If an inspector acts as a required flight crewmember during a practical test, that inspector must possess at least a valid third-class medical certificate.

(2) The inspector may observe the applicant's performance of autorotations to touchdown from the ground during certification practical tests in rotorcraft if the applicant is the sole occupant in the aircraft. Similarly, the inspector may observe, from the ground or another aircraft, the performance of aerial maneuvers by an applicant flying a single-control aircraft.

(3) During practical tests given on aircraft requiring a flightcrew of two or more, the inspector should give the practical test from the designated jump seat or place in the cabin from which the flight, crew coordination, and cockpit resource management can be adequately observed.

(4) If no jump seat is available, the inspector may exercise discretion in deciding which seat to occupy during the practical test. Aircraft seating configuration and the inspector's skills, limitations, recent experience, and qualifications should be considered. If the practical test is conducted at the ATP level, the requirements of paragraph 2F(1) of this bulletin must be observed.

(5) Any disagreements over the qualifications or experience of pilots occupying a pilot seat should be referred to the RFSD manager. Final decision shall be in accordance with pertinent law, regulation, and the Flight Standards Collective Bargaining Unit Agreement.

(6) Inspectors may observe free balloon flight tests from the ground, regardless of whether it is a single or multiplace balloon.

(7) If the inspector conducting a practical test assists an applicant during the test, for reasons other than maintaining the safety of the flight, such action would be disqualifying. Before beginning the practical test, the inspector should discuss these issues with the applicant as part of the overall practical test preflight briefing described in Order 8400.10, Volume 5, Chapter 1, Section 2 and in Order 8700.1, Volume 2, Chapter 1, Section 3.

G. Waiver Authority. RFSD's may request individual inspector waivers to the flight training requirements of this bulletin from AFS-520. The waiver will only be issued when the training has been requested but the courses were unavailable and a current and qualified inspector is not available. The waiver will be valid for a maximum of 6 months, and will not be reissued. Waivers are strongly discouraged, and will only be issued after all efforts to obtain the required training have been exhausted. If circumstances warrant the issuance of a waiver, the inspector must be granted sufficient official duty time, not to exceed 8 hours, to refresh himself or herself on aircraft systems and procedures. All waivers shall expressly prohibit the inspector from occupying a required flight crewmember seat while performing duties under the authority of the waiver. The waiver provisions of this paragraph apply to ALL aircraft.

H. Conduct of Regional Flight Training Courses. RFSD's should use regionally assigned FAA aircraft to the maximum extent possible to conduct recurrent flight training.

3. ACTION. Order 8400.10 Handbook Bulletin 91-33 dated 08/19/91 is cancelled. Order 8700.1, Volume 2, Chapter 1, Section 2 is cancelled.

4. INQUIRIES. This bulletin was developed by AFS-200, AFS-500, and AFS-800. Any questions regarding this information bulletin should be directed to AFS-520 (Training and Automation) at (703) 661-0333, extension 5125.

5. LOCATION IN HANDBOOK. The material covered in this bulletin will be incorporated by AFS-550 in future revisions of Orders 8400.10 and 8700.1. Until the new material is incorporated in the handbooks, inspectors should refer to this bulletin.

/s/
Edgar C. Fell

ORDER:	8400.10
APPENDIX:	3
BULLETIN TYPE:	Handbook Bulletin for Air Transportation (HBAT)
BULLETIN NUMBER:	HBAT 93-03
BULLETIN TITLE:	Revised: Approving Federal Aviation Regulations (FAR) Parts 121 and 135 Training Programs
EFFECTIVE DATE:	6-7-93
TRACKING NUMBER:	N/A

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1. SUBJECT. This handbook bulletin replaces HBAT 92-09, "Approving FAR Parts 121 and 135 Training Programs," dated July 15, 1992. The original intent of the superseded bulletin remains unchanged: to provide direction and guidance to inspectors for reviewing and approving FAR Parts 121 and 135 training programs.

A. Handbook Guidance. In Change 1 to FAA Order 8400.10, "Air Transportation Operations Inspector's Handbook," Flight Standards Service published direction and guidance to help modernize, simplify, and standardize the process of developing and approving training programs (see volume 3, chapter 2). Since the guidance was published, Flight Standards Service has become increasingly aware that the new guidance has not had the intended effect. Both principal operations inspectors (POI's) and operators are confused about how to comply with the intent of the handbook's guidance. Instead of simplifying the process, in many cases, the process has become unduly cumbersome.

B. New Advisory Circulars (AC's). Two new AC's are being developed which will provide examples of training programs for Parts 121 and 135 operators. Publication and distribution of the two AC's are expected during 1993.

2. ACTION. POI's shall observe and adhere to the following direction and guidance:

A. Prior to Publication of the AC's.

(1) Inspectors may accept and grant approval for new training programs or revisions to existing programs that are not in the modular format.

(2) Inspectors should, however, encourage operators to submit new training programs or revisions to existing training programs in the modular format as described in 8400.10.

B. After the AC's Have Been Published.

(1) New training programs or revisions to existing training programs shall be accepted and approved by inspectors only in the modular format.

(2) Training programs having final approval need not be converted to the modular format if inspector surveillance shows them to be effective and safe.

(3) Training programs having initial approval need not be converted to the modular format and may be granted final approval if inspector surveillance shows them to be effective and safe.

(4) Training programs currently being prepared using other than the modular format may be accepted for approval consideration for up to 1 year after the effective date(s) of the AC's. After the two AC's have been in effect for 1 year, only training programs prepared using the modular format may be accepted for approval consideration.

3. INQUIRIES. This handbook bulletin was developed by AFS-210. Any questions regarding this bulletin should be directed to AFS-510 at (703) 661-0333 extension 5032.

/s/
Edgar C. Fell

ORDER:	8400.10
APPENDIX:	3
BULLETIN TYPE:	Handbook Bulletin for Air Transportation (HBAT)
BULLETIN NUMBER:	HBAT 93-07
BULLETIN TITLE:	Operations Specifications (OpSpecs) Revision, Special Aircrew, Aircraft Authorization Minimums
EFFECTIVE DATE:	8-27-93

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1. PURPOSE. This bulletin provides instruction to principal operations inspectors (POI) for issuance of revised OpSpecs to operators authorized to use Special Aircrew, Aircraft Authorization Minimums.

2. BACKGROUND. Recently the Flight Standards National Field Office (FSNFO), AFS-500, has issued a Handbook Bulletin titled "Special Aircrew, Aircraft Authorization Required" CAT I Minimums. This bulletin sets forth the conditions that an operator must meet prior to the use of Category I Special Minimums. Presently the Operations Specifications Subsystem software will not provide the approval subparagraph C53f. Until the software can be upgraded, it will be necessary for POI's to make manual revisions to the OpSpecs.

3. POI ACTION. POI's having certificate management responsibility for operators requesting approval for use of Category I, Special Minimums should contact the operations branch of their Regional Flight Standards Division to obtain instructions and the specific pages necessary to issue the OpSpecs subparagraph for Special Aircrew, Aircraft Authorized Minimums.

4. INQUIRIES. This bulletin was developed by AFS-500. Any questions or comments concerning the information in this bulletin should be directed to AFS-510 at (703) 661-0333 ext. 5017.

5. LOCATION IN HANDBOOK. The material covered in this handbook bulletin will be incorporated by AFS-550 in volume 3, chapter 1, section 5, of FAA Order 8400.10, Air Transportation Operations Inspector's Handbook. Until the handbook is updated, inspectors should make written reference to this bulletin in the margin next to the indicated paragraph.

/s/
Edgar C. Fell

ORDER:	8400.10
APPENDIX:	3
BULLETIN TYPE:	Handbook Bulletin for Air Transportation (HBAT)
BULLETIN NUMBER:	HBAT 93-07
BULLETIN TITLE:	Operations Specifications (OpSpecs) Revision, Special Aircrew, Aircraft Authorization Minimums
EFFECTIVE DATE:	8-27-93

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1. PURPOSE. This bulletin provides instruction to principal operations inspectors (POI) for issuance of revised OpSpecs to operators authorized to use Special Aircrew, Aircraft Authorization Minimums.

2. BACKGROUND. Recently the Flight Standards National Field Office (FSNFO), AFS-500, has issued a Handbook Bulletin titled "Special Aircrew, Aircraft Authorization Required" CAT I Minimums. This bulletin sets forth the conditions that an operator must meet prior to the use of Category I Special Minimums. Presently the Operations Specifications Subsystem software will not provide the approval subparagraph C53f. Until the software can be upgraded, it will be necessary for POI's to make manual revisions to the OpSpecs.

3. POI ACTION. POI's having certificate management responsibility for operators requesting approval for use of Category I, Special Minimums should contact the operations branch of their Regional Flight Standards Division to obtain instructions and the specific pages necessary to issue the OpSpecs subparagraph for Special Aircrew, Aircraft Authorized Minimums.

4. INQUIRIES. This bulletin was developed by AFS-500. Any questions or comments concerning the information in this bulletin should be directed to AFS-510 at (703) 661-0333 ext. 5017.

5. LOCATION IN HANDBOOK. The material covered in this handbook bulletin will be incorporated by AFS-550 in volume 3, chapter 1, section 5, of FAA Order 8400.10, Air Transportation Operations Inspector's Handbook. Until the handbook is updated, inspectors should make written reference to this bulletin in the margin next to the indicated paragraph.

/s/
Edgar C. Fell

ORDER:	8400.10
APPENDIX:	3
BULLETIN TYPE:	Flight Standards Handbook Bulletin for Air Transportation (HBAT)
BULLETIN NUMBER:	HBAT 94-02
BULLETIN TITLE:	Air Ambulance Operations Specifications: Revised
EFFECTIVE DATE:	01-31-94

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1. PURPOSE. This bulletin provides revised instructions for principal operations inspectors (POI) for issuance of operations specifications (OpSpecs) to operators authorized to conduct air ambulance operations. FSIB 93-37, Air Ambulance Operations Specifications, is canceled.

2. BACKGROUND.

A. Change 6 to FAA Order 8400.10, Air Transportation Operations Inspector's Handbook, contains a new chapter, Air Ambulance Operations (volume 4, chapter 5). FSIB 92-33 was issued (and extended by FSIB 93-37) to provide instructions for the issuance of OpSpecs paragraphs A23 and A24, which authorize air ambulance operations. However, paragraph A23 conflicts with the paragraph number assigned for ground deicing/ anti-icing operations. Therefore, this bulletin provides instructions for issuance of approval for all air ambulance operations as paragraph A21.

