CHANGE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

8400.10 CHG 9

11/02/94

SUBJ: AIR TRANSPORTATION OPERATIONS INSPECTOR'S HANDBOOK

1. PURPOSE. This change transmits new and revised sections of the handbook.

2. EXPLANATION OF CHANGES. This is the second change to the 8400.10 handbook to use the Government Printing Office typesetting program. Implementation of the typesetting program will eventually include the entire handbook. During the transition to a complete revision of the handbook, changes to the handbook will include some formatting differences. For example, the paragraph number that was listed on the inside bottom of each page prior to Change 8 is not included in Change 9. The volume number is now indicated on the inside bottom of the page. Change 9 uses change bars to designate new or revised material. Significant areas of new direction, guidance, and policy included in this change are as follows:

a. A new job aid for cabin safety was added to volume 2, chapter 2, section 1.

b. New operations specifications figures were added to volume 2, chapter 3, section 2. A bulletin on check airmen was incorporated into this section.

c. Volume 3, chapter 1, section 5, now includes a paragraph on noise abatement departure profiles.

d. Paragraph 339 of volume 3, chapter 2, section 2, was revised.

e. The passenger capacity chart in volume 3, chapter 10, section 7, was revised and updated.

f. Volume 3, chapter 12, section 3, was modified slightly; the words passenger and passenger carrying were deleted.

g. Volume 3, chapter 14, section 2, now contains a brief section and a new job aid for Federal Aviation Regulations (FAR) Part 121 flight attendant (F/A) training.

h. Volume 3, chapter 14, section 5, is new material on F/A ground training.

i. A job aid on the exit seating program was added to volume 3, chapter 15, section 3.

j. A brief section and new job aid on the preparation of an F/A manual was added in volume 3, chapter 6, section 15.

k. Volume 4, chapter 4, sections 1 through 6, contain new material on master minimum equipment lists, minimum equipment lists, and configuration deviation lists.

l. Volume 4, chapter 8, sections 1 and 2, contain new material on ground deicing/anti-icing programs.

m. The type rating charts in volume 5, chapter 1, section 2, were updated.

n. New material on cabin en route inspections is included in volume 6, chapter 2, section 3.

o. Volume 6, chapter 2, section 10, contains new material on ground deicing/anti-icing inspections.

p. Volume 8, chapter 3, sections 3 through 5, contain new material on Flight Operations Evaluation Boards, Flight Standardization Boards, and Maintenance Review Boards.

3. 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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Thomas C. Accardi
Director, Flight Standards Service

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CHAPTER 2. THE CERTIFICATION PROCESS—PART 121 AND PART 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 of 1958) and the FAR. Under no circumstances will an applicant be certificated until district and regional 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 is an interactive process, and the direction and guidance provided in some cases may not be all-inclusive. Regional and district offices are expected to act in a manner that considers existing conditions and circumstances.

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 making any attempt to use the selected practices which 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 Flight Standards District Office (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 district office 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, the applicant should be advised that a certification orientation video tape and AC 120-49 are available for review in the district office. The FAA shall advise the applicant that if he or she has not previously done so, it will be necessary to review the orientation video tape and the AC before further action can be taken on requests or inquiries. Lengthy or detailed discussions of the certification process should be avoided until the applicant has viewed the video tape and read the AC. The FAA should instruct the applicant how to obtain AC 120-49 and the 8400.10 handbook. These documents will assist the applicant in the certification process.

C. Preliminary Discussion. After the applicant has reviewed the orientation video tape and AC 120-49, the inspector should have a preliminary discussion with the applicant to determine if the applicant is qualified to apply for certification. For example, Title 49, U.S.C. requires that the applicant be a U.S. citizen as defined under Title 49. From these discussions the inspector should make a preliminary determination as to whether the applicant is qualified and intends to pursue certification. If the applicant proposes to locate the principal base of operations in another district office's geographic area, the applicant should be referred to the other district office for any further cer-

tification efforts. If the applicant does not qualify or has not seriously decided whether to proceed with the certification process (and has not asked for FAA Form 8400-6, "Preapplication Statement of Intent" (PASI)), further discussion and actions should be deferred until the applicant expresses a firmer intent.

D. PASI Instructions. If, in the judgment of the inspector, the applicant intends to proceed with the certification process, the inspector should give the applicant a blank copy of the PASI, FAA Form 8400-6 (see figure 2.2.1.1.). The prospective applicant shall be instructed to complete the PASI following the instructions in appendix 1 of the AC and submit the completed PASI to the district office. The applicant should also be advised that upon receipt of the PASI and its subsequent processing, FAA personnel will contact the applicant to arrange for a preapplication meeting when the certification process will be discussed in greater detail.

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 PASI denotes an intent by the applicant to continue the certification process. It also allows the FAA to plan activities and commit resources. Therefore, an inspector should not provide a copy of the PASI to a potential applicant until after that applicant has reviewed the appropriate regulations and advisory material and considered the personnel, facility, equipment, aircraft, and paperwork requirements for certification and operation.

B. Use of a PASI by the District Office. The district office manager uses the PASI to evaluate the complexity of the proposed operation and to ensure that trained and experienced inspectors are available to certificate the applicant. The PASI is used to initiate the district office files such as the Program Tracking and Reporting Subsystem (PTRS) and the Air Operator Vital Information File on the potential applicant. It is also used by the district office to obtain and record the precertification number received from AFS-620.

C. Use of a PASI by the Regional Office. The regional office must ensure that district office staffing is consistent with the aviation environment. The PASI can be used by the regional office to assess district office workload and forecast staffing and training needs.

D. Assignment of Precertification and Certification Numbers. The Regulatory Support Division, Operational Systems Branch, AFS-620, maintains and assigns certificate and precertification numbers. Precertification numbers are based on the type of proposed operation as shown on the PASI. The numbering system is fully automated, providing a data base of operators, air agencies, and the status of each certificate (active, canceled, precertification).

61. DISTRICT OFFICE REVIEW OF PASI.

A. Review of a PASI. Upon receipt of a signed PASI, the district office will review the form to ensure that there is sufficient information to further process the preapplication. The district office will ascertain that the proposed operation is consistent with the FAR Part under which the applicant will be required to operate. 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 district office 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 district office files.

B. Acceptance of a PASI. When the PASI is acceptable, the district office shall complete section 2 of the form. Within 5 working days, the "Action" box of section 2 shall be checked and the PASI forwarded to the Regional Flight Standards Division (RFSD). The regional office shall process the PASI within 5 working days of receipt. The district office may use the PASI template on FAA.MAIL to transmit PASI information to the regional office. To use the PASI template while in FAA.MAIL, the inspector may type "Compose PASI" and the "Command" prompt. The inspector should answer all questions according to the written PASI received from the applicant.

63. REGIONAL OFFICE ACTIONS WITH THE PASI. Within 5 working days of receiving a PASI marked "Action" or an FAA.MAIL template message of a PASI, the Flight Standards division shall process it as follows:

A. Designation of a Certificate-Holding District Office (CHDO). Based on the information in the PASI, the regional office must determine which district office should be assigned the certification project and CHDO responsibilities. In certain cases this determination may require inter-regional coordination and agreement. Additional guidance concerning the assignment of CHDO responsibilities is provided in chapter 1, section 3.

B. Transmittal of Information to AFS-620. The regional office 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 the regional office with a precertification number and

will create a precertification shell record in the CHDO Vital Information System and the National Vital Information System (VIS).

C. Notification of CHDO and the Applicant. When the district office assignment has been determined, and the precertification number obtained, the RFSD will complete section 3 of the PASI and return or forward it to the district office assigned certification responsibilities for the prospective applicant. If the CHDO assigned certification responsibilities is not the office which originally processed the PASI, the regional office shall notify both district offices of the disposition of the PASI. In addition, the regional office shall notify the prospective applicant and provide the following information:

- Name, address, and telephone number of the assigned district office
- Name of the district office manager or the name of a prearranged contact within the assigned district office
- An explanation why the applicant has been assigned to a district office 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 district office

65. ASSIGNMENT OF CERTIFICATION TEAM.

A. Selection of Team Members. When the district office receives a PASI with a precertification number, 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. Generally these inspectors will be the principal inspectors assigned to the applicant once the applicant is certificated. An operations aviation safety 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 district office assigned responsibility for the certification project 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 FAR Part 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 district office 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 district office manager are kept fully informed of the current status of the certification. The Schedule of Events and Certification Job Aids 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 to the attention of the CPM.

C. Responsibilities of the District Office Manager. The district office 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 district office manager shall coordinate with the RFSD when intra/inter-regional coordination is required. However, routine certification job function coordination between district offices is appropriate and encouraged.

69. PREAPPLICATION MEETING.

A. Arrangements for the Preapplication Meeting. After being assigned, the CPM shall contact the applicant to arrange a preapplication meeting. The applicant should be advised that the key management personnel listed on the PASI should attend the preapplication meeting, and should be prepared to discuss specific aspects of the applicant's proposed operation in general terms.

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:

- If not previously provided, AC 120-49
- Applicable Certification Job Aid
- Sample Schedule of Events format
- Applicable sample of operations specifications (OpSpecs)
- Other publications or documents that the CPM considers appropriate (See figure 2.2.1.2. 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. The CPM should use 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 the Information on 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 have occurred, 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 district office, the regional office shall be notified without delay so that the certification project can be reassigned. In this situation, it will probably be appropriate to terminate the preapplication meeting.

E. Informing the Applicant of Pertinent Regulations. It is essential that the applicant understands which regulations are applicable to the proposed operation. A list of regulations appropriate to various types of operations is in the AC. 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 appendices 2 and 3 of the certification AC. 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 and to notify the CPM 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 CPM should further advise the applicant that the FAA will proceed with the certification process but will not issue the FAA air carrier certificate until the applicant provides proof that appropriate DOT economic authority has been obtained.

71. INSTRUCTIONS TO THE APPLICANT ON THE FORMAL APPLICATION.

A. Requirements of Formal Application. It is essential during the preapplication meeting for the applicant to have 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 district office and, after initial review, notification of its acceptance or rejection will be provided by letter. The applicant should be encouraged to submit the formal application as far in advance as possible of the intended starting date.

NOTE: The CPM 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 CPM 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 2.2.1.3. 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. Formal or Accepted Schedule of Events. The applicant needs to understand that the Formal or Accepted Schedule of Events is a key document to be presented with the formal application. The Formal or Accepted Schedule of Events is a list of items, activities, programs, aircraft and/or facility acquisitions which the applicant must accomplish or make ready for FAA inspection before certification. The Formal or Accepted 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 Formal or Accepted Schedule of Events must be constructed in a logical and sequential manner. The Formal or Accepted 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 Formal or Accepted 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 2.1.1.4. in chapter 1 provides a sample format for a Formal or Accepted Schedule of Events. It is available on the Job Aid Disk. 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 sections of manuals. These manuals or sections of 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 may submit equivalent manuals or sections of manuals being developed that provide the same type of information. Except for the manual material listed in the following subparagraphs and portions of the training manual required by subparagraph C, the applicant's entire manual, as required by FAR § 121.133 or § 135.21, does not need to be completely developed at the time of formal application. However, the applicant should be encouraged to provide a draft outline of the major parts of the entire proposed manual or separate parts of it. This early draft outline, similar to a table of contents, helps to ensure that all required material is accounted for and that the major parts of the yet uncompleted manual material have been listed on the Schedule of Events with proposed submission dates. The applicant will be required to eventually submit, in accordance with the Schedule of Events, all completed portions of the manual required by the appropriate regulation. If the applicant has any additional portions of the proposed manual ready for review at the time of formal application, the CPM should encourage the submittal of those portions with the application. The company general manuals attachment to the formal application must indicate that the applicant has developed these manuals sufficiently to show compliance with at least the following FAR sections, if they are applicable to the particular operation:

(1) FAR Part 121

- 121.135(a)(2)—Easy to revise
- 121.135(a)(3)—Revision control, each page dated
- 121.135(b)(1)—Company general policies
- 121.135(b)(2)—Duties and responsibilities of employees
- 121.135(b)(3)—References to appropriate regulations
- 121.135(b)(4)—Flight dispatching and operational control
- 121.135(b)(12)—Flightcrew succession of command
- 121.135(b)(14)—Procedures for operating in adverse weather
- 121.135(b)(15)—Airman training

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

(2) FAR Part 135

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

C. Initial Company Training Curriculums. It should be recognized that aircraft, facility arrangements, and some training program elements may not be fully developed at the time of formal application. The date when all required training course curriculums will be submitted must be annotated in the Schedule of Events. However, a draft of the initial company training curriculum, completed as nearly as possible in its final form, must be attached to the formal application. The initial 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 his or her 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 he or she 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 district office 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 OpSpecs.

(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/or Letters of Intent. This attachment should provide evidence that the applicant has, or is in the process of procuring, aircraft, facilities, and services to conduct the type of operation proposed. This evidence may be in the form of proof of formal purchases, lease, or contractual arrangements. If formal arrangements have not been completed, letters or other documents showing preliminary agreements or intent will suffice until formal contracts or agreements are available. If the applicant intends to make outright purchases, or develop his or her own services, but does not plan to do so until after submitting the formal application, a simple statement of intent will suffice. These documents and/or letters 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 letters 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. Initial Compliance Statement.

(1) Preparation of the initial compliance statement and ultimately the final compliance statement benefit the applicant by systematically ensuring that all applicable regulatory aspects are appropriately addressed during the certification process. The initial compliance statement shall be in the form of a complete listing of all FAR Part 121 or 135 regulatory sections pertinent to the operation that the applicant is proposing. This list should reference applicable subparts and each relevant section of the subparts. Next to each section, the applicant must provide a brief narrative description or preferably a specific reference to a manual, or other documents, which describe how each regulation will be complied with, if known, at the time the formal application is submitted.

(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. If the method of compliance has not been fully developed, the applicant should indicate that the compliance information will be provided in the final compliance statement.

(3) The list of the specific regulations and subparts can be arranged so that when the method of compliance is formalized, the description or reference can be added to the list in preparation for the final compliance statement. The applicant shall be advised that the final compliance statement must be submitted, reviewed, and accepted before initiating proving tests. The following illustrations are examples of how relevant sections of the regulations should be presented in an initial compliance statement and/or a final compliance statement, as appropriate.

Example 1. Initial compliance statement—method of compliance not developed at time of formal application.

121.97 Airports: Required data. To be supplied

Example 2. Initial or final compliance statement—method of compliance fully developed—preferred presentation

121.563 Reporting mechanical irregularities. GOM p. 129, para. 243; GMM p. 45, para. 12.5.

Example 3. Initial or final compliance statement—method of compliance fully developed—acceptable presentation

121.563 Reporting mechanical irregularities. The GOM 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 instructs maintenance personnel on the requirements to record discrepancies discovered during preflight checks and other types of checks.

75. CONCLUSION OF PREAPPLICATION MEETING. The CPM 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 CPM 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 CPM should encourage the applicant to informally coordinate drafts of required documents, as they are developed, with the CPM and 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 CPM should advise the applicant of the reasons for concern. When it is apparent the applicant will not be able to prepare an adequate formal application, the CPM should advise the applicant to request another preapplication meeting after more complete preparation on the applicant's part. It is appropriate for the CPM 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 district office determines that the applicant will not proceed with the certification process, the PASI will be returned to the applicant. The CPM 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 RFSD will notify AFS-620 and the precertification number will be returned to the centralized certificate number data file. Should the applicant again request to apply, the procedures described in paragraphs 59, 61, and 63 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"

INSTRUCTIONS FOR COMPLETING FAA FORM 8400-6

SECTION 1A. This section must be completed by all applicants.

1. Enter the company's official name and mailing address.
2. This address must be the physical location where primary operating activities are based. It is where the offices of management personnel required by regulation are located. If the address is the same as item 1, enter "same."
3. Enter the estimated date when operations or services will begin.
4. This information will be used to assign a company identification number. You may indicate up to three, three-letter identifiers, such as ABC, or XYZ. If all choices have been assigned to other operators or agencies, a randomly selected number will be assigned.
5. Enter the names, titles, and telephone numbers of required management personnel. Include the general manager, directors of operations and maintenance, chief pilot, chief inspector, et cetera, as applicable.

SECTION 1B. This section must be completed by all air operator applicants applying under SFAR 38-2.

6. The proposed type of operation must be indicated. Check as many boxes as apply.

SECTION 1C. This section must be completed by all air agency applicants applying under Part 145, Part 147, or Part 149.

7. The proposed type of agency must be indicated. Check as many boxes as apply.

SECTION 1D. This section must be completed by all air operator applicants applying under SFAR 38-2.

8. Indicate the proposed number and types of aircraft to be operated, as well as the number of passenger seats or, for all-cargo aircraft, payload capacity.
9. Enter the states or geographic areas in which operations are to be conducted. For example, if operations are to be conducted in one or two states, list those states. For overseas or international operations, enter each area, country, or geographical area, such as Alaska and Canada.

SECTION 1E. This section must be completed by all applicants.

10. Show any information that would assist FAA personnel in understanding the type and scope of operation or services to be performed by the applicant.
11. The "Preapplication Statement of Intent" (PASI) denotes an intent to seek FAA certification as an air operator or air agency. It must be signed as follows:

    Type of Organization

    Individual

    Partnership

    Company, corporation, association, et cetera.

    Authorized Signature

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 II 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 Flight Standards District Office (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 regional office action is required or if the PASI is forwarded for information only.
3. Enter any pertinent comments. If certification is proceeding, show the precertification (or certificate number, if applicable) and indicate certification is proceeding. Request any regional support, such as a specific subject matter expert (for example, B-707-rated pilot; qualified parachute rigger).

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

1. Enter the date the PASI is received by the regional office and the name of the regional specialist processing it.
2. Show the precertification number assigned by AFS-620 and the date.
3. Enter the name of the district office 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 district office assigned certification responsibility is not the one where initial inquiry was made, enter a remark and the date that each district office and the applicant were notified.

FIGURE 2.2.1.2.
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. AC Checklist, currently AC 00-2.7, number changes annually	
b. Guide to Federal Aviation Administration Publications	
c. AC 121-29, Carry-On Baggage Program	
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-510 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 record keeping documentation	
d. Carry-On Baggage Program (Part 121 operators)	
— FAA AC 121-29	
e. Exit Seat Program	
— FAA Exit Seat Program Job Aid	

FIGURE 2.2.1.2.—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. Initial/Final 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 2.2.1.3
SAMPLE FORMAL APPLICATION LETTER

Dear Sir:

This letter serves as formal application for an air carrier certificate. We intend to operate a scheduled passenger operation, based in Little Rock, Arkansas. Our company, to be known as Mid South Airlines, Inc., will have its operations and maintenance facilities located at Hangar 12 at the Little Rock International Airport. Our mailing address is 601 West Circle Drive, Little Rock, Arkansas 72202.