B. Presently the Operations Specifications Subsystem (OPSS) software will not provide the current paragraph A21, Air Ambulance Operations. Until the software can be upgraded, it will be necessary for POI's to make manual revisions to the OpSpecs.

3. ACTION. POI's having certificate management responsibility for operators conducting air ambulance operations should contact the operations branch of their Regional Flight Standards Division (RFSD) to obtain the instructions and the specific pages necessary to issue or reissue, as appropriate, the OpSpecs in accordance with this HBAT.

4. INQUIRIES. This HBAT was developed by AFS-500. Any questions or comments concerning this bulletin should be directed to AFS-510 at (703) 661-0333, extension 5017.

5. LOCATION IN HANDBOOK. This HBAT will provide the necessary information for issuing OpSpecs until the OPSS has been upgraded. Until that time, inspectors should make a written reference to this bulletin in the margin in volume 4, chapter 5, section 1, paragraph 1337 of FAA Order 8400.10.

/s/
Edgar C. Fell

ORDER:	8400.10
APPENDIX:	3
BULLETIN TYPE:	Flight Standards Handbook Bulletin for Air Transportation (HBAT)
BULLETIN NUMBER:	HBAT 94-03
BULLETIN TITLE:	Operations Specifications (OpSpecs) Revision: Part 135 Operations in Ground Icing Conditions
EFFECTIVE DATE:	01-31-94

1. PURPOSE. This bulletin provides instruction for principal operations inspectors (POI) for issuance of OpSpecs concerning Part 135 operations in ground icing conditions.

2. BACKGROUND.

A. Amendments to the deicing regulations of Part 135 of the Federal Aviation Regulations (FAR) will become effective on January 31, 1994. These regulations set forth requirements concerning the operation of airplanes in ground icing conditions. Presently the Operations Specifications Subsystem (OPSS) software will not provide the appropriate approval paragraph A23. Until the software can be upgraded, it will be necessary for POI's to make manual revisions to the OpSpecs.

B. Paragraphs A23 and A24 have previously been used for approving Air Ambulance operations. Prior to revising an Air Ambulance operator's OpSpecs to address the requirements of this bulletin, the operator's OpSpecs must be revised in accordance with HBAT 94-02, ''Air Ambulance Operations Specifications: Revised.''

3. POI ACTION. POI's having certificate management responsibility for Part 135 operators should contact the operations branch of their Regional Flight Standards Division (RFSD) to obtain instructions and the specific pages necessary to issue the appropriate OpSpecs paragraphs concerning operation of airplanes in ground icing conditions.

4. INQUIRIES. This FSIB was developed by AFS-500. Any questions or comments concerning the information in this bulletin should be directed to AFS-510 at (703) 661-0333, extension 5017.

5. LOCATION IN HANDBOOK. This HBAT will provide the necessary information for issuing OpSpecs until the OPSS has been upgraded. Until that time, inspectors should make a written reference to this bulletin in the margin in section 2 of volume 4, chapter 8 (Change 9).

/s/
Edgar C. Fell

ORDER:	8300.10, 8400.10, and 8700.1
APPENDIX:	3
BULLETIN TYPE:	Joint Handbook Bulletin for Airworthiness (HBAW), Air Transportation (HBAT), and General Aviation (HBGA)
BULLETIN NUMBER:	HBAW 94-01, HBAT 94-06, and HBGA 94-03
BULLETIN TITLE:	Transition to All Computerized Airman Knowledge Testing
EFFECTIVE DATE:	04-20-94

1. PURPOSE. This Flight Standards Handbook Bulletin contains guidance concerning new procedures relative to airmen knowledge testing.

2. RELATED MATERIAL. Inspection and surveillance procedures are covered in FAA Order 8080.6, "Conduct of Airmen Knowledge Testing Via the Computer Medium."

3. BACKGROUND. Flight Standards has identified conversion to computerized testing as an effective approach in providing enhanced quality oversight of designees, while reducing the burden on the diminishing field inspector and clerical work force. This system of knowledge testing is also the most effective approach in meeting major cost reduction initiatives while meeting customer demands for quality service. The development of computerized testing has progressed from the 1989 prototype introduction to a system with capacity and sophistication to satisfy the needs of Flight Standards Service. Computerized testing now administers all 62 test types in more than 420 locations, and new test locations are routinely being added. In view of this background, Flight Standards Service will begin a movement toward a completely computerized knowledge testing environment upon publication of this bulletin.

4. POLICY STATEMENT. Renewal of written test examiners with low activity or initial designation of new written test examiners is contrary to the policy established in this bulletin, and any deviation must be approved by the Regional Flight Standards Division.

5. INSPECTOR ACTION. The movement towards a computerized knowledge testing environment necessitates that inspectors discontinue the following upon publication of this bulletin:

-- Renewals of designations for examiners who administer five or less exams per year

-- Designations of new written test examiners

-- Approvals of additional testing authority to designated written test examiners

-- Approvals of new written test examiner representatives or reassignings of representatives to other written examiners

6. REMOTE OFF-LINE TESTING ASSISTANTS (ROFTA). Computer Testing Designees (CTD) will identify and request approval of ROFTA's from AFS-630. AFS-630 will approve or disapprove the ROFTA candidate after contacting the flight standards district office that has jurisdiction of the geographic area in which the ROFTA candidate is located to determine the suitability of the appointment.

7. ROFTA TESTING IN REMOTE OR ISOLATED AREAS. Computer generated written tests will be available for applicants in isolated or remote areas. The Computer Testing Designee (CTD), Aviation Business Services at 1-800-947-4228 will serve as the initial contact for applicants requesting computer generated tests for isolated or remote areas. This service provides the assurance that all airmen applicants can be served after the current written testing system has been completely transitioned to the all computerized system. Aviation Business Services will coordinate computer generated written test applications with AFS-631. AFS-631 will return all approved applications to the CDE for completion of a test preparation package. The CTD will mail the written test package to an FAA-approved ROFTA who will administer the test and upon completion will return the test package to the CTD for grading. This form of testing will be approved only under unusual circumstances.

8. FIELD FEEDBACK. Flight Standards District Office inspection data covering computer testing centers will be provided to AFS-630 via the Program Tracking and Reporting Subsystem (PTRS). As the Flight Standards Service moves toward improving public service more efficiently, it is important to receive feedback from field personnel.

9. UNUSUAL TESTING CIRCUMSTANCES. Methods of administering written examinations, when warranted during unusual circumstances, will be provided by AFS-630 at (405) 954-4149.

10. LOCATION IN HANDBOOK. The material covered in this bulletin will be incorporated into the inspector handbooks as follows: volume 2, chapter 29 of FAA Order 8300.10, ''Airworthiness Inspector's Handbook''; volume 5, chapter 1 of FAA Order 8400.10, ''Air Transportation Operations Inspector's Handbook''; and volume 2, chapter 21 of FAA Order 8700.1, ''General Aviation Operations Inspector's Handbook.'' Until the new material is incorporated, inspectors should make written reference in the margin next to the indicated paragraph.

11. INQUIRIES. This bulletin was developed by AFS-630. Any questions or comments concerning this bulletin should be made by letter to the FAA Operations Support Branch, AFS-630, P.O. Box 25082, Oklahoma City, OK 73125 or by facsimile to (405) 954-4748.

/s/

Edgar C. Fell

ORDER:	8300.10, 8400.10, and 8700.1
APPENDIX:	3
BULLETIN TYPE:	Joint Handbook Bulletin for Airworthiness (HBAW), Air Transportation (HBAT), and General Aviation (HBGA)
BULLETIN NUMBER:	HBAW 94-02, HBAT 94-08, and HBGA 94-04
BULLETIN TITLE:	Program Tracking and Reporting Subsystem (PTRS) Documentation of Action Required by Flight Standards Bulletins
EFFECTIVE DATE:	05-12-94

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1. PURPOSE. This bulletin establishes the process by which all Flight Standards field offices must accomplish and document surveillance, inspection or certificate management actions required by Flight Standards Air Carrier Operations Bulletins (ACOB), Flight Standards Handbook Bulletins (HBB), and Flight Standards Information Bulletins (FSIB).

2. BACKGROUND. Recently, several audits were conducted of our field facilities wherein findings have indicated that our field inspectors are not receiving and, in some cases, not following action items specified in the subject policy bulletins. Furthermore, it appears that, in some cases, inspectors have not received, accomplished and/or documented their action(s) in the PTRS if required by the bulletin or directive.

3. ACTION. Effective immediately, all regional Flight Standards division managers shall implement a system to ensure that sufficient quantities of electronically transmitted and printed policy documents are distributed to all personnel in each office. Emphasis should also be placed on the importance of reading and accomplishing all required actions specified in policy bulletins.

A. Field Office Management Responsibilities and Distribution. Each Flight Standards field office manager shall maintain a master copy of all pertinent policy bulletins (ACOB, HBB, FSIB). Each master policy bulletin shall be signed and dated by the field office manager upon receipt. If a bulletin is electronically transmitted, the field office manager shall ensure that sufficient hard copies of each policy bulletin are reproduced and given to each inspector assigned responsibility for an operator or certificate holder affected by the policy or procedure. If an action is called for in the bulletin, the field office manager and supervisors are responsible for ensuring that the appropriate action is completed by each inspector assigned to their supervision.

B. PTRS Close-Out. Upon completion of any action required by an ACOB, HBB, or FSIB, all inspectors who have responsibility for accomplishing those actions shall take the following steps:

(1) Complete a PTRS record by using PTRS Code 1381, 3381, or 5381: Technical Administration/Directive Action Accomplishment. This PTRS code is new and shall be established upon publication of this bulletin.

(2) Enter the document number of the ACOB, HBB, or FSIB into the "National Use" field of the PTRS record. For example, ACOB Chapter 9, Bulletin 94-01, would be entered as "ACOB99401." Inspectors should note that the "National Use" field has a maximum of 9 characters. Entry of HBB's or FSIB's would be accomplished as follows: FSIB for Air Transportation 94-03 (FSAT 94-03) would be entered in the "National Use" field as "FSAT9403"; and Air Transportation HBB 94-04 (HBAT 94-04) would be entered in the "National Use" field as "HBAT9404." Inspectors should note in each example that no spaces are used in the actual PTRS computer entry.

(3) Complete one record for each affected operator and make appropriate comments in the inspector's opinion area concerning the methods used by the operator for compliance.

(4) Complete any action required by policy bulletins within 120 days of receipt, unless otherwise stated in the bulletin. If an operator does not comply with a non- regulatory action item, the inspector's comments should thoroughly document the operator's inaction or comment with respect to the actions required by the bulletin.