Key management personnel are identified as follows:

General Manager - Lester J. Smith
Director of Operations - Lewis Manson
Director of Maintenance - Carl Everett
Chief Pilot - (Vacant)
Chief Inspector - Walter Pepper

We intend to operate two F-28's on a scheduled basis between Little Rock; Tulsa, OK; Wichita, KA; and Springfield, MO. Our relatively small size will allow combining the duties of director of operations and chief pilot; therefore, a request for deviation will follow this letter within the next week.

We have enlisted the services of Smith and Jones Law Offices located at 508 East Main Street, Little Rock, Arkansas, as our agent for service.

We look forward to working with you in our future endeavors.

Sincerely,

Lester J. Smith
President

Enclosures (6)

[PAGES 2-68 THROUGH 2-72 RESERVED]

CHAPTER 3. SELECTED PRACTICES

SECTION 2. SINGLE PILOT, SINGLE PILOT-IN-COMMAND (PIC), AND BASIC FAR PART 135 OPERATORS

165. GENERAL. This section provides direction and guidance to inspectors for the certification of Federal Aviation Regulations (FAR) Part 135 operators of limited size and scope who are not required to comply with all regulatory requirements for manuals, training programs, and management positions. These operators normally need less extensive manuals or training programs and will have fewer management positions than more complex FAR Part 135 operators. However, these operations will not be permitted a reduction in safety standards due to their limited size and scope. Three types of FAR Part 135 operators whose operations are limited in size and scope are defined in paragraph 167.

167. DEFINITIONS.

A. Single Pilot Operator. A single pilot operator is a certificate holder using only one pilot for FAR Part 135 operations. The pilot shall be identified by name on the certificate holder's operations specifications (OpSpecs). Using "freelance" pilots or temporary pilot employees in place of the pilot named on the OpSpecs is not authorized. FAR Part 135 does not require single pilot operators to maintain manuals, training programs, or management positions (no deviation required). Selected practices for certification of single pilot operators are in this section.

B. Single PIC Operator. A single PIC operator is a certificate holder using only one PIC for FAR Part 135 operations. The PIC shall be identified by name on the certificate holder's OpSpecs. Using "freelance" pilots or temporary pilot employees in place of the PIC named on the OpSpecs is not authorized. The certificate holder may be authorized to use no more than three individuals as second-in-command (SIC) pilots. These individuals will be identified by name on the certificate holder's OpSpecs and shall meet all requirements of FAR Part 135 to serve as SIC's. Single PIC operators are not authorized to operate aircraft type certificated for more than nine passenger seats, conduct Category II (CAT II) or Category III (CAT III) operations or conduct operations outside the United States (U.S.), Canada, Mexico, or the Caribbean. Certificate-holding district offices (CHDO) are authorized to grant single PIC operators complete deviations from FAR §§ 135.21(a), 135.37(a), and 135.341(a). In some situations a complete deviation may not be justified, and the CHDO may determine that partial deviations are more appropriate.

C. Basic FAR Part 135 Operator. A basic FAR Part 135 operator is a certificate holder using more than one PIC and authorized (because of the operation's limited size and scope), certain deviations from the manual content, management personnel, and training program curriculum requirements of FAR Part 135. This section establishes the extent of deviation authorized, the maximum size and scope of operation, and selected practices applicable to the certification of a basic FAR Part 135 operator.

169. CERTIFICATION PROCESS. Processing applications for certificates to conduct single pilot, single PIC, and basic FAR Part 135 operations will generally follow the same certification procedures as other applicants. Certification of these applicants may take less time since fewer documents, facilities, and other items require Federal Aviation Administration (FAA) evaluation. Applicable differences in the certification process for single pilot, single PIC, and basic FAR Part 135 operators are discussed in this chapter.

171. SPECIAL AIRWORTHINESS CONSIDERATIONS. Any single pilot, single PIC, or basic FAR Part 135 certificate holder may elect to maintain aircraft under FAR § 135.411(a)(2). Maintenance programs under FAR § 135.411(a)(2) require more extensive written procedures than those usually required for small operators by FAR § 135.23. Compliance with FAR § 135.411(a)(2) requires a more complex maintenance program and may require small operators to employ additional qualified management personnel. Therefore, regardless of the minimum standards for personnel and manuals established elsewhere in this section, Part D of the operations specifications authorizing aircraft maintenance under FAR § 135.411(a)(2) shall not be issued to these types of operators unless the CHDO determines that the operator has appropriate personnel and manu-

als to provide adequate means of compliance with FAR § 135.411(a)(2).

173. CERTIFICATION PROCESS DIFFERENCES FOR SINGLE PILOT AND SINGLE PIC OPERATORS. This paragraph describes deletions, modifications, and additions to the certification process for single pilot and single PIC applicants.

A. Differences in the preapplication phase are as follows:

(1) In the "Preapplication Statement of Intent" (PASI) the applicant must state that the proposed operation will employ either one pilot or only one PIC. This statement should be entered in item 10 of the PASI. A single PIC applicant must attach to the PASI a brief statement identifying regulations from which deviations will be requested. This statement will include the number of SIC's the applicant proposes to use.

(2) During the preapplication meeting, the content and scope of the initial compliance statement shall be established by the certification project manager (CPM). The CPM must ensure that an applicant clearly understands the level of detail expected in the initial and final compliance statements. The initial compliance statement may be abbreviated where appropriate. However, an initial compliance statement that does not clearly document an applicant's knowledge of regulatory requirements is unacceptable. The initial compliance statement (and later, the final compliance statement) provides the only written evidence of a single pilot or single PIC operator's understanding of FAR requirements.

NOTE: Simple, conventional requirements for a single pilot operator using a four seat, single-engine airplane in day, visual flight rules (VFR)-only operations within the U.S. differ considerably from the requirements for a single pilot operation using a Cessna 441 turboprop airplane in day and night, all-weather, international operations. Neither operator in this example is required by FAR Part 135 to have manuals, training programs, or a full complement of management personnel. An examination of regulatory requirements that may apply to each operator's specific situation may reveal differences in the proposed types of operation, which would cause significant differences in the content and scope of the initial and final compliance statements.

(3) Preapplication meetings should be attended by the applicant's primary operations official and the single pilot or single PIC (if different from the primary operations official). A person who is competent to discuss aircraft maintenance requirements for the applicant should also attend the meetings. An example of this attendance would be the Akers Realty Corporation which owns a Bell Jet Ranger helicopter and applies for a FAR Part 135 certificate. The individual with the authority to allow use of the helicopter is Mr. Bill Akers, vice president of sales. Mr. Terry Larson is the only pilot and is also sales manager for Akers. Maintenance is done by City-Copters Inc., a fixed base operator. In this situation it would be appropriate for Mr. Akers, Mr. Larson, and a representative from City Copters maintenance department to attend preapplication meetings.

B. Differences in the formal application phase are as follows:

(1) Formal application attachments for company general manuals and company training curriculums are not required to be submitted with the formal application.

(2) For single pilot and single PIC operators, attachments required to be submitted with the formal application are as follows:

- Schedule of Events
- Documents of purchase, contracts, leases and/or letter of intent
- Initial compliance statement
- Management qualification resumes

(3) The management qualification resumes are only required for the principal owner and company officers who are primarily responsible for operational control of the FAR Part 135 activities within the organization. This will provide assistance when determining compliance with FAR § 135.13(b)(2). Examples of management qualification resumes to be submitted for these applicants are described as follows: A plastic products manufacturer based in Wilmington, Delaware, owns a King Air and applies for a certificate to operate under FAR Part 135. The company employs 1,400 people and has only one pilot. The company president has an office in New York City, and the plane is kept in Wilmington, Delaware. The only person who can authorize use of the aircraft is the Wilmington plant manager. In this case, the president and the Wilmington plant manager are the persons for whom resumes are required. Another example is the pilot/owner applicant when the pilot/owner will be the single pilot or single PIC. In this situation, only the resume of the pilot/owner is required.

C. Differences in the document compliance phase are as follows:

(1) The following items are not required and will not be evaluated unless the applicant chooses to develop and submit these items to the FAA:

- General operations manuals (GOM)
- General maintenance manuals (GMM), if appropriate
- Pilot training program curriculums

NOTE: Any material submitted by an applicant must be evaluated for acceptance or approval regardless of whether it is considered required material. If, as an example, a single PIC operator chooses to submit a complete GOM, that manual must be evaluated and must meet the same criteria for acceptance as a required manual. Unacceptable submissions that are not corrected require denial of the application. It is irrelevant whether the submitted material is specifically required by an FAR.

(2) Other documents and items required to be submitted during the document compliance phase will be evaluated, including the following:

- Resumes for the individual or individuals who have operational control
- The operator's flight-locating procedures (required by FAR § 135.79)
- Procedures to provide hazardous material training required by FAR § 135.333

D. Differences in the demonstration and inspection phase are as follows:

(1) For single PIC operators, each SIC identified on the proposed certificate holder's OpSpecs must pass the entire check required by FAR § 135.293 while occupying the normal SIC duty station (usually the right pilot seat in airplanes).

(2) There are no differences in the demonstration phase for single pilot operators.

NOTE: A proposed operation may have only one person (this person may be the owner, pilot, and mechanic) who uses a single-engine airplane in day VFR operations. The aircraft, facilities, equipment, records, and pilot/owner competency must be evaluated by the same careful process used for a larger, more complex operator. Although the scope of the operation may require fewer demonstrations or inspections, every operator must meet the safety standards required by the FAR. Proving tests may not be required by volume 3, chapter 9.

E. Differences in the certification phase are as follows:

(1) Single pilot or single PIC operators will be issued the appropriate standard OpSpecs paragraph which identifies by name one individual authorized as the pilot or PIC (figures 2.3.2.1. and 2.3.2.2.). For single PIC operators, no more than three individuals shall be authorized as SIC's (figure 2.3.2.2.).

(2) Normally a single PIC operator will be issued an OpSpecs paragraph authorizing complete deviations from FAR §§ 135.21(a), 135.37(a), and 135.341(a). (See figure 2.3.2.2.)

175. CONCEPT OF A BASIC FAR PART 135 OPERATOR.

A. Basic FAR Part 135 Operators. Basic FAR Part 135 operators are limited in size and scope. This paragraph establishes conditions that an operator must meet to qualify as a basic FAR Part 135 operator and specifies the extent of authorized deviations from the manual, management personnel, and training program requirements of FAR Part 135. Basic FAR Part 135 operators are required to have manuals, management personnel, and training curriculums adapted to their smaller, less complex operations. These requirements are discussed in detail in paragraphs 183C, D, and E. To be classified as a basic FAR Part 135 operator each of the following conditions and limitations must be met:

(1) No more than five pilots, including SIC's, are used in the operation.

(2) No more than five aircraft are used in the operation.

(3) No more than three different types of aircraft are used in the operation.

(4) No aircraft type certificated for more than nine passenger seats is used in the operation.

(5) No CAT II or CAT III operations are conducted.

(6) No operations are conducted outside the U.S., Canada, Mexico, and the Caribbean.

B. Check Airmen Approval for Single Pilot, Single PIC and Basic 135 Operators. Recent experience has indicated that many single pilot, single PIC, and basic FAR Part 135 operators who hold deviations granted by OpSpecs paragraph A16, have demonstrated the management skills, organizational abilities, and good regulatory compliance record to warrant the appointment of check airmen. Check airmen appointments should be limited to only those operators who have demonstrated to the satisfaction of the

assigned POI all of the above important characteristics.

(1) "Single pilot" operators may be granted approval to use a check airman who meets all the requirements of FAR Part 135 to serve as a check airman and is presently employed by another air carrier who is using the same type of aircraft. These operators shall be limited to one check airman approval at any one time.

(2) "Single PIC" operators may be granted approval to use a check airmen presently employed by another air carrier using the same type of aircraft and having an individual appointed as a current check airman in that type aircraft who meets all the requirements of FAR Part 135 to serve as a check airman. At the discretion of the POI, these check airmen may be authorized to give to both the single PIC and/or any of the SIC's listed in paragraph A16 of the OpSpecs the proficiency or competency checks required by FAR Part 135. These operators shall be limited to one check airman authorization at a time.

(3) "Basic Part 135 On-Demand Only" and "Basic Part 135 On-Demand and Commuter" air carriers may be granted approval to use check airmen after receiving approval for a check airmen curriculum segment in their approved training programs.

NOTE: When check airmen are being approved for multiple operators under this paragraph, inspectors should refer to volume 3, chapter 3, section 2, paragraph 699 of this handbook for additional guidance.

(4) No change to the OpSpecs is necessary for a single pilot and single PIC operator. For a basic FAR Part 135 operator issued OpSpecs paragraph A16, "Basic Part 135 Operator—Commuter and On-Demand" or "Basic Part 135 Operator—On-Demand Only" the following revisions are required:

- Delete paragraph (b)(4) in its entirety.
- Amend the existing paragraph (a)(2)(a) to read as follows: "An approved basic indoctrination ground training curriculum segment that complies with FAR § 135.329(a)(1) and an approved check airmen training curriculum segment that complies with FAR § 135.339."

NOTE: Figures 2.3.2.5. and 2.3.2.6. show sample OpSpecs for approval of check airmen in paragraph A16.

177. PROCEDURE FOR APPROVING DEVIATION FROM MANAGEMENT EXPERIENCE.

A. Initial Actions. When an operator requests approval for a deviation from the management experience requirements of FAR § 135.39, the operator must specify the deviations requested and the justifications for them. The POI will review the certificate holder's request and justification as expeditiously as possible and then forward it with recommendations through appropriate CHDO channels to the manager of their Regional Flight Standards Division (RFSD).

B. Cover Letter Contents. The district office cover letter to the manager of the Flight Standards division should include at least the following information:

- That the information in the operator's request and the candidate's resume has been reviewed and verified by the POI
- The size and the scope of the intended operation (number and type of aircraft and crewmembers, areas of operations authorized, and types of operations authorized)
- Any significant justification or personal knowledge of the applicant
- A clear district office position
- The reasons for the finding if the applicant is deemed unsatisfactory

NOTE: If the POI finds that the candidate for a required management position is ineligible due to involvement in revocation proceedings as described in FAR § 135.13(b)(2), he or she should consult with the RFSD and regional counsel. If regional counsel determines that the management candidate is ineligible, the POI should return the application cover to the operator with an explanation of the reasons for denial.

C. Acceptable Experience. The POI should carefully evaluate deviation requests in regard to director of operations and chief pilot positions, considering the size, scope and future expansion plans of the operator. In reviewing deviation requests, the POI and the RFSD should determine if the proposed management candidate possesses the equivalent level of aeronautical management experience as a person who would meet the requirements of FAR § 135.39. For example, experience as a corporate chief pilot, a manager of a corporate flight department, or an active duty military transport command pilot position may be satisfactory for this purpose; however, this experience should not be the only justification for the deviation request.

D. Unacceptable Experience. Flight instruction and other flight experience, such as crop dusting or external-load helicopter operations, should **not** be

considered as meeting any equivalent level of management experience required by FAR § 135.39.

E. Requests from Commuter Operators. Management qualification requirements are intended for all certificate holders other than those covered by FAR § 135.37(a) and are specifically intended for commuter air carriers. The validity of any deviation request from commuter operators should be carefully considered since the purpose of the rule is to raise the level of safety through qualified, experienced management personnel. See paragraph 183C for further clarification.

F. Required Knowledge. The RFSD manager grants deviations for both operations and maintenance positions by determining if the applicant possesses the equivalent level of aeronautical experience as required by FAR § 135.39. The person under consideration must be knowledgeable of the regulations, manuals, OpSpecs, and other pertinent requirements.

G. Subsequent Action. When a decision concerning the request is reached, the RFSD manager issues an approval or denial of the request to the certificate holder and forwards a copy to the CHDO.

H. POI's Responsibilities. When a deviation is a approved by the RFSD under FAR § 135.39(d), the POI will ensure that the operator notes the deviation in the appropriate section of the certificate holder's company manual. In addition, the CHDO will ensure that a record of the deviation is in OpSpecs paragraph A5.

179. DEVIATIONS FOR BASIC FAR PART 135 OPERATORS. When an applicant meets the requirements for a basic FAR Part 135 operator, certain deviations from FAR Part 135 may be authorized. These deviations are as follows:

- A reduction in the content of the operator's manual (FAR § 135.21(a))
- Different management positions or different numbers of management positions (FAR § 135.37(a))
- Limited modification of training program requirements (FAR § 135.341(a))

181. DELEGATION OF AUTHORITY TO APPROVE DEVIATIONS. The manager of the Flight Standards District Office (FSDO) assigned certification responsibilities is authorized to approve deviations from FAR §§ 135.21(a), 135.37(a), and 135.341(a) for a basic FAR Part 135 operator applicant who proposes to conduct on-demand passenger or cargo carrying operations, or only scheduled cargo carrying operations. The RFSD manager is authorized to approve deviations from FAR §§ 135.21(a), 135.37(a), 135.39 and 135.341(a), for a basic FAR Part 135 operator applicant who proposes to conduct scheduled passenger (commuter) operations. The RFSD manager shall not delegate this authority.

NOTE: If a basic FAR Part 135 operator has been granted a deviation by the CHDO manager and subsequently proposes to operate scheduled passenger carrying operations, any deviation must be re-evaluated for continued approval by the RFSD.

183. LIMITATION OF AUTHORITY TO APPROVE DEVIATIONS.

A. District and regional offices have limited authority to approve deviations from FAR §§ 135.21(a), 135.37(a), and 135.341(a). Deviations from these regulations may be granted only to operators who meet the criteria established in paragraph 175.

B. The authority to approve deviations from FAR §§ 135.21(a), 135.37(a), and 135.341(a) for FAR Part 135 operators and applicants who do not meet the criteria to be classified as single pilot, single PIC, or basic FAR Part 135 operators, is retained by the manager, Flight Standards National Field Office, AFS-500.

C. Deviation from the number of management positions required by FAR § 135.37(a)(1) and (3) will not be granted to any operator authorized to conduct scheduled passenger (commuter) operations. On-demand operators must have personnel in management positions who meet the qualifications for director of operations and the qualifications for director of maintenance. A person who meets both qualification criteria may serve in both positions for on-demand operators.

D. All basic FAR Part 135 operators shall have a manual that includes at least the information required by the following sections of FAR Part 135. Deviation from the manual content requirements of these sections of FAR Part 135 is not authorized.

- 135.23(a)—Management Personnel
- 135.23(b)—Weight and Balance
- 135.23(c)—Information from OpSpecs
- 135.23(e)—Airworthiness Information
- 135.23(f)—Recording Mechanical Irregularities
- 135.23(g)—Recording Corrective Action for Mechanical Irregularities

- 135.23(h)—Obtaining Service and Maintenance
- 135.23(i)—Use of MEL's (if applicable)
- 135.23(j)—Fuel Handling
- 135.23(k)—Passenger Briefing
- 135.23(l)—Flight Locating (if applicable)
- 135.23(o)—Approved Inspection Program (if applicable)

E. Deviation from training program requirements of FAR § 135.341(a) for basic FAR Part 135 operators is limited. The only deviation that may be approved is authorization for a basic FAR Part 135 operator to have portions of its training conducted by another FAR Part 135 operator or a training organization that specializes in providing ground, simulator, and aircraft training.