C. Regional Division Audit and Reporting.

(1) Each regional Flight Standards division shall provide, by June 30 and December 31 of each calendar year, a report on a review of each district office's compliance with this bulletin to the Flight Standards National Field Office, AFS-500. AFS-500 shall compile the reports and summarize them for the Director of Flight Standards Service, AFS-1. The report shall include the following:

-- The names of any operators for which required action was not completed

-- The reason action was not completed

-- The names of any operators who elected not to adopt non- regulatory recommendations and the reason(s) the action was not adopted

(2) Flight Standards Divisions shall follow up and ensure that any operator who has not received notification of Flight Standards directive material is so notified of the requested actions as soon as possible.

4. LOCATION IN HANDBOOK. The material covered in this HBB shall be incorporated by AFS-550 in FAA Orders 8300.10, ''Airworthiness Inspector's Handbook'' in volume 4, chapter 8; 8400.10, ''Air Transportation Operations Inspector's Handbook,'' in volume 1, chapter 4, section 1; and 8700.1, ''General Aviation Operations Inspector's Handbook,'' in volume 1, chapter 6. Until the new material is incorporated, inspectors should make written reference to this bulletin in the margins next to the indicated paragraphs.

5. INQUIRIES. This HBB was developed by AFS-550. Any questions or comments regarding this bulletin should be directed to AFS-540 at (703) 661-0333.

/s/
Edgar C. Fell

ORDER:	8300.10 and 8400.10
APPENDIX:	3
BULLETIN TYPE:	Joint Handbook Bulletin for Airworthiness (HBAW) and Air Transportation (HBAT)
BULLETIN NUMBER:	HBAW 94-03 and HBAT 94-09
BULLETIN TITLE:	Engine Change and Verification Flights for Extended Range Operation with Two-Engine Airplanes (ETOPS) - Guidance for ETOPS Operators
EFFECTIVE DATE:	05-20-94

1. SUBJECT. The purpose of this handbook bulletin is to provide information on verification flights to principal inspectors who have certificate responsibilities for FAR Part 121 operators that have an established ETOPS operation or are anticipating application for that authority.

2. BACKGROUND. AC 120-42A, "Extended Range Operation with Two-Engine Airplanes," provides guidance for ETOPS operational approval. This approval includes procedures for the resolution of certain airplane/engine discrepancies through the requirement of verification flights. These flights are an attempt to identify potential human factor or mechanical errors prior to ETOPS operation. ETOPS operators should have verification flight procedures described in their supplemental maintenance program for events involving propulsion system shutdown, engine or major engine module change, primary system failure, and for certain adverse trends or prescribed events. In the case of an engine change or a major engine module change, the requirement of a verification flight is in addition to the normal test cell and ground run procedures.

3. ACTION. As defined in AC 120-42A, extended range operation commences at a point on the outbound route that is one hour flying time (in still air, at normal cruising speed with one engine inoperative) from the nearest suitable airport. It is permissible to designate the period of time from airport departure to entry into the ETOPS environment as a maintenance verification flight, in combination with a regularly scheduled ETOPS revenue flight, provided the verification phase is documented as satisfactorily completed upon reaching the ETOPS entry point.

It is important to note that when this type of ETOPS verification flight is conducted, written procedures must be in place to ensure the flightcrew is fully briefed prior to dispatch concerning the event and/or the maintenance performed that necessitates the verification flight. Appropriate maintenance personnel should convey to the flightcrew the specific observations and/or actions required of them during the verification portion of the flight as well as the method to be used to properly record the satisfactory completion of that verification flight. All flightcrew observations and/or actions must be completed upon entering the ETOPS portion of the flight.

The functions and the role of the centralized maintenance control department are important and should be clearly defined in the operator's ETOPS manual, particularly the responsibilities pertaining to propulsion system shutdowns, engine changes, primary system failures, verification flights, and certain adverse trends or other prescribed events.

4. LOCATION IN HANDBOOK. The material covered in this handbook bulletin shall be incorporated by AFS-550 in FAA Orders 8300.10, "Airworthiness Inspector's Handbook," in volume 2, chapter 82, and 8400.10, "Air Transportation Operations Inspector's Handbook," in volume 3, chapter 9. Until the new material is incorporated, inspectors should make written reference to this bulletin in the margins next to the indicated paragraphs.

5. INQUIRIES. This bulletin was developed by AFS-330. Any questions or comments concerning this bulletin should be directed to AFS-330 at (202) 267-3440.

/s/
Frederick J. Leonelli

ORDER:	8400.10
APPENDIX:	3
BULLETIN TYPE:	Flight Standards Handbook Bulletin for Air Transportation (HBAT)
BULLETIN NUMBER:	HBAT 94-10
BULLETIN TITLE:	Crewmember Indoctrination Training and Reduction of Programmed Hours During Labor Unrest
EFFECTIVE DATE:	05-25-94

1. PURPOSE. This handbook bulletin (HBB) contains information and direction for principal operations inspectors (POI) about material appropriate for air carrier crewmember indoctrination training courses and the policy for reduction of programmed training hours during labor disputes.

2. BACKGROUND. Recent labor disputes highlighted possible problems with crewmember training. To determine what problems may exist, the Flight Standards Service reviewed the flight crewmember and flight attendant training curricula of major airlines. Review of Federal Aviation Administration (FAA)-required crewmember indoctrination course curricula showed that some curricula included material not pertinent to the Federal Aviation Regulations (FAR), to flight conduct, or to aviation safety. Labor disputes also highlighted the importance of managing the reduction of programmed hours during labor disputes.

3. DIRECTION.

A. Indoctrination Training.

(1) It is important that the 40 programmed hours of indoctrination training contain only subjects that are pertinent to the safety assignments of crewmembers. The guidance in FAA Order 8400.10, ''Air Transportation Operations Inspector's Handbook,'' regarding indoctrination course material training will be revised. Specifically, indoctrination training should include the following:

-- Duties and responsibilities of crewmembers

-- Appropriate provisions of the FAR

-- Contents of the certificate holder's operating certificate and operations specifications

(2) Any review of these requirements should ensure that subjects are related to the safety responsibilities of the crewmembers. Subject areas such as company history, company organization, and scheduling may be credited toward programmed hours if they show a direct relationship to the FAR, to flight operations, or to flight safety. Employee compensation/benefits and contracts, grooming, uniform regulations, pass benefits, and other similar subjects are not appropriate in the 40 programmed hours of FAA-approved indoctrination training.

B. Curriculum Subjects. Subjects such as company organization and description should be changed to company organization and operating philosophy as it relates to the way the company controls its flight operations and the crewmembers' role in those operations. An example is provided by the subject of general forms, records, and administrative procedures. This subject should only be part of the 40 hours of indoctrination training if the records are related to the operation of the flight. For example, mechanical discrepancy forms would be related to the operation of the flight and could be included in the course. Employee standards and rules of conduct should only be part of the 40 programmed hours as this discussion relates to safety.

C. Daily Training Hours. To ensure that students have adequate time to assimilate subject material, attend to personal needs, and receive adequate rest, the daily hours of training activity should be limited to 10 consecutive hours in any 24-hour period. At least 1 hour and 30 minutes of this 10 consecutive hours should be devoted to breaks that are distributed throughout the 10 hours; for example, one 15-minute break in the morning, 1 hour for lunch, and one 15-minute break during the afternoon. Thus, a student could only accumulate 8 1/2 programmed hours of training during that period of 10 consecutive hours.

D. Reduction of Training Hours. Many air carrier training program indoctrination courses may be reduced by 1, 2, or several hours depending on whether the subject matter can be covered adequately in accordance with the standard in FAR 121.405. (FAR 121.405 states, in part, that the Administrator should consider the training aids, devices, methods, and procedures listed in the certificate holder's curriculum as stipulated in FAR 121.403 that increase the quality and effectiveness of the teaching/learning process.) However, the programmed hours for indoctrination training should not be reduced below 32 hours. These 32 hours should contain subjects listed in the FAR and follow the policy as outlined above.

E. Revisions After Final Approval. In accordance with FAR 121.405(e), the FAA may require revisions, including additional hours, to a training program that has been granted final approval. POI's should work with their assigned certificate holders to identify any areas, including number of programmed hours, that need to be changed and to obtain a firm schedule for the completion of these changes.

F. Specific Changes to FAA Order 8400.10. Handbook guidance regarding indoctrination training will be modified. Specifically, the charts on pages 3-205 and 3-210 and paragraph 377 (all references are in Change 1) showing company history, contracts, and employee compensation and benefits as subjects acceptable for inclusion in indoctrination training will be changed to reflect the policy as outlined above. Additional guidance will be provided to limit the daily hours of training to 10 hours or less. Paragraph 371 on page 3-205 will also be changed so credit will be given only to those subjects that are easily transferred from one air carrier to another. Typically, this would include knowledge of the FAR, but very little else. Additional credit could be given for the quality of the training, including instructor to student ratio, teaching aids, size of class, and other factors, as listed in FAR 121.401(d) and 121.405(d). The handbook discusses flight attendant indoctrination training. The flight attendant training chapter will be changed to emphasize that subjects covered in indoctrination training shall pertain to the safety duties of all crewmembers.

G. Training Program Changes During Periods of Labor Unrest. POI's should be aware of the national attention usually focused on an air carrier during a period of labor unrest, bankruptcy, or other newsworthy periods of stress for the carrier. FAA approval for changes during these periods may give an impression of unusual support for the carrier. Therefore, any differences in training programs should be coordinated with AFS-200 through AFS-500.

4. ACTION. POI's are requested to ensure that their assigned certificate holders' crewmember (both flightcrew and flight attendants) indoctrination training includes the following:

-- Only appropriate subjects during the credited programmed hours

-- At least 32 programmed hours, even if hours were reduced in accordance with the standard specified in FAR 121.405(d)

NOTE: Any programs that may be considered for approval during a labor dispute are to be brought to the attention of AFS-200 and AFS-500 before initial or final approval is granted.

5. INQUIRIES. This HBB was developed by AFS-200. Any comments or suggestions concerning this bulletin should be addressed to AFS-203 at (202) 267-3735.

6. LOCATION IN HANDBOOK. The material covered in this HBB will be incorporated by AFS-550 in volume 3, chapter 2, section 3, paragraph 371, of the 8400.10 handbook. Until the handbook is updated, inspectors should make written reference to this bulletin in the margin next to the indicated paragraph.