(1) The training organization must provide training equivalent to that required by Subpart H of FAR Part 135. In all cases the basic FAR Part 135 operator must train its personnel using only programs acceptable to the FAA and specifically authorized by the terms of the deviation. If a basic FAR Part 135 operator wishes to change any item in a training program which may affect the quality of training, the authorization for deviation must be completely reexamined to avoid degrading operational standards.

(2) The basic FAR Part 135 operator must provide to the FAA a written plan detailing how training will be implemented. The plan must accompany the request for deviation. A copy of the other FAR Part 135 operator's (or training organization's) curriculums must be attached to the plan. Before deviation is granted, the plan (and attached training curriculums) must be evaluated and accepted by the CPM or assigned POI, and the manager authorized to approve the deviation. Although these curriculums are not required to be "approved" in the same manner specified in volume 3, chapter 2, of this handbook, they must specify training that equals the quality required for "approved" curriculums.

(3) The written plan must include procedures for maintaining individual crewmember training records. The basic FAR Part 135 operator must maintain the records required by FAR § 135.63. The plan must include provisions for certification of individual training records by the organization that conducts the training.

(4) A basic FAR Part 135 operator must always prepare and keep current curriculum segments for basic indoctrination training (FAR § 135.329(a)(1)) and crewmember emergency training (FAR § 135.331). These curriculum segments will be evaluated and approved in accordance with volume 3, chapter 2, of this handbook.

185. CERTIFICATION PROCESS DIFFERENCES FOR BASIC FAR PART 135 OPERATORS. This paragraph describes deletions, modifications, and additions to the certification process described in chapter 2.

A. Differences in the preapplication phase, are as follows:

(1) The applicant must attach to the PASI a brief statement identifying regulations from which a deviation will be requested. The statement will present justifications for the proposed deviations and include descriptions of the size and scope of the proposed operation.

(2) During the preapplication meeting, the CPM will ensure that the applicant's representatives thoroughly understand that the requested deviations will not be allowed unless the justifications presented with the application merit granting the request. The operator should consider developing alternative plans for certification if any request for deviation is denied.

B. Differences in the formal application phase are as follows:

(1) An additional formal application attachment is required from a basic FAR Part 135 applicant. This attachment must be a letter identifying each regulation from which a deviation is requested. This letter is the formal request for the deviations and must provide the reason for each deviation. The letter must also identify all documents the applicant is submitting in support of the request for deviation.

(2) When a formal application is accepted from a basic FAR Part 135 operator, which requires approval of a deviation by the RFSD, a copy of the application (and the pertinent attachments) shall be forwarded to the regional office within 5 working days of its receipt at the district office. The copy shall be accompanied by the recommendations of the CPM and the district office manager concerning the request for deviation and any background information that will assist the RFSD in making its determination.

(3) The RFSD manager shall provide the district office with a written decision concerning the request for deviation within 10 working days of receiving the application. If permission to deviate is denied, the CPM shall notify the applicant. It may be necessary to reject the entire formal application. However, if the applicant has previously prepared an acceptable, alternative plan to proceed with certification (even though the request for deviation may be

denied), and this plan was made part of the original formal application, denial of a request for deviation may not require rejection of the whole formal application.

(4) When a formal application (submitted by a basic FAR Part 135 operator) includes a request for deviation from the training requirements of FAR § 135.341(a) involving a third party (for example, a training organization or another FAR Part 135 operator), a copy of the application and pertinent attachments shall be forwarded to the regional office within 5 working days. The copy will be accompanied by recommendations from the CPM and district office manager concerning the request for deviation. The RFSD manager shall review and, after coordination with the regional or district office responsible for the training organization or other FAR Part 135 operator, determine what action will be taken on the request. When a training organization is involved (other than a FAR Part 135 operator), the RFSD shall obtain concurrence from AFS-500 before authorizing the deviation. The RFSD shall notify the CPM and district office manager of the acceptability of the request for deviation.

(5) Until the applicant has satisfactorily completed the certification process, any grant of deviation must be temporary. The deviations will be made effective as of the date the certificate is issued.

(6) Each deviation must include provision for automatic invalidation of the deviation when the operator no longer meets the criteria for classification as a basic FAR Part 135 operator.

C. There are no differences in the document compliance phase.

D. There are no differences in the demonstration and inspection phase.

E. There is one difference in the certification phase. Each basic FAR Part 135 operator shall be issued an appropriate standard OpSpecs paragraph authorizing limited deviation from FAR §§ 135.21(a), 135.37(a), and 135.341(a). Figure 2.3.2.3. is the paragraph that will be issued to a basic FAR Part 135 operator authorized to conduct on-demand passenger operations and also scheduled and on-demand cargo operations. Figure 2.3.2.4. is the paragraph that will be issued to a basic FAR Part 135 operator authorized to conduct scheduled passenger (commuter) and on-demand operations including scheduled cargo operations.

186.–200. RESERVED.

FIGURE 2.3.2.1.
OPSPECS PARAGRAPH FOR SINGLE PILOT OPERATOR

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Operations Specifications

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A16. Single Pilot Operator (MM/DD/YY). The certificate holder is authorized in accordance with the conditions and limitations of this paragraph to conduct operations as a Single Pilot Operator. The certificate holder shall conduct all operations under Part 135 under these conditions and limitations.

a. The only individual used as a pilot is _____ , holder of Airman Certificate Number _____ .

b. No Category II or III instrument approach operations are conducted.

#

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2. These Operations Specifications are approved by direction of the Administrator.

Principal Inspector

_____ Inspector Name _____ Office

3. Date approval is effective: _____ Amendment No.: _____
4. I hereby accept and receive the Operations Specifications in this paragraph.

_____ Name _____ Title _____ Date

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FIGURE 2.3.2.2.
OPSPECS PARAGRAPH FOR SINGLE PILOT-IN-COMMAND OPERATOR

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A16. Single Pilot-in-Command Operator (MM/DD/YY). The certificate holder is authorized (in accordance with the deviation provisions of FAR 135.21(a), 135.37(b), 135.341(a), and the conditions and limitations of this paragraph) to conduct operations as a Single Pilot-in-Command Operator. The certificate holder shall conduct all operations under Part 135 under these conditions and limitations.

a. The certificate holder is authorized to conduct operations without the following:

(1) An operations manual, as required by FAR 135.21.

(2) Management personnel, as required by FAR 135.37.

(3) An approved pilot training program, as required by FAR 135.341.

b. The certificate holder shall not conduct any operations under Part 135 unless all of the following conditions are met:

(1) The only individual used as pilot-in-command is _____, holder of Airman Certificate Number _____.

(2) The following individuals are the only persons used as second-in-command pilots.

Name	Certificate Number

(3) Each second-in-command pilot meets the flight crewmember requirements of FAR 135.245.

(4) Each second-in-command pilot meets the pilot testing requirements of FAR 135.293.

(5) Each second-in-command pilot satisfactorily completes the entire test required by FAR 135.293 while occupying the normal second-in-command duty station.

*

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FIGURE 2.3.2.2.—Continued
OPSPECS PARAGRAPH FOR SINGLE PILOT-IN-COMMAND OPERATOR

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(6) No aircraft type certificated for more than nine passenger seats is used.

(7) No Category II or III instrument approach operations are conducted.

(8) No operations are conducted outside the United States, Canada, Mexico, and the Caribbean.

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Principal Inspector

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FIGURE 2.3.2.3.
OPSPECS PARAGRAPH FOR BASIC PART 135 OPERATORS (ON-DEMAND ONLY)

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A16. Basic Part 135 Operator -- On-Demand Operations Only (MM/DD/YY). The certificate holder is authorized (in accordance with the deviation provisions of FAR 135.21(a), 135.37(b), 135.341(a), and the conditions and limitations of this paragraph) to conduct on-demand operations as a Basic Part 135 Operator. The certificate holder shall conduct all operations under Part 135 under these conditions and limitations.

a. The certificate holder is authorized to conduct operations without the following:

(1) The portions of an operations manual required by FAR 135.23(d), 135.23(m), 135.23(n), 135.23(p), 135.23(q), and 135.23(r).

(2) The management personnel and positions required by FAR 135.37(a), provided the certificate holder has at least one person in a management position who meets the qualifications of FAR 135.39(a) to serve as director of operations and one person who meets the qualifications of FAR 135.39(c) to serve as director of maintenance. If one person meets both criteria, the certificate holder may use that person in both positions.

(3) An approved pilot training program, as required by FAR 135.341, provided the certificate holder has:

(a) An approved basic indoctrination ground training curriculum that complies with FAR 135.329(a)(1).

(b) An approved crewmember emergency training curriculum (including provisions for recurrent training) that complies with FAR 135.331.

(c) An approved ground training curriculum for handling and carriage of hazardous materials that complies with FAR 135.333.

(d) Facilites available to conduct the training specified in subparagraphs (a), (b), and (c) above.

(e) An agreement with an air carrier, air agency, or training enterprise which includes the use of appropriate ground and flight curriculums acceptable to the FAA for initial, transition, upgrade, differences, and recurrent training, as appropriate.

b. The certificate holder shall not conduct any operations under Part 135 unless all of the following limitations are met:

(1) No more than five pilots, including seconds-in-command are used.

(2) No more than five aircraft are used.

(3) No more than three different types of aircraft are used. For the purpose of these operations specifications, aircraft type has the same meaning as described in FAR Section 135.293(b).

(4) No check airmen are used.

*

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FIGURE 2.3.2.3.—Continued
OPSPECS PARAGRAPH FOR BASIC PART 135 OPERATORS (ON-DEMAND ONLY)

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(5) No aircraft type certificated for more than nine passenger seats is used.

(6) No Category II or III instrument approach operations are conducted.

(7) No operations are conducted outside the United States, Canada, Mexico, and the Caribbean.

#

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Inspector Name _____ Office _____

3. Date approval is effective: _____ Amendment No.: _____
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FIGURE 2.3.2.4.
OPSPECS PARAGRAPH FOR BASIC PART 135 OPERATOR (COMMUTER & ON-DEMAND)

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A16. Basic Part 135 Operator -- Commuter and On-Demand (MM/DD/YY). The certificate holder is authorized (in accordance with the deviation provisions of FAR 135.21(a), 135.341(a), and the conditions and limitations of this paragraph) to conduct commuter and on-demand operations as a Basic Part 135 Operator. The certificate holder shall conduct all operations under Part 135 under these conditions and limitations.

a. The certificate holder is authorized to conduct operations without the following:

(1) The portions of an operations manual required by FAR 135.23(d), 135.23(m), 135.23(n), 135.23(p), 135.23(q), and 135.23(r).

(2) An approved pilot training program, as required by FAR 135.341, provided the certificate holder has:

(a) An approved basic indoctrination ground training curriculum that complies with FAR 135.329(a)(1).

(b) An approved crewmember emergency training curriculum (including provisions for recurrent training) which complies with FAR 135.331.

(c) An approved ground training curriculum for handling and carriage of hazardous materials that complies with FAR 135.333.

(d) Facilities available to conduct the training specified in subparagraphs (a) (b) and (c) above.

(e) An agreement with an air carrier, air agency, or a training enterprise which includes the use of appropriate ground and flight curriculums acceptable to the FAA for initial, transition, upgrade, differences, and recurrent training, as appropriate.

b. The certificate holder shall not conduct any operation under Part 135 unless all of the following limitations are met:

(1) No more than five pilots, including seconds-in-command are used.

(2) No more than five aircraft are used.

(3) No more than three different types of aircraft are used. For the purpose of these operations specifications, aircraft type has the same meaning as described in FAR Section 135.293(b).

*

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FIGURE 2.3.2.4.—Continued
OPSPECS PARAGRAPH FOR BASIC PART 135 OPERATOR (COMMUTER & ON-DEMAND)

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(4) No check airmen other than initial operating experience (IOE) check airmen are used.

(5) No aircraft type certificated for more than nine passenger seats is used.

(6) No Category II or III instrument approach operations are conducted.

(7) No operations are conducted outside the United States, Canada, Mexico, and the Caribbean.

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FIGURE 2.3.2.5.
OPSPECS PARAGRAPH FOR BASIC PART 135 OPERATORS (ON-DEMAND ONLY) WITH CHECK AIRMEN

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A16. Basic Part 135 Operator -- On-Demand Operations Only (MM/DD/YY). The certificate holder is authorized (in accordance with the deviation provisions of FAR 135.21(a), 135.37(b), 135.341(a), and the conditions and limitations of this paragraph) to conduct on-demand operations as a Basic Part 135 Operator. The certificate holder shall conduct all operations under Part 135 under these conditions and limitations.

a. The certificate holder is authorized to conduct operations without the following:

(1) The portions of an operations manual required by FAR 135.23(d), 135.23(m), 135.23(n), 135.23(p), 135.23(q), and 135.23(r).

(2) The management personnel and positions required by FAR 135.37(a), provided the certificate holder has at least one person in a management position who meets the qualifications of FAR 135.39(a) to serve as director of operations and one person who meets the qualifications of FAR 135.39(c) to serve as director of maintenance. If one person meets both criteria, the certificate holder may use that person in both positions.

(3) An approved pilot training program, as required by FAR 135.341, provided the certificate holder has:

(a) An approved basic indoctrination ground training curriculum that complies with FAR 135.329(a)(1) and an approved check airmen training curriculum segment that complies with FAR 135.339.

(b) An approved crewmember emergency training curriculum (including provisions for recurrent training) that complies with FAR 135.331.

(c) An approved ground training curriculum for handling and carriage of hazardous materials that complies with FAR 135.333.

(d) Facilites available to conduct the training specified in subparagraphs (a), (b), and (c) above.

(e) An agreement with an air carrier, air agency, or training enterprise which includes the use of appropriate ground and flight curriculums acceptable to the FAA for initial, transition, upgrade, differences, and recurrent training, as appropriate.

b. The certificate holder shall not conduct any operations under Part 135 unless all of the following limitations are met:

(1) No more than five pilots, including seconds-in-command are used.

(2) No more than five aircraft are used.

(3) No more than three different types of aircraft are used. For the purpose of these operations specifications, aircraft type has the same meaning as described in FAR Section 135.293(b).

*

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FIGURE 2.3.2.5.—Continued
OPSPECS PARAGRAPH FOR BASIC PART 135 OPERATOR (ON-DEMAND ONLY) WITH CHECK AIRMEN

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(4) No aircraft type certificated for more than nine passenger seats is used.

(5) No Category II or III instrument approach operations are conducted.

(6) No operations are conducted outside the United States, Canada, Mexico, and the Caribbean.

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Principal Inspector

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FIGURE 2.3.2.6.
OPSPECS PARAGRAPH FOR BASIC PART 135 OPERATOR (COMMUTER & ON-DEMAND) WITH CHECK AIRMEN

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A16. Basic Part 135 Operator -- Commuter and On-Demand (MM/DD/YY). The certificate holder is authorized (in accordance with the deviation provisions of FAR 135.21(a), 135.341(a), and the conditions and limitations of this paragraph) to conduct commuter and on-demand operations as a Basic Part 135 Operator. The certificate holder shall conduct all operations under Part 135 under these conditions and limitations.

a. The certificate holder is authorized to conduct operations without the following:

(1) The portions of an operations manual required by FAR 135.23(d), 135.23(m), 135.23(n), 135.23(p), 135.23(q), and 135.23(r).

(2) An approved pilot training program, as required by FAR 135.341, provided the certificate holder has:

(a) An approved basic indoctrination ground training curriculum that complies with FAR 135.329(a)(1) and an approved check airmen training curriculum segment that complies with FAR 135.339.

(b) An approved crewmember emergency training curriculum (including provisions for recurrent training) which complies with FAR 135.331.

(c) An approved ground training curriculum for handling and carriage of hazardous materials that complies with FAR 135.333.

(d) Facilities available to conduct the training specified in subparagraphs (a) (b) and (c) above.

(e) An agreement with an air carrier, air agency, or a training enterprise which includes the use of appropriate ground and flight curriculums acceptable to the FAA for initial, transition, upgrade, differences, and recurrent training, as appropriate.

b. The certificate holder shall not conduct any operation under Part 135 unless all of the following limitations are met:

(1) No more than five pilots, including seconds-in-command are used.

(2) No more than five aircraft are used.

(3) No more than three different types of aircraft are used. For the purpose of these operations specifications, aircraft type has the same meaning as described in FAR Section 135.293(b).

*

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FIGURE 2.3.2.6.—Continued
OPSPECS PARAGRAPH FOR BASIC PART 135 OPERATOR (COMMUTER & ON-DEMAND) WITH CHECK AIRMEN

U.S.Department of Transportation Federal Aviation Administration

Operations Specifications

Form Approved OMB NO. 2120-00028

(4) No aircraft type certificated for more than nine passenger seats is used.

(5) No Category II or III instrument approach operations are conducted.

(6) No operations are conducted outside the United States, Canada, Mexico, and the Caribbean.

#

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2. These Operations Specifications are approved by direction of the Administrator.

Principal Inspector

Inspector Name _____ Office _____

3. Date approval is effective: _____ Amendment No.: _____
4. I hereby accept and receive the Operations Specifications in this paragraph.

Name _____ Title _____ Date _____

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such as flare pots, or required special navigation and communications equipment).

196. C68—NOISE ABATEMENT DEPARTURE PROFILES (NADP) ITEM 7K.

A. C68 authorizes an operator to conduct NADP's using aircraft with a maximum certificated gross takeoff weight of more than 75,000 pounds. Operators may use either or both of two standard NADP's as described in AC 91-53, "Noise Abatement Departure Profiles," as amended. Checklist item 7k is used to generate OpSpecs paragraphs A4(a), C68, and a new table of contents.

B. Before authorizing this paragraph, the POI must ensure that all airplane vertical departure profiles described in the certificate holder operations and/or training manuals comply with the minimum criteria established in AC 91-53 for NADP's (Close-In and Distant) before approving paragraph C68 for the certificate holder's OpSpecs. The certificate holder shall not use any other departure profile (except as stated in FAR Part 91) that is not defined within the AC.

NOTE: Use of FAR Part 91 procedures do not require OpSpecs authorization. If the operator does not meet the criteria established in AC 91-53, then item 7k will not be checked and C68 will not be issued.

C. Proposed exceptions to the criteria as stated in this OpSpec which would be less limiting (less than 800 feet above field elevation (AFE)) must be addressed by the certificate holder to the certificate holder's POI for concurrence by AFS-400 of the Flight Standards Service.

D. AC 91-53, effective July 22, 1993, established minimum acceptable criteria for speed, thrust settings, airplane configurations and the criteria for both the Close-In and Distant NADP's. These NADP's can be combined with preferential runway selection and flight path techniques to minimize noise impact.

NOTE: The Distant departure profiles requires an initiation of flaps/slats retraction prior to thrust cutback initiation with the thrust cutback initiation at an altitude of no less than 800 feet AFE. Configuration changes necessary to meet regulatory performance or operations requirements shall not be affected by this procedure. For those airplanes that have a performance requirement to reduce takeoff flaps to an intermediate takeoff flap setting at 400 feet AFE or above, the next flap/slats retraction should be initiated at an altitude of no less than 800 feet AFE.