/s/
David R. Harrington

ORDER:	8400.10
APPENDIX:	3
BULLETIN TYPE:	Handbook Bulletin for Air Transportation (HBAT)
BULLETIN NUMBER:	HBAT 94-11
BULLETIN TITLE:	Airman Certification (Type Rating) Procedures for Certain Derivative or Related Aircraft Types
EFFECTIVE DATE:	8-12-94

1. PURPOSE. This bulletin contains guidance to be used by inspectors who are conducting airman certification using the information provided in Advisory Circular (AC) 120-53, "Crew Qualification and Pilot Type Rating Requirements for Transport Category Aircraft Operated Under FAR Part 121," and in the Flight Standardization Board (FSB) report applicable to a specific aircraft. This bulletin also describes the procedures to be used for conducting type rating checks for certain derivative or related aircraft types (such as B747 pilots applying for type ratings in a B747-400 or A320 pilots applying for type ratings in an A340 following completion of an approved cross crew qualification (CCQ) program).

2. BACKGROUND. AC 120-53 was published in May of 1991 to standardize airman certification credits. AC 120-53 describes standards that determine which credits are appropriate for an aircraft type and its derivative related types of aircraft, and how these credits should be applied during the certification process. Operators (or training centers) with an approved FAR Part 121 program, including FAA–approved operator differences requirements (ODR) tables (see the applicable FSB report) may seek credit for type rating certification of airmen who have completed the specified program. Inspectors may then permit credit during the oral examination or practical test in accordance with FSB report provisions.

3. REFERENCES. For airman certification situations where previous credit is not a factor, volume 5 of FAA Order 8400.10, Air Transportation Operations Inspector's Handbook, should be used. It specifies airman certification procedures which include conduct of type rating checks, use of job aids, processing of documentation, and other related items. This information, in addition to the information contained in the applicable FSB report (such as type rating designations, maneuvers, and information) contains the necessary guidance to accomplish airman certification.

A. FAR Parts 61 and 121 Requirements. In accordance with the FSB report, most operators treat qualification in aircraft such as the B747-400 separately from earlier B747 variants. In such instances, the FAA addresses checking for the B747 and B747-400 separately and independently. For example, a complete check is accomplished in accordance with applicable FAR Parts 61 and 121 requirements in either variant group. A similar situation is likely for some crews who will be flying the A340. A340 pilots who qualify through a full course (without previous A320 experience and without seeking credit) will need to complete full checks in accordance with FAR Part 61, and if applicable, FAR Part 121, Appendix H. In such cases, the procedures in FAA Order 8400.10 address the situation adequately.

B. Exceptional Instances. An applicant may qualify for credit based upon prior qualification, when a "differences" based qualification between variants or related types is permitted by the FSB. For example, the differences from a B757 to a B767 were determined to be negligible, and an airman qualified in a B767 subsequently received a B757 type rating without further demonstration.

C. Credit For Previous Qualification. Credit for previous qualification may range from complete credit (such as B757 to B767), to significant credit (such as A320 to A340), to very limited credit (such as B747 to B747-400). When credit is permitted, the applicant meets the certification requirements by combining credit for items previously completed in the aircraft in which the airman is qualified, and the additional items accomplished for the new variant or related type.

(1) Credit Determination by the FAA. The FAA determines if credit is permitted and how that credit applies to airman certification for each specific aircraft type, variant, or related type through the associated FSB report.

(2) FSB Report. The FSB report is primarily intended for aircrew program managers (APM), aircrew program designees (APD), FAA airman certification inspectors, principal operations inspectors (POI), and check airmen. When issued, the reports are available through either the aviation safety analysis system (ASAS) or from an FSB chairman. An FSB chairman can be located in the assigned FAA aircraft evaluation group (AEG). Reports are available for the majority of aircraft that are used in air carrier operations. The reports may be made available to interested operators, check airmen, and APD's.

D. Credit Applicability. When credit does apply, sections 6.6 and 10 of AC 120-53 address how airman certification credits or constraints may be applied to a particular type, variants, or related aircraft types. When combined with the information in the pertinent FSB report (typically sections 2, 3, 4, 5, 7, and 10) and the ODR tables approved for that operator by the POI, inspectors and check airmen should have adequate information to determine what (if any) credits may be allowed during an additional type rating certification of an applicant.

4. FAA INSPECTOR AND APD AIRMAN CERTIFICATION PROCEDURES. In instances where credit has been permitted by the FSB and the FAA, approved ODR tables are used, and an airman has been qualified in accordance with those tables, an airman applicant may be issued an appropriate additional type rating upon completion of the items specified in the "checking" column of the ODR tables. The applicant may be credited for other items by previous qualification in the base aircraft. This is applicable only to airmen qualified in accordance with an FAA-approved program (for example, POI-approved ODR tables meeting FSB and AC 120-53 provisions).

A. Differences Credit. To obtain differences credit permitted by the FSB during airman certification, an airman must be trained and checked in accordance with a program specifically approved for a particular FAR Part 121 operator or training center. The airman must have successfully completed original qualification and received a type rating in the base aircraft, and have been trained in accordance with the FSB and ODR provisions for the variant or related type aircraft for which the check is to be conducted.

B. Time Limits. Unless specified as a condition of the ODR tables there are no constraints/requirements between the time that an airman is initially qualified (or receives a proficiency check) in the base aircraft, and the time required to complete the training and checks in the variant or related aircraft type.

Unless approved by the POI, applicants should take the type rating practical test within 60 days of completing the training specified in the FSB and ODR for the variant or related type aircraft. For new aircraft entering initial FAR Part 121 service, the FSB determines schedules and any additional requirements that may relate to the issuance of Letters of Competency, or Temporary Certificates. Multi-phase type rating checks in the new aircraft will be accomplished in accordance with volume 5, chapter 1, section 1, paragraph 17, of FAA Order 8400.10 and FAR Parts 61 and 121.

Oral examinations should focus on pertinent ODR table items. While any topic may be examined, inspectors may allow credit for areas common to the base aircraft.

C. Checks. Checks should be conducted in accordance with the FSB report and provisions of the approved ODR tables for that operator that are applicable to the designated aircraft.

(1) Levels C, D, and E Checking Items. The items listed in the FSB report and ODR tables should be addressed using at least one of the following methods: training device, simulator, or aircraft (as appropriate to the situation). Each of Level C, D, or E items shown in the checking column of the ODR tables should be addressed during the practical test. Items may be completed separately, combined as appropriate, or included within other items at the discretion of the person conducting the check.

(2) Other Checking Items. Checking items (other than those at Level C, D, or E) and any other pertinent FAR Part 61 or 121 items may be addressed at the discretion of the FAA inspector (or APD). If not performed, items may be credited based on previous demonstration during the oral exam, or completion during initial qualification in the base aircraft.

D. Testing Procedures. Inspectors or APD's should refer to the guidance in volume 5 of 8400.10 and the Practical Test Standards for the oral and practical test(s). However, items in the Test Standards that are not required by the ODR tables may be credited based on the applicants previous qualification in the base aircraft.

Credit is permitted for any item in the Test Standards which is not specifically required by the ODR tables. If a multi-segment check is to be completed, credit may be indicated by marking a "C" next to the appropriate item.

(1) Testing Discretion. Inspectors retain the discretion to test any area referenced by the FAR if there is a doubt as to the competency of the airman or about the adequacy of the program being used to prepare the applicant.

(2) Failure of the Test. If the applicant fails the test, then the inspector should document the events that were failed and require retesting. Failure of the test has no effect on qualification in the base aircraft. Repeated failure of tests by different applicants should be reported to the POI for possible remedial action regarding the approved program. These procedures are primarily intended for variants or related types identified as having Level E (checking) differences in the FSB report and operator's ODR tables (such as the B747/B747-400 and the A320/A340). For other programs having different checking levels (each less than Level E), requirements are described in the respective FSB report.

NOTE: Operations inspectors who are not familiar with an operator's or training center's approved ODR tables should coordinate with the pertinent Certificate-Holding District Office (CHDO), POI, or APM regarding applicable checking provisions before conducting checks using these procedures.

(3) B747-400 Type Rating Checks. Inspectors who conduct B747-400 type rating checks using approved ODR tables which credit previous B747 qualification and experience should note that an additional B747-400 aircraft check is not typically necessary. Qualification can be completed with a Level E check (an example would be when using an approved simulator) because credit is permitted for the earlier successful B747 qualification demonstration. This is the case regardless of whether a FAR Part 121, Appendix H program is used or not.

(4) A340 Type Rating Checks. Inspectors or APD's conducting A340 type rating checks should note that check and credit items based on ODR tables are applicable only to those crews previously qualified in the A320 "who have completed an approved ODR program" (cross crew qualification (CCQ)). Applicants who do not complete an approved ODR program must be given full checks in accordance with FAR Parts 61 and 121, and checking credit is not appropriate, regardless of previous qualification.

(5) Completion of FAA Form 8710-1. FAA Form 8710-1, Airman Certificate and/or Rating Application, dated 7-92, should be completed in accordance with standard instructions. Most applications, even when reflecting credits allowed by the FSB and ODR tables, will have the routine entries completed (such as the Completion of the Required Test block, the Instructor's Recommendation block, and the Evaluation Record... block). However, in some instances where prior qualification credit is permitted (such as when no aircraft check is necessary), the application form may have pertinent entries in various blocks (such as Evaluator's Record...Aircraft Flight Check...) marked as

"NOT APPLICABLE." Other designations described in FSB reports may also be used on FAA Form 8710-1. (These procedures are effective until release of a new version of Form 8710-1.) Upon distribution of the new form, appropriate instructions will be provided.

5. INQUIRIES. This handbook bulletin was developed by AFS-210. Any questions or comments concerning this bulletin should be directed to the Air Carrier Training Branch AFS-210, at (202) 267-3718.

6. LOCATION IN HANDBOOK. The material covered in this handbook bulletin will be incorporated by AFS-550 into volume 5, chapter 1, section 1, paragraph 13 of FAA Order 8400.10. Until the handbook is updated, inspectors should make written reference to this bulletin in the margin next to the indicated paragraph.

/s/
David R. Harrington

ORDER:	8400.10
APPENDIX:	3
BULLETIN TYPE:	Handbook Bulletin for Air Transportation (HBAT)
BULLETIN NUMBER:	HBAT 94-12
BULLETIN TITLE:	Use of Flight Control Guidance Systems for Automatic Landing Operations Other Than Categories II and III
EFFECTIVE DATE:	10-05-94

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1. PURPOSE. This HBAT contains information for air carriers to ensure that the operators and flightcrews are familiar with both FAA and certificate holder guidance concerning disturbances to aircraft Automatic Flight Control Guidance Systems (AFCGS) while conducting automatic landings (autolands) in other than Category (CAT) II/III weather conditions. Recent questions indicate that there is a need to review existing guidance concerning these operations.