197. C70—AIRPORTS AUTHORIZED FOR SCHEDULED OPERATIONS.

A. Under SFAR 38-2 paragraph 3, the OpSpecs must prescribe the authorizations and limitations for each type of operation. All regular airports shall be listed in the OpSpecs of all operators conducting scheduled operations. This includes domestic operations, flag operations, and commuter operations. Provisional and refueling airports shall be listed for FAR Part 121 domestic and flag operations. The operator may maintain a current list of these airports, and that list can be incorporated in the OpSpecs by reference to the list in C70.

B. If the airports are to be listed in C70, the OpSpecs worksheet and computer provide a template for the information that must be listed. This information includes the following:

- Airport name
- Three-letter identifier of the airport, if available
- Airplanes authorized to use the airport (Normally, the operator's airplanes can be listed in the seven spaces provided at the top of the "Authorized Airplanes" column.)
- A notation as to whether the airport is a regular (R), refueling (F) or provisional (P) for each type of airplane authorized (Refueling and provisional airports are not applicable to FAR Part 135 operators.)

C. The following is an example of how this information can be formatted:

AIRPORT NAME	IDENT	AIRPLANES AUTHORIZED					P. FOR IDENT
		L1011	B737	DHC7	B99	CV580	
William B Hartsfield Atlanta Intl	ATL	R	R				
Dekalb - Peachtree	PDK		P				ATL
Greater Buffalo Int'l	BUF	R	R	R	R	R	
Albany County	ALB		F	R	R	R	
John F. Kennedy Int'l	JFK	R	P	P	R	R	LGA
La Guardia	LGA		R	R	R	R	

NOTE: If an airport is designated as provisional, the regular airport or airports for which it serves as a provisional airport must be annotated. (Except in unique situations, an airport should not be designated as a provisional airport if it is located more than 100 statute miles outside of the metropolitan area served by the regular airport.)

D. If the operator provides a list of airports to be incorporated into C70, this list must provide the same type of information discussed in subparagraphs B and C. This list must be annotated with the effective date of the listing. The list does not need to be physically attached to C70, but it must be maintained on file in the CHDO with copies of the operator's OpSpecs. If a list is provided, no entries should be made on the OpSpecs worksheet or in the computer. If no entry is made, the computer will automatically print "See Attached Listing" below the text of C70.

E. C70 specifies that the operator must maintain a list of alternate airports which can be used. This list of alternates may be integrated into the list provided by the operator, if desired. If a separate list of alternate airports is maintained by the operator, the FAA does not need to maintain a copy. The POI, however, should occasionally inspect the list of alternates to determine airport and airplane compatibility.

198.–210. RESERVED.

[PAGES 3-101 THROUGH 3-104 RESERVED]

CHAPTER 1. OPERATIONS SPECIFICATIONS

SECTION 6. PART H—HELICOPTER TERMINAL INSTRUMENT PROCEDURES AND AIRPORT AUTHORIZATIONS AND LIMITATIONS

211. GENERAL. Part H is issued to each operator who conducts Federal Aviation Regulations (FAR) Part 135 instrument flight rules (IFR) operations with helicopters. It is not issued to FAR Part 135 operators who conduct only fixed-wing airplane operations. Part H is not usually issued to FAR Part 135 on-demand helicopter operators who are restricted to visual flight rules (VFR)-only operations. In rare situations, operations specifications (OpSpecs) paragraph H120 is issued to FAR Part 135 VFR-only operators who are authorized to conduct commuter operations with helicopters.

213. H101—TERMINAL INSTRUMENT PROCEDURES. H101 is issued to all helicopter operators who conduct any flight operations under IFR. IFR operators whose operations are restricted to the 50 United States (U.S.) are only issued H101a(1), (2), and (3). The whole paragraph is issued to operators who are authorized to conduct any IFR helicopter operation outside of the U.S. Federal Aviation Administration (FAA) Order 8260.31B, "Foreign Terminal Instrument Procedures," provides direction and guidance on acceptance of foreign terminal instrument procedures. Additional information concerning terminal instrument procedures is in volume 4, chapter 2.

215. H102—BASIC INSTRUMENT APPROACH PROCEDURE AUTHORIZATIONS—ALL AIRPORTS. H102 specifies the types of instrument approaches the helicopter operator is authorized to conduct and prohibits the use of other types of instrument approaches. Only the types of instrument approaches checked on the OpSpecs worksheet for C52 will be printed in paragraph H102. If precision approaches are not authorized, H102b will not be printed. Before authorizing a type of instrument approach procedure (IAP), the principal operations inspector (POI) must ensure that the operator provides appropriate training for the types of approaches to be authorized. See volume 4, chapter 2, for information on required training for various types of approaches.

217. H103—IFR LANDING MINIMUMS OTHER THAN AIRBORNE RADAR AND CATEGORIES II AND III APPROACHES—ALL AIRPORTS. H103 specifies the lowest minimums that can be used for Category I nonprecision approaches, precision approaches, and circling maneuvers. It prescribes conditions that must be met in order to conduct contact approaches. It also provides special limitations and provisions for instrument approach procedures at foreign airports. If an operator is not authorized to conduct precision approaches, the language of H103b will be automatically changed to prohibit the use of precision approaches. If the operator is not authorized to conduct operations outside the U.S., H103e will not be issued. See volume 4, chapter 2, for information on required training for circling maneuvers and contact approaches.

219. H104—HELICOPTER EN ROUTE DESCENT AREAS. (o/s 13j) H104 is issued to all operators authorized to conduct IFR helicopter operations using helicopter en route descent procedures within specified areas of operation. It is not issued to helicopter operators who are not authorized to use helicopter en route descent procedures. The following example illustrates one method of authorizing use of a particular helicopter en route descent area.

Authorized Helicopter En Route Descent Areas	Lowest Authorized Altitude (LAA)	Remarks, Limitations, and Conditions
Eugene Island Block 191	400 ft	Increase LAA to 700 ft with radar altimeter or mapping radar inoperative

D. Direct observation of testing and checking is an effective method for determining whether learning has occurred. Examining the results of tests, such as oral or written tests or flight checks, provides a quantifiable method for measuring training effectiveness. The POI must examine and determine the causal factors of significant failure trends.

E. Direct observation of training and checking in progress is an effective method of evaluating training. Sometimes the opportunity for direct observation, however, will be limited. In such cases, the POI will have to rely more on his evaluation of other sources of information such as reports of surveillance and investigations. Results of inspection reports, incident or accident reports, enforcement actions, and other relevant information about the operator's performance should be reviewed by the POI for indications of training effectiveness. The POI must establish methods to evaluate these sources of information for trends that may develop while training is being conducted under initial approval. For example, repeated reports of deficiencies such as excessive taxi speed, navigation deviations, incomplete briefings, or incorrect use of the checklists, may be traceable to a lack of specific training or ineffective training. Such information may provide indications that revisions or refinements are needed for a curriculum segment and/or training modules.

TABLE 3.2.2.1.
ELEMENTS FOR TRAINING EVALUATION

	ELEMENTS AVAILABLE FOR EVALUATING TRAINING
CURRICULUM SEGMENT OUTLINES	Curriculum segment outlines contain the specific training modules and the amount of time allocated for the curriculum segment. The modules must be consistent with regulatory requirements and safe operating practices. This element requires direct examination.
COURSEWARE	Courseware converts curriculum outline information into usable instructional material. Courseware must be consistent with the curriculum outline and be organized to permit effective instructional delivery. It is readily adaptable to adjustments and refinement by the operator. This element usually requires direct examination.
INSTRUCTIONAL DELIVERY METHODS AND TRAINING ENVIRONMENT	Instructional delivery methods are used to convey information to the student. Effective learning is maximized if the instructional delivery adheres to and properly uses the courseware. The training environment should be conducive to effective learning. This element requires direct observation.
TESTING AND CHECKING	Testing and checking is a method for determining whether learning has occurred. Testing and checking standards are used to determine that a desired level of knowledge and skill has been acquired. Testing and checking also measures the effectiveness of courseware and instructional delivery. This element requires direct observation. It can be supplemented by examining operator records of tests and checks.
SURVEILLANCE AND INVESTIGATION OF OPERATOR ACTIVITIES	Surveillance and investigations produce information about an operator's overall performance. A high rate of satisfactory performance usually indicates a strong, effective training program. Repeated unsatisfactory performances can often be traced to deficiencies in a training program. This element requires the examination and analysis of surveillance and investigative reports.

339. METHOD FOR GRANTING FINAL APPROVAL—PHASE FIVE. This phase involves the granting of final approval of an operator's training curriculum. Based on the results of the evaluation, the POI must determine whether to grant or deny final approval of a training curriculum. This determination must be made before the expiration date of the initial approval. If the POI decides not to grant final approval, the procedures outlined in paragraph 343 shall be followed. If the POI decides that final approval should be granted, the following procedures apply:

A. Programs that Contain a List of Effective Pages. Although the method presently stated in this handbook may still be used in the approval process (that is, stamping each page), another procedure may also be used. Final approval of the training curriculum can be granted and documented by the POI on the

List of Effective Pages. This means that the FAA has given final approval of every page of the operator's training curriculum, as listed on that page, but only one FAA approval block must be completed and signed.

(1) The stamped page that documents final approval of the training curriculum and/or curriculum segment shall be stamped for approval, dated, and signed by the POI. The approval stamp that appears on the page should be a facsimile of the stamp that appears in this paragraph.