2. BACKGROUND.

A. Common Practices. It is a common practice for air carriers to conduct AFCGS approaches and/or autoland operations when the runway visual range (RVR) is at or below RVR 4,000. It is also common for carriers to conduct these operations during CAT I or better weather conditions to satisfy maintenance, training, or reliability program requirements. To achieve the necessary autoland rate, some percentage of these autolands are conducted at runways that are approved for CAT I operations.

B. Successful Autoland Dependencies. The successful outcome of any AFCGS autoland is dependent on the performance of the aircraft AFCGS and the performance of the ground-based instrument landing system (ILS). The course structure and the integrity of an ILS can be compromised when protection of the ILS critical areas cannot be assured. The localizer is particularly sensitive due to its larger signal volume in the airport area. Surface and airborne traffic and stationary vehicles, temporarily parked in these critical areas can create a deflection in, or a disturbance to, the ILS signal. The AFCGS will respond to this interference in a manner dependent upon the effect the interference has on the ILS signal characteristics and the control methods of the AFCGS. Observed AFCGS responses to ILS interference to date range from no effect to a deviation from the runway centerline after touchdown.

3. ILS CRITICAL AREA PROTECTION. Flight inspection criteria, integrity monitor alarms, ILS antenna designs and associated critical areas are established for all CAT I, II and III ILS's. Current ILS localizer and glide slope critical areas are described in FAA Order 6750.16B, "Siting Criteria for Instrument Landing Systems," Change 2. Airport operators are responsible for installing and maintaining appropriate signs and markings delineating taxi lanes, hold lines, and no parking areas associated with these ILS critical areas. Critical area signing and marking are contained in Advisory Circulars 150/5340-18C and 150-5340-1, respectively.

A. Air Traffic Operations.

(1) Flight Procedures. The current edition of FAA Order 7110.65, "Air Traffic Control," paragraph 3-84, specifies air traffic procedures for ILS critical area protection. In general, the runway's appropriate CAT I, II, or III critical area is restricted for all aircraft and vehicle operation whenever any of the following conditions exist:

1) the reported ceiling is less than 800 feet
2) the visibility is less than 2 miles

3) an aircraft on the ILS approach is inside the outer marker (OM) or fix used in lieu of the OM, except a preceding aircraft approaching the same runway or another runway may pass over or through the area while landing, taking off, or exiting the runway.

(2) Ground Procedures. In addition, vehicles or aircraft operations are not authorized in or over the area when an arriving aircraft is inside the middle marker when conditions are less than 200 feet and/or RVR 2000. The entire longitudinal axis of the preceding aircraft must be clear of the CAT III critical area (approximately 250 feet either side of centerline) before the aircraft on the ILS approach, or an autoland approach, reaches the middle marker (MM) or 200 feet above ground level (AGL).

B. Limitations. While it may appear to be desirable to completely restrict critical areas from all surface traffic, this is not generally feasible since normal access to and from the runway, terminal areas, and ramp may necessitate movement through these areas. In general, the localizer critical area for CAT II/III airports/ runways extends along the runway approximately 250 feet on either side of centerline. CAT II/III critical area dimensions are based on the assumption that the entire longitudinal axis of the aircraft/vehicle is clear of this area. Aside from necessary ancillary components, ILS critical areas would need to be established in order to conduct operations in CAT II/III weather conditions at an ILS airport/runway currently limited to CAT I operations.

C. Serving a CAT II/III Airport/Runway. The commissioning, periodic flight inspection, and facility maintenance of an ILS serving an airport/runway with a published CAT II/III instrument approach includes an analysis of the ILS performance along the runway through rollout to confirm that the ILS facility will support CAT II/III operations, as appropriate.

D. Serving a CAT I Airport/Runway. The commissioning, periodic flight inspection, and facility maintenance of an ILS facility serving a CAT I airport/runway does not include an analysis of the ILS performance inside the runway threshold or along the runway. However, a number of CAT I instrument approach facilities have sufficient signal characteristics to support AFCGS autoland operations to CAT I minima. Operations specifications paragraph C61b(2) allows the operator to make this assessment.

NOTE: The Airman's Information Manual (AIM), paragraph 1-10, provides guidance to pilots when conditions are such that protection of the ILS critical areas are not required and an arriving aircraft advises it will conduct a "Coupled," "CAT III," "Autoland" or similar phrased operation.

4. ISSUANCE OF OPERATIONS SPECIFICATIONS.

A. Paragraphs C59 and C60. Air Carrier operations specifications paragraphs C59 and C60 are issued to the certificate holder to authorize CAT II and III, respectively. All CAT III and certain CAT II operations are predicated on the use of AFCGS for autoland.

B. Paragraph C61. When requested by the certificate holder, Operation specifications paragraph C61 is issued to authorize the use of the AFCGS autolands in accordance with FAR Section 121.579(c) or FAR Section 135.93(d) for other than CAT II and III operations. Guidance for the issuance of Operation specifications paragraphs is contained in Volume 4 of FAA Order 8400.10, "Air Transportation Operations Inspector's Handbook."

NOTE: Authorization of any AFCGS autoland operation requires that the operator's approved training curriculum include training on autoland operations and that the autoland equipment is properly certified and maintained.

5. POLICY. When requested by the certificate holder, operations specifications paragraph C61 has been and will continue to be issued for AFCGS landing operations in accordance with FAR Section 121.579(c) or FAR Section 135.93(d) for other than CAT II or III. POI's for air carriers who have been issued any one or more of operations specifications paragraphs C59, C60, or C61 are requested to contact their operators and ensure that their method of assessing CAT I runways for autoland and their approved training curriculum are consistent with the above referenced guidance. The operator should have training on autoland operations and documentation that the autoland equipment is properly certified and maintained. Air carriers with questions regarding the suitability of certain CAT I ILS runways for conducting autolands should submit a request to AFS-400 through their assigned POI.

NOTE: Air carrier flightcrews are reminded to remain vigilant for upset to the ILS, with resulting unexpected flight control movements, when conducting autolands on any category ILS when critical area protection is not assured by air traffic control. Pilots should be prepared to immediately disconnect the autopilot and take appropriate action should unsatisfactory AFCGS performance occur.

6. INQUIRIES. This handbook bulletin was developed by AFS-410. Any questions or comments concerning this bulletin should be directed to the Operations Section of AFS-410 at (202) 267-7211.

7. LOCATION IN HANDBOOK. The material covered in this handbook bulletin will be incorporated by AFS-200 into volume 4, chapter 2, section 3 of FAA Order 8400.10. Until the handbook is updated, inspectors should make written reference to this bulletin in the margin next to the indicated paragraph.

/s/
David R. Harrington

ORDER:	8400.10
APPENDIX:	3
BULLETIN TYPE:	Flight Standards Handbook Bulletin for Air Transportation (HBAT)
BULLETIN NUMBER:	*HBAT 94-13
BULLETIN TITLE:	Traffic Alert and Collision Avoidance System (TCAS) II Implementation Issues Specific To FAR Part 129 Operators
EFFECTIVE DATE:	12-01-94
TRACKING NUMBER:	N/A

1. PURPOSE. This handbook bulletin provides policy guidance to international field office inspectors and foreign air carriers concerning TCAS II installation and operational requirements for foreign air carriers who conduct their operations in the United States in accordance with Federal Aviation Regulations (FAR) Part 129. This bulletin cancels FSAT 93-35 dated 10/22/93.

2. BACKGROUND.

A. FAR Section 129.18(a) requires that after December 30, 1993, no foreign air carrier may operate in the United States a turbine powered airplane that has a maximum passenger seating configuration, excluding any pilot seat, of more than 30 seats, unless it is equipped with-

(1) A TCAS II traffic alert and collision avoidance system capable of coordinating with TCAS units that meet the specifications of TSO C-119, and

(2) The appropriate class of Mode S transponder.

B. FAR Section 129.14 Specifies the maintenance program and minimum equipment list (MEL) requirements that foreign air carriers' and foreign persons, who engage in common carriage, must comply with when operating U.S.-registered aircraft within or outside the United States.

C. FAR Section 129.11, in part, requires that each foreign carrier shall conduct its operations within the United States in accordance with operations specifications issued by the Administrator and in accordance with the Standards and Recommended Practices contained in Part I (International Commercial Air Transport) of Annex 6 (Operation of Aircraft) to the Convention on International Civil Aviation Organization (ICAO).

D. ICAO Annex 6, Section 6.1.2, specifies that; ''The operator shall include in the operations manual a MEL, approved by the State of the Operator which will enable the pilot-in-command (PIC) to determine whether a flight may be commenced or continued from any intermediate stop should any instrument, equipment, or systems become inoperative.'' Attachment G. to ICAO Annex 6 contains information supplementary to Section 6.1.2.

E. Several foreign air carriers have asked the FAA for clarification on TCAS II requirements for various operational situations. Paragraph 3 of this bulletin addresses those issues.

3. ACTION. All FAR Part 129 Principal Operations Inspectors (POI) whose operators are subject to FAR Section 129.18 shall provide the following policy information regarding TCAS II to their operators.

A. MEL guidance.

(1) The guidance contained in appendix 2 of AC 120-55A, ''Air Carrier Operational Approval and Use of TCAS II,'' applies to operators of U.S.-registered aircraft.

(2) Operators of foreign registered aircraft shall have a MEL as required by ICAO, Annex 6, Section 6.1.2.

(3) When foreign operators operate foreign registered aircraft having a type design approved under a U.S. type certificate, the foreign operator TCAS MEL requirements should be equivalent to the U.S. TCAS MEL requirements. Refer to paragraphs 3B. and 3H. below for additional guidance.

B. The FAR Part 129 operations specifications may allow operation of aircraft with inoperative TCAS equipment in U.S. airspace for a specified time, usually not to exceed 10 calendar days.

C. TCAS is not required for NON-REVENUE ferry or delivery flights. However, if TCAS is installed and operative for such flights in U.S. airspace, it must be operated.

D. Non-TCAS equipped aircraft operating outside U.S. airspace en route to a foreign destination may use a U.S. airport as a weather alternate. Non-TCAS equipped aircraft may penetrate US airspace or land at a US airport as a result of an emergency or other unplanned diversions such as severe weather avoidance.

E. Aircraft Substitutions.

(1) Substitution of TCAS equipped aircraft with non-TCAS equipped aircraft for flights in U.S. airspace when TCAS-equipped aircraft are unserviceable, will require an exemption from FAR Section 129.18. Approval or denial for such exemption requests will be determined on individual merit.

(2) A foreign operator leasing from another foreign operator a non-TCAS II equipped aircraft to supplement scheduled capacity (i.e.; second section flight), may not operate in U.S. airspace without an exemption from FAR Section 129.18.

F. Exemptions or Deviations.

(1) A foreign operator may petition for an exemption from the TCAS requirements of FAR Section 129.18.

(2) FAR Section 129.18 currently has no provision for deviations and none are contemplated.

G. Cargo only aircraft, which may have passenger seats installed for the use of non-revenue passengers such as cargo handlers, are not required to have TCAS equipment installed on the aircraft.

H. When applicable, the following standard paragraph shall be added to Part A of the FAR Part 129 Operations Specifications:

OPERATIONS SPECIFICATIONS

A19. TRAFFIC ALERT AND COLLISION AVOIDANCE SYSTEM (TCAS) (11/18/94). The foreign air carrier shall comply with the following requirements for TCAS II in preparation for, and during, flight in U.S. airspace.

a. An appropriate Mode S transponder, integral to the aircraft TCAS II system, must be installed and operated on a suitable Mode A code specified by ATC.

b. After December 31, 1994, no aircraft operations under the authority of these operations specifications may be conducted unless collision avoidance system software logic, Version 6.04A Enhanced, has been installed in the TCAS II computer unit of each aircraft listed in these operations specifications that is subject to the TCAS II equipment requirements contained in FAR Section 129.18.

c. A valid, unique, aircraft specific mode S transponder identification address code must be assigned to each TCAS II equipped airplane listed in these operations specifications and that address code must be set and operated for each flight in U.S. airspace.

d. No aircraft operations, under the authority of these operations specifications, may be conducted if the TCAS II system, including its integral mode S transponder, is inoperative unless:

1. For U.S.-registered aircraft, the operator has obtained and uses an approved MEL containing the authority to dispatch the aircraft with a TCAS system or component temporarily inoperative; or

2. For foreign registered aircraft, the operator has obtained and uses a MEL, acceptable to the State of the operator, containing the authority to dispatch the aircraft with a TCAS system or component temporarily inoperative. However, in no case may the repair category intervals for the TCAS system or component be greater than those repair intervals authorized by the Administrator in MEL's approved for use in U.S.-registered aircraft.

e. Flight crewmembers must be properly trained and qualified in the procedures for the operational use of TCAS II as specified by ICAO, Advisory Circular 120-55 as amended, or other equivalent criteria that is acceptable to the FAA. These procedures must be used when aircraft operations are conducted in the United States.

f. Unsafe conditions or performance, related to TCAS operation which potentially could affect continued safe operations in the U.S. National Airspace System, must be reported to the foreign air carrier's FAA POI within 10 days of the time that such a hazard is identified.

I. In reference to paragraph 3. H. (Sample Operations Specification) above, valid address codes are those codes consistent with the ICAO mode S code allocation plan and plan of the State of registry for the specific aircraft. All U.S.-registered aircraft have been issued a unique mode S code by the Aircraft Registry, AVN-450. The mode S code for U.S.-registered aircraft can be obtained through the Integrated Safety Information Subsystem (ISIS); or, by referring to the Aircraft Registration Certificate. The unique address code when properly set may not be altered, set to a duplicated code, or set to a code that potentially interferes with ATC or TCAS safety functions (e.g. must not be set to all "1's" or all "0's," or the country code without the unique aircraft specific code as may have occurred if a mode S transponder was installed in a particular aircraft as a replacement for an ATCRBS transponder).

J. Operators having special requests regarding TCAS authorizations or procedures should contact their POI at the appropriate FAA Flight Standards Service International Field Office (IFO).

4. REPORTING. Inspectors should use appropriate Program Tracking and Reporting Subsystem (PTRS) activity codes when conducting technical support, certification, or surveillance of FAR Part 129 air carrier operators.

5. INQUIRIES. Any questions concerning this bulletin should be directed to AFS-220 at (202) 267-3718.

6. LOCATION IN HANDBOOK. The material covered in this handbook bulletin shall be incorporated by AFS-200 in FAA Order 8400.10, "Air Transportation Operations Inspector's Handbook," in volume 2, chapter 4, section 2. Until the new material is incorporated, inspectors should make written reference to this bulletin in the margins next to the indicated paragraphs.

/s/

David R. Harrington
Manager, Air Transportation Division, AFS-200

ORDER:	8400.10
APPENDIX:	3
BULLETIN TYPE:	Flight Standards Handbook Bulletin for Air Transportation (HBAT)
BULLETIN NUMBER:	HBAT 94-14
BULLETIN TITLE:	Policy Statement on Stage 2 Airplanes
EFFECTIVE DATE:	12-01-94

1. PURPOSE. This bulletin provides policy guidance from the Office of Environment and Energy (AEE) concerning the operation of Stage 2 airplanes during the phased transition to an all-Stage 3 fleet. This guidance is designed to assist principal operations inspectors (POI) in issuing revised operations specifications (OpSpecs) concerning operations of certain Stage 2 airplanes.

2. BACKGROUND.

A. On September 25, 1991, Federal Aviation Regulations (FAR) Part 91 was revised to implement a series of regulations (FAR Sections 91.851-91.875) to accomplish a phased reduction of Stage 2 turbojet airplanes operating in the contiguous United States (U.S.). This requirement comes from the Airport Noise and Capacity Act of 1991 (ANCA). The law states that after December 31, 1999, no person may operate a Stage 2 airplane in the contiguous U.S. Phased compliance with the prohibition begins December 31, 1994; after that date, all operators of Stage 2 turbojet airplanes over 75,000 pounds must comply with FAR Section 91.865 or 91.867 either by having reduced the number of Stage 2 airplanes it operates by 25 percent (of its established starting level) or by having met a fleet mix of at least 55 percent Stage 3 airplanes. Further reductions are required in 1996 and 1998.

B. There are several methods of reaching these interim compliance requirements, including aircraft retirement, replacement, the addition of noise abatement retrofit equipment, or changes in the operating restrictions for certain eligible airplanes.

C. In addition, since November 1990, it has been illegal to import a Stage 2 airplane and operate it in the contiguous U.S. Some of these restrictions and compliance methods must be reflected in an operator's OpSpecs. Specific guidance on the issuance of those OpSpecs may be found in HBAT 94-15, "Operations Specifications for Certain Stage 2 Airplanes." This document presents the policy of AEE that underlies those OpSpecs restrictions.

3. POLICY. POI's having certificate management responsibility for operators of Stage 2 airplanes should read and be familiar with the policies in this document. POI's should contact the operations branch of their Regional Flight Standards Division to obtain the instructions and specific pages necessary to issue the OpSpecs.

4. DEFINITIONS. Several terms have specific meaning when related to the noise operating rules and phased transition rules of FAR Part 91:

A. Fleet: An operator's fleet consists of all turbojet aircraft over 75,000 pounds listed on its OpSpecs (or otherwise operated by it, if it does not have OpSpecs). For foreign air carriers, the fleet is all airplanes on U.S. OpSpecs.

B. Stage 2: The airplane meets Stage 2 noise levels as defined in FAR Part 36.

C. Stage 3: The airplane meets Stage 3 noise levels as defined in FAR Part 36.

D. Dual-Certificated: Dual-certificated airplanes are those that are certificated to operate in either a Stage 2 or Stage 3 configuration. The only airplanes dual-certificated by the Federal Aviation Administration (FAA) were certain Boeing 747's, -300 series or earlier. For noise compliance purposes, these airplanes are considered

Stage 2 unless the operator gets a supplemental type certificate to make the airplane Stage 3 only, or unless the operator voluntarily limits the operation to Stage 3 only. Voluntary limitations are recorded in paragraph A26b of the OpSpecs, and require a placard in the airplane. Contact AEE-300 for more information if necessary.

E. Imported: A Stage 2 turbojet airplane over 75,000 pounds that was not U.S. owned on November 5, 1990, but was purchased by a U.S. entity after that date. No imported airplane is allowed to operate in the contiguous U.S. (see FAR Section 91.855). This is known as the nonaddition rule and was part of the ANCA. Imported airplanes are allowed to enter into the contiguous U.S. (until December 31, 1999) for maintenance under the provisions of FAR Section 91.857 (a special flight authorization is required). These aircraft are sometimes known as ''aircraft imported into a noncontiguous state,'' a somewhat confusing term that acknowledges that the aircraft may be owned and registered in the U.S., but not operated in the contiguous U.S. Questions of U.S. ownership should be directed to AGC-210.

F. Operations Specifications: An enumeration of airplanes by type, model, series, and serial number operated by the operator or foreign air carrier on a given day, regardless of how or whether such airplanes are formally listed or designated by the operator.

5. MEANS OF COMPLIANCE.

A. Because ALL operators of turbojet airplanes over 75,000 pounds are affected by the phased transition regulations, the FAA recognized that compliance with the regulations would take many forms. Every operator was required to establish a ''base level'' of the number of Stage 2 turbojet airplanes it operated during a certain period. Under one method of compliance, that number would be used as the starting point for the reduction. After December 31, 1994, an operator choosing this method would have to eliminate 25 percent of its Stage 2 airplanes. This can be accomplished by retiring them, retrofitting them with noise abatement technology, or by restricting their operation.

B. There are two acceptable methods of restricting operation. In the case of a dual-certificated 747, the airplane can be designated (on OpSpecs and in the airplane) as operating in a Stage 3 configuration only while in the contiguous U.S. Once that designation is made, the operator may count that as a Stage 3 airplane for compliance purposes. In another case, an operator may restrict one or more of its Stage 2 airplanes to operation outside the contiguous U.S. only. The airplane may remain in the operator's fleet, but cannot operate to or from the contiguous U.S. Operators that operate primarily within Alaska or Hawaii are expected to choose this option. Each of these operational restrictions must be reflected in an operator's OpSpecs. See HBAT 94-15 for details on how to amend the OpSpecs. NOTE: If an operator chooses to remove a Stage 2 airplane from operation in the contiguous U.S., that Stage 2 airplane is no longer eligible for coverage under the exemption allowing continued use of a six-parameter digital flight data recorder (DFDR). If such an airplane is listed on the aircraft retirement schedule (ARS) required by that exemption (number 5593, including amendments A and B), it must be removed from the ARS and retrofitted with an 11-parameter DFDR before it is operated.

C. The second major means of compliance is for an operator to achieve a fleet mix of 55 percent Stage 3 airplanes after December 31, 1994. The same methods described above may be used to achieve this fleet mix.

D. It is important to remember that all operators of large jets are subject to the noise operating restrictions of FAR Part 91, regardless of the Part under which they conduct operations. Although the ANCA and the regulations do not affect actual flight operations within Alaska and Hawaii, operators must still show compliance with the noise regulations. As stated above, the expected means of compliance for those operators operating primarily or exclusively outside the contiguous U.S. is by restricting (on their OpSpecs) Stage 2 aircraft from operating in the contiguous U.S.