(2) The original curriculum and/or curriculum segment must contain the one page that documents FAA approval on the List of Effective Pages. The curriculum and/or curriculum segment must be transmitted to the operator with an approval letter signed by the POI in accordance with handbook guidance.

B. Programs that do not Contain a List of Effective Pages. The original and a copy of each page of the training curriculum and/or curriculum segment shall be stamped for approval, dated, and signed by the POI. The approval stamp shall appear on each page and be a facsimile of the following stamp:

FAA FINAL APPROVAL

OFFICE DESIGNATOR: _____
EFFECTIVE DATE: _____
NAME: _____
SIGNATURE: _____

C. The original stamped curriculum or curriculum segment must be transmitted to the operator with an approval letter signed by the POI. This letter must specifically identify the curriculum or curriculum segment; contain a statement that final approval is granted; and provide the effective date of approval. This letter must also state that final approval shall remain in effect until otherwise notified by the FAA that a revision is necessary in accordance with FAR § 121.405(e) or FAR § 135.325(d), provided the operator continues to train in accordance with the approved curriculum. If the POI is authorizing a reduction in the programmed hours specified by FAR Part 121, the letter must contain a statement concerning the basis for reduction. A copy of the stamped curriculum or curriculum segment, and a copy of the approval letter must be kept on file in the CHDO. Figures 3.2.2.4. and 3.2.2.5. are sample letters of final approval.

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
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 exits I 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-10	345	Three pair Type A and one pair Type I exits The DC-10 Series includes: DC-10-10/DC-10-30 DC-10-10F/DC-10-30F DC-10-15/DC-10-40	Demo	Dual aisle interior configuration
DC-10	380	Three pair Type A exits, and one pair improved Type I exit with a 36-inch passageway leading to exits, double-lane slides, and two flight attendant assist spaces each at doors 1L and 1R	Demo	Dual aisle interior configuration, an improved Type I exit is known as a Type "B," contact LAACO for additional details concerning this configuration; reference Exemption 1573
MD-11	410	Three pair Type A exits, and one pair improved Type I exit with 36-inch passageway leading to exits, double-lane slide/rafts, and flight attendant assist spaces at all doors.	Analysis/Platform Demo	Dual aisle interior configuration, an improved Type I exit is known as a Type "B", Special flight attendant training requirements for seating capacity above 381. Contact LAACO and LGB-AEG for details concerning this configuration.
NIPPON YS-11	59	Data to be added at next revision		Add 5 if two inflatable slides are installed
VICKERS VC 745 D	51	Other data not appropriate due to age of airplane		
VC 800	72	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

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) 988-5273, prior to approving a change to either the passenger capacity or interior configuration.

[PAGES 3-913 THROUGH 3-950 RESERVED]

CHAPTER 12. ENVIRONMENTAL CONSIDERATIONS AND RESPONSIBILITIES

SECTION 1. BACKGROUND INFORMATION

1851. THE PUBLIC LAW. The following congressional acts and executive orders implemented through the Federal Aviation Administration (FAA) regulations and orders require consideration and action by Flight Standards aviation safety inspectors (ASI).

A. Title 49, United States Code (U.S.C.). Section 44715 of the U.S.C. (formerly § 611 of the Federal Aviation Act of 1958) directs the FAA to provide present and future relief and protection to the public health and welfare by the control and abatement of aircraft noise. The FAA must consider whether noise abatement regulations are economically reasonable, technologically practicable, and appropriate for the particular type of aircraft.

B. The National Environmental Policy Act of 1969 (NEPA). This public law establishes a broad national policy to promote efforts for improving the relationship between human beings and their environment. NEPA sets certain policies and goals concerning the environment and requires that to the fullest extent possible, the policies, regulations, and public laws of the United States shall be interpreted and administrated in accordance with those policies and goals. NEPA requires that all "major Federal actions" be evaluated for environmental impact through multidisciplinary studies.

C. Executive Order No. 11514. This order, issued in 1970, directs all federal agencies to monitor, evaluate, and control their activities to protect and enhance the quality of the environment. This order also requires the review of regulations, policies, and procedures relating to licenses and permits. It also requires implementation of any corrective action necessary to ensure compliance and consistency with NEPA.

1853. ENVIRONMENTAL RESPONSIBILITIES. Flight Standards environmental responsibilities are stated in paragraph 1 of Appendix 4 of FAA Order 1050.1, "Policies and Procedures for Considering Environmental Impacts," as amended. Normally, the district/field office responsible for the action is also responsible for the environmental assessment. If additional aircraft operations will significantly affect the environment, certain procedural reviews that consider the "public need" must be accomplished before an operator's operations specifications are issued or amended. Additionally, the FAA and its employees are responsible for ensuring compliance with regulations and procedures established to protect and enhance the environment. The following sections provide direction and guidance for fulfilling Flight Standards' responsibility with respect to the national environment.

1855. AVAILABILITY OF ASSISTANCE. A thorough discussion on the subject of environmental and aircraft noise requirements is not possible within the framework of this handbook. Additional information is in FAA Orders 1050.13, "Replacement, Apportionment, and Compliance Plans Submitted Under Subpart E of FAR Part 91," and 1050.1, as amended. Flight Standards inspectors should not hesitate to request assistance. Assistance is available through the regionally assigned noise abatement officer (NAO) (FAA Order 1050.11, "Noise Control Planning") and Washington Headquarters staff personnel in the Office of Environment and Energy (AEE-110 and AEE-120 at (202) 267-8933). Assistance on performance and aircraft noise considerations is available through the appropriate aircraft evaluation groups (AEG) and AFS-430. Regional flight procedures staff personnel can often provide assistance on departure and arrival procedures established for noise abatement purposes. Questions concerning flightcrew operational procedures for noise abatement procedures should be directed to Headquarters Flight Standards staff personnel (AFS-430).

1856.–1860. RESERVED.

[PAGES 3-982 THROUGH 3-988 RESERVED]

CHAPTER 12. ENVIRONMENTAL CONSIDERATIONS AND RESPONSIBILITIES

SECTION 2. AIRCRAFT NOISE

1861. PERTINENT REGULATIONS AND ORDERS.

A. As a result of § 44715 of Title 49, United States Code (U.S.C.) (formerly § 611 of the Federal Aviation Act of 1958), the Federal Aviation Administration (FAA) adopted Federal Aviation Regulations (FAR) Part 36 (effective December 1, 1969), which establishes noise standards for issuance of aircraft type certificates, changes to those certificates, and to standard airworthiness certificates. To complement FAR Part 36, the FAA issued FAR Part 91, Subpart I, requiring civil, subsonic turbojet aircraft over 75,000 pounds, which do not meet the FAR Part 36 noise standards, to be modified by January 1, 1985, if these aircraft are to operate at United States (U.S.) airports.

B. Special Federal Aviation Regulation (SFAR) 47, effective February 26, 1985, provides for limited issuance of special flight authorizations to conduct certain nonrevenue operations that are otherwise prohibited by the noise restrictions in FAR Part 91, Subpart I. Permissible operations include flights to an airport for alterations to achieve noise compliance, for exportation of the aircraft, and for scrapping the airplane. These special flight authorizations are issued by the Office of Environment and Energy (AEE-1).

C. FAA Order 1050.13, "Replacement, Apportionment, and Compliance Plans Submitted Under Subpart E of FAR Part 91," (this order predates Subpart I) establishes procedures and assigns responsibilities for aircraft noise compliance plans submitted by U.S. operators under Subpart I of FAR Part 91.

1863. FLIGHT STANDARDS RESPONSIBILITIES. As of January 1, 1985, all civil turbojet aircraft with maximum weights of more than 75,000 pounds that are U.S. registered and have standard airworthiness certificates (or equivalent aircraft that are foreign registered) operating into U.S. airports, must have been shown to comply with Stage 2 or Stage 3 noise levels as specified in Appendix C of FAR Part 36. The showing of compliance, for aircraft issued original standard airworthiness certificates after the appropriate dates specified in FAR § 36.1, is accomplished during the aircraft certification process. Operators of these aircraft automatically comply with FAR Part 91, Subpart I, aircraft noise requirements, and no specific Flight Standards responsibilities are defined. Operators of aircraft issued original standard airworthiness certificates before the appropriate dates specified in FAR § 36.1 were required by FAR Part 91, Subpart I, to make a specific showing of compliance or submit a compliance plan and status reports to AEE-1. Alternatively, the operator may apply for an exemption from that office. Questions concerning a specific aircraft type or a specific operator's compliance status with FAR Part 91, Subpart I, should be directed to AEE-110. In addition, AEE-110 will provide copies of compliance plans, status reports, and any exemptions upon request. With respect to aircraft noise and FAR Part 91, Subpart I, requirements, Flight Standards inspectors are responsible for the following:

A. For any flight operation suspected of being in violation of FAR Part 91, Subpart I, inspectors must initiate an investigation and prepare an Enforcement Investigation Report (EIR), if appropriate (see FAA Order 2150.3, "Compliance and Enforcement Program"). Upon initiation of an investigation, AEE-1 and the Regional Flight Standards Division (RFSD) shall be notified. Assistance may be requested from these offices if considered necessary.

B. When known, the RFSD will be notified of any operator who has failed to submit the compliance plans and status reports required by FAR § 91.813. The Flight Standards division will also be notified when it is suspected that an operator has failed to comply with its submitted compliance plan. The Flight Standards division will, in turn, notify AEE-1 and regional counsel. Flight Standards field inspectors will take action only when directed by the RFSD in coordination with both regional counsel and AEE-1.

C. Inspectors shall surveil assigned FAR Part 121, 125, and 135 certificate holders (including FAR Part 125 deviation holders) who operate Stage 1 aircraft under FAR § 91.801 to determine the following:

- That