6. INQUIRIES. This HBAT was developed by AEE-300. Any questions or comments concerning the information in this bulletin should be directed to AEE-300 at (202) 267-3553.

7. LOCATION IN HANDBOOK. The material covered in this handbook bulletin will be incorporated by AFS-200 in volume 3, chapter 12, section 2, of FAA Order 8400.10, ''Air Transportation Operations Inspector's

Handbook.'' Until the handbook is updated, inspectors should make written reference to this bulletin in the margin of the indicated section.

/s/
David R. Harrington

ORDER:	8400.10
APPENDIX:	3
BULLETIN TYPE:	Flight Standards Handbook Bulletin for Air Transportation (HBAT)
BULLETIN NUMBER:	*HBAT 94-15
BULLETIN TITLE:	Operations Specifications for Certain Stage 2 Airplanes
EFFECTIVE DATE:	12-01-94

1. PURPOSE. This bulletin provides instruction to principal operations inspectors (POI) for issuance of revised operations specifications (OpSpecs) concerning operations of certain Stage 2 airplanes, as listed below.

2. BACKGROUND. On September 25, 1991, Federal Aviation Regulations (FAR) Part 91 was revised to include restrictions on the operations of Stage 2 airplanes in the contiguous United States (U.S.). Three of these restrictions must be reflected in an operator's OpSpecs. One restriction concerns imported Stage 2 airplanes (see FAR Section 91.857). The second restriction concerns ''dual-certificated'' Boeing 747's that an operator wants to change to Stage 3 operation only in order to comply with the phased transition to stage 3 (see FAR Section 91.865). The third restriction concerns other airplanes that were removed from operation in the contiguous U.S. in order to comply with the phased transition rule. In conjunction with this HBAT, the Air Transportation Division (AFS-200) issued HBAT 94-14, ''Policy Statement on Stage 2 Airplanes.'' HBAT 94-14 sets forth the conditions that an operator must meet prior to the issuance of the subject OpSpecs. At present, the Operations Specifications Subsystem (OPSS) software will not provide the issuance of paragraph A26. Until the software can be upgraded, it will be necessary for POI's to make manual revisions to the OpSpecs. Additionally, POI's assigned to foreign flag air carriers shall make amendments to Part A of the foreign flag air carrier OpSpecs by adding new paragraphs A2 and A26.

3. ACTION. POI's having certificate management responsibility for operators and foreign flag air carriers of Stage 2 airplanes should contact the operations branch of their Regional Flight Standards Division to obtain the instructions and specific pages necessary to issue the OpSpecs.

4. INQUIRIES. AFS-500 developed this HBAT with the assistance of AEE-300. Direct any questions or comments concerning the procedures explained in this bulletin to AFS-500 at (703) 661- 0333, extension 5017. Direct any questions or comments concerning the policy reflected in this bulletin to William Albee (AEE-300) at (202) 267-3553.

5. LOCATION IN HANDBOOK. The material covered in this handbook bulletin will be incorporated by AFS-200 in volume 3, chapter 12, section 2, of FAA Order 8400.10, ''Air Transportation Operations Inspector's Handbook.'' Until the handbook is updated, inspectors should make written reference to this bulletin in the margin of the indicated section.

/s/
David R. Harrington

ORDER:	8400.10
APPENDIX:	3
BULLETIN TYPE:	Flight Standards Handbook Bulletin for Air Transportation (HBAT)
BULLETIN NUMBER:	HBAT 94-17
BULLETIN TITLE:	Pilot Training in Heavy Wake Vortex Turbulence: Awareness and Containment
EFFECTIVE DATE:	12-29-94
TRACKING NUMBER:	NTSB RCOMMENDATION A-94-45

1. PURPOSE. This bulletin meets a National Transportation Safety Board (NTSB) recommendation pertaining to training in wake vortex turbulence containment by pilots of aircraft that may produce heavy wake, including Boeing 757 aircraft.

2. BACKGROUND. The NTSB recently completed a special investigation of accidents involving wake vortex turbulence encountered during visual approaches. The Board's work raised questions about various issues, notably pilot knowledge related to the containment of heavy wake vortex turbulence. The Board found that pilots of heavy aircraft, heavier large aircraft, and specifically the B-757 aircraft (the heaviest type in its weight category), may be unaware of wake turbulence in two respects:

A. The consequences of the heavy wake produced by their aircraft in respect to lighter, following aircraft

B. Measures that they may take to contain wake turbulence for the benefit of lighter, following aircraft.

3. The following actions are strongly recommended. Pilots of heavy aircraft and heavier large aircraft that may produce strong wake, including the B-757, should use the following procedures during an approach to landing. These procedures should establish a dependable baseline from which pilots of in-trail, lighter aircraft may reasonably expect to make effective flightpath adjustments to avoid serious wake vortex turbulence.

A. Make every attempt to fly on the established glidepath, or if glidepath guidance is not available, to fly as closely as possible to a "3-to-1" glidepath.

EXAMPLE: At 10 miles from the runway, the aircraft should be at 3000' above the touchdown zone elevation (TDZE); at 5 miles the aircraft should be at 1500' above TDZE; at 4 miles, 1200'; at 3 miles, 900'; and so on, until a safe landing may be made. Techniques for deriving a "3-to-1" glidepath include using distance measuring equipment (DME), distance advisories provided by radar-equipped control towers, area navigation (RNAV) (exclusive of Omega navigation systems), global positioning system (GPS), and pilotage when familiar features on the approach course are visible to the pilot.

B. Fly as closely as possible to the approach course centerline, or to the extended centerline of the runway of intended landing, as appropriate to conditions.

C. Cross the runway threshold at a nominal height of 50' above TDZE.

D. Land within the touchdown zone.

4. POLICY. POI's are directed to ensure that initial, transition, and recurrent training programs for pilots of heavy category aircraft, heavier large category aircraft, and the Boeing 757 aircraft include discussion of the wake vortex turbulence hazard caused by such aircraft in respect to lighter, following aircraft. Those training programs also should include the wake vortex turbulence containment procedures recommended in this bulletin.

5. INQUIRIES. This FSIB was developed by AFS-210. Any questions may be directed to AFS-210 at (202) 267-3718.

6. LOCATION IN HANDBOOK. The material covered in this handbook bulletin will be incorporated by AFS-200 in volume 3, chapter 2, section 3, of FAA Order 8400.10, ''Air Transportation Operations Inspector's Handbook.'' Until the handbook is updated, inspectors should make written reference to this bulletin in the margin of the indicated section.

/s/

David R. Harrington

ORDER:	8400.10
APPENDIX:	3
BULLETIN TYPE:	Flight Standards Handbook Bulletin for Air Transportation (HBAT)
BULLETIN NUMBER:	HBAT 94-18
BULLETIN TITLE:	Management Involvement and Simulator Training in Part 135 Commuter Operations
EFFECTIVE DATE:	12-29-94
TRACKING NUMBER:	NTSB RCOMMENDATION A-93-70, A-93-71

1. BACKGROUND. The National Transportation Safety Board (NTSB) recently completed its investigation of a December 28, 1991, accident involving a Beech 1900C. The accident occurred during a night training flight and resulted in 3 fatalities.

A. The NTSB's investigation disclosed that the instructor pilot (IP) was providing instruction to two company first officers who were under consideration for advancement to captain. Part of the training involved flight with a "partial panel," and the IP had disabled the captain-trainee's attitude indicator. The accident occurred while the captain-trainee was flying practice VOR instrument approach with a disabled attitude indicator and a simulated failure of the right engine. The trainee lost control of the airplane at approximately 1,700 feet mean sea level and asked the IP to assume control. The IP declined and continued to coach the trainee on recovery procedures for an airplane nose-low and banked attitude. The airplane struck the water at a relatively high speed before it could recover from an unusual attitude.

B. The NTSB determined that the two probable causes of the accident were the IP's loss of altitude awareness and possible spatial disorientation, resulting in the loss of control of the airplane at an altitude too low for recovery, and the company management's lack of involvement in and oversight of its flight training program.

2. POLICY. Federal Aviation Administration (FAA) principal operations inspectors (POI) are directed to review their respective Part 135 commuters' organizational structure and to determine who within the organization has oversight responsibilities for training. Once these management personnel are identified, the POI's are directed to ensure that their personnel are actively involved in the air carrier's training program.

3. POI's are also directed to encourage the management of their respective commuter airlines to use approved flight simulators for pilot training and for qualification, competency, and instrument check purposes to the maximum extent feasible -- particularly that training, which involves hazardous maneuvers such as engine-out operations and recovery from unusual flight attitudes. (NTSB Safety Recommendation A-93-70, and 71).

4. INQUIRIES. This bulletin was developed by AFS-250. Any questions or comments should be directed to AFS-250 at (202) 267-8096.

5. LOCATION IN HANDBOOK. The material covered in this handbook bulletin will be incorporated by AFS-200 in volume 3, chapter 8, section 1 of FAA Order 8400.10, "Air Transportation Operations Inspector's Handbook." Until the handbook is updated, inspectors should make written reference to this bulletin in the margin of the indicated section.

/s/

David R. Harrington

ORDER:	8400.10
APPENDIX	3
BULLETIN TYPE:	Flight Standards Handbook Bulletin for Air Transportation (HBAT)
BULLETIN NUMBER:	HBAT 94-16A (Revised)
BULLETIN TITLE:	Training Records (Revised)
EFFECTIVE DATE:	01-22-95
TRACKING:	NTSB Recommendation A-94-24

1. PURPOSE. This bulletin contains information and guidance on pilot training record keeping systems under FAR Parts 121 and 135.

2. CANCELLATION. Handbook Bulletin HBAT 94-16, dated 12/29/94 is canceled.

3. BACKGROUND.

A. On April 14, 1993, a McDonnell Douglas DC-10-30 departed a runway following landing. Upon investigation of the accident, the National Transportation Safety Board (NTSB) recommended the Federal Aviation Administration (FAA) "review the pilot training record keeping systems of airlines operated under FAR Parts 121 and 135 to determine the quality of information contained therein, and require the airlines to maintain appropriate information on the quality of pilot performance in training and checking programs."

B. The NTSB determined that the probable cause of the accident was the captain's failure to use proper directional control techniques to maintain the airplane on the runway. The operator's record keeping system maintained training files of its flight crew in a composite format. Those records did not retain individual performance information. Other than the record of training taken and its satisfactory completion, no records of previous training performance for the accident flight crew were available. The records were not adequate to use for trend analysis or for evaluating an individual's performance during training.

4. DIRECTION. Consult with the operator and request that each annotate company training records when additional training during training and checking activities is required. This annotation may be documented in a de-identified manner by the operator, or data may be documented in a manner similar to that required under an Advanced Qualification Program (AQP). The documentation of the specific additional training may be used for trend analysis and evaluation purposes.

A. Order 8400.10 states, "When a check airman determines that an event is unsatisfactory, the check airman may conduct training and repeat the testing of that event." The failed events do not have to be entered in the crewmember's record, unless the event was failed after the completion of additional training. When, as a result of additional training, the check is subsequently completed within the original session, the overall grade for the check is recorded as satisfactory. De-identified documentation of additional training may be used by the operator in tracking and evaluating the overall effectiveness of training programs and procedures.

5. POLICY. Principal operations inspectors (POI's) should review their assigned operators' training record keeping procedures to determine that the company's quality control measures are adequate to maintain appropriate information on the quality of pilot performance in training and checking programs.

6. INQUIRIES. Any questions or clarification regarding this bulletin may be addressed to AFS-210 at (202) 267-3718.

7. LOCATION IN HANDBOOK. The material covered in this bulletin will be incorporated in volume 3, chapter 11, section 3 of Order 8400.10 handbook. Until incorporation, inspectors should make reference to this bulletin in the margin next to the indicated paragraphs.

/s/

David R. Harrington

ORDER:	8300.10, 8400.10, and 8700.1
APPENDIX:	3
BULLETIN TYPE:	Joint Flight Standards Handbook Bulletin for Airworthiness (HBAW), Air Transportation (HBAT) and General Aviation (HBGA)
BULLETIN NUMBER:	HBAW 95-02A, HBAT 95-01A, AND HBGA 95-01A —Amended—
BULLETIN TITLE:	Voluntary Self Disclosure
EFFECTIVE DATE:	02-24-95
TRACKING NUMBER:	N/A

1. SUBJECT. This handbook bulletin contains guidance and information on the recording of voluntary self disclosure information.

2. BACKGROUND. The preliminary analysis of the Voluntary Disclosure Program as instituted in 1990, indicates that some changes in how the information is entered into the enforcement information subsystem (EIS) needs to be clarified. Also, there is a new requirement for adding a FIX CODE for the comprehensive fixes that are incorporated. The information that follows is the requested way to enter information into EIS for Voluntary Disclosure cases:

A. Block 18 Regulations Believed Violated: If more than one regulation is cited, list them in order of importance. The primary FAR violated should be listed first.

B. Fix Codes: The new FIX CODES and their definitions are contained in attachment 1. These codes should be entered in the first line of the "corrective action plan" block of the Self Disclosure Enforcement Investigative Report (EIR) Attachment. Again, enter the fixes in order of importance with the primary fix being entered first.

C. Program Tracking and Reporting Subsystem (PTRS): The changes that were incorporated in EIS for Voluntary Disclosure have eliminated the need for ACIEP to be entered in the National Use block of PTRS.

3. MISCELLANEOUS INFORMATION.

A. Follow up letters need not be sent to AFS-500. These are for your records to show that follow up action was accomplished on the comprehensive fixes.

B. Remember, when entering information in the Enforcement Investigative Report Attachment that any reference to the certificate holder should be deleted. Included in this would be a program name that would be unique to the certificate holder or the name of an inspector assigned to the certificate holder.

4. ATTACHMENTS.

A. Attachment 1: Voluntary Disclosure Fix Codes.

B. Attachment 2: Self Disclosure Inspector/Clerical checklist. This is to provide assistance through the SD EIR process. This checklist may need to be modified to fit office procedures.

C. Attachment 3: Self Disclosure Worksheet. The information listed on this worksheet is the same that is needed for entry into EIS when processing a SD EIR.

D. Attachment 4: Sample letter of FAA Acknowledgment of receipt.

NOTE: Attachments 2, 3, and 4 are samples only. They are not required and can be changed to fit each office's needs.

5. ACTION. None.

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5. ACTION. None.

ATTACHMENT 1
Voluntary Disclosure Fix Codes

100--Program/Procedures

101--Technical: All technical programs/procedures that are either approved or accepted by the FAA.

102--Administrative: All company related manuals. (personnel policy, logistic support, ground fueling etc.)

103--Training: When a change to a required training program is made or a new training program is initiated.

104--Automation (software): When enhancements are made to existing computer programs or the addition of a computer program.

200--Equipment/Facilities

205--Automation (hardware): New computer system is added or existing equipment is repaired, or modified or the addition of more equipment to existing system. (Ground Based)

206--Test Equipment: Addition and or repair of NDI, Avionics, Aircraft system test box, etc.

207--Training: Adding simulators, training aids, audio visual equipment, etc. Modification of training facilities.

208--Aircraft: Used when the addition of A/C spare parts is the fix or fleet campaign, E.O.'s, E.A.'s, A/C modifications, etc., are used as part of a comprehensive fix.

209--Ground Equipment: Used for the addition or repair/modification of A/C stands, power units (electric, air, hydraulic) tools.

210--Housing: Used when there is a change to the facilities that flight and/or maintenance operations occupy or use.

300--Personnel

311--Organization: Used for changes and additions to staffing, structure, responsibilities, and authorization.

312--Action: Used for individual disciplinary action and transfers initiated by the company to correct the problem.

313--Training: Used when training is the fix such as remedial or additional training in a system or procedure is required.

1 OF 2

ATTACHMENT 2
SELF DISCLOSURE INSPECTOR/CLERICAL CHECKLIST

This checklist should remain with the Self Disclosure package until it is completed and should then be removed and discarded by the reporting inspector.

_____1. Upon verbal notification of self disclosure, complete the "FAA ACKNOWLEDGMENT OF RECEIPT OF CERTIFICATE HOLDERS INITIAL NOTIFICATION OF SELF DISCLOSURE" form. Send original to the certificate holder and keep one (1) copy for file.

NOTE: An extension to the 10 calendar day time limit referenced in item 1. above may be given if requested by the certificate holder. However, in accordance with advisory circular 120-56 or 145.xx, a detailed description of the comprehensive fix should be provided in writing to the principal inspector within 30 calendar days.

_____2. Determine, to the extent possible, that no FAA investigation is already underway.

_____3. Call AFS-540 for pseudo self disclosure (SD) number, phone 703-661-0333.

_____4. Log in Master SD log. For office (If kept).

_____5. Open appropriate administrative action PTRS entry in the computer.

_____6. If the proposed fix is acceptable, send a Letter of Correction to the certificate holder.

NOTE: Letter of Correction is to be signed by the principal inspector. In his absence, his designee will sign.

_____7. Complete 2150-5 in the computer and print out a copy for the file. The date of the Letter of Correction is the date of use for close out of the 2150-5.

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2 OF 2

_____8. Following issuance of the Letter of Correction, close the PTRS entry referenced in item 4. above. Closing date of the PTRS entry will be the date on the Letter of Correction.

_____9. Schedule the follow-up action required by guidance by opening a new PTRS record ID number with the appropriate call-up dates. This can be done by entering the appropriate PTRS activity number in the "Triggers" section of the PTRS entry referenced above. This will open a new record and tie both together in the software.

_____10. Make two copies of the SD package, two complete copies will be sent to the region who will forward the one package to AFS-540. The original will be marked "CONFIDENTIAL NOT DISCLOSABLE" and will become the Office Copy.

Each copy shall include:

-- FAA form 2150-5

-- Inspectors Summary of Facts (Section B)

-- The "FAA Acknowledgment of Receipt of Certificate Holder's Initial Notification of Self Disclosure" form

-- Certificate holder's written report

-- Copy of Letter of Correction

ATTACHMENT 3
2150 SELF DISCLOSURE WORKSHEET

REPORT NUMBER _____ RELATED NUMBER _____

SELF DISCLOSURE Y SD IDENTITY CODE > _____

6. CERTIFICATE TYPE > _____

EQUIPMENT TYPE > _____ 9. MODEL AIRCRAFT _____

13. DATE OCCURRED / / 14. TIME _____

15. DATE KNOWN TO FAA / /

18. REGULATIONS VIOLATED (primary first)

1. _____, 2. _____, 3. _____, 4. _____

19. TYPE_____ 20. SUB-TYPE_____

21. CATEGORY_____ 23. ACCIDENT ASSOCIATED_____

DATE FAA ACCEPTED PLAN / / (DATE OF LETTER OF CORRECTION)

PROBLEM CODE_____

FIX CODE 1. _____, 2. _____, 3. _____, 4. _____ (List primary first)

CORRECTIVE ACTION PLAN (1200 Characters maximum)

_____

_____

_____

_____

_____

_____

_____

_____

_____

25. TYPE ACTION >_____ 26. SANCTION > _____

27. DATE > / / (Date 2150 is printed)

1 OF 2

ATTACHMENT 4
FAA ACKNOWLEDGMENT OF RECEIPT OF CERTIFICATE HOLDER'S INITIAL NOTIFICATION OF SELF DISCLOSURE

I, _____ of the Kansas City Flight Standards District Office hereby acknowledge receipt of the verbal report stating that a violation of Federal Aviation Regulations may have occurred on aircraft N_____ (involving) _____

The referenced finding was immediately disclosed to me on (Date) _____ at (Time local) _____ by the Following Company official:

NAME: _____

POSITION: _____

PHONE: _____

AT THAT TIME, THE ABOVE NAMED COMPANY OFFICIAL ADVISED ME OF THE IMMEDIATE STEPS TAKEN TO CEASE THE CONDUCT THAT RESULTED IN THE APPARENT VIOLATION AND STATED THAT AN INVESTIGATION IS UNDERWAY TO DETERMINE WHAT REMEDIAL ACTIONS MAY BE NECESSARY TO PREVENT A RECURRENCE OF THE FINDING.

In accordance with Advisory Circular 120-56/145-XX, this acknowledgment will serve in lieu of a letter of investigation. However, should we discover prior to receipt of your written report, that the apparent violation was already under investigation by the FAA, we will notify you and proceed with that investigation and this self disclosure will be denied. We expect your complete written report of this incident including a detailed description of the proposed comprehensive fix outlining the planned corrective steps within 10 calendar days of this Initial Notification.

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2 OF 2

I have assigned the following inspector to assist in verifying the facts associated with the finding and in preparing the appropriate investigative package:

NAME: _____

FAA OFFICE: _____

PHONE: _____

PRINCIPAL INSPECTOR: _____

FAA OFFICE: _____

DATE: _____

SIGNATURE: _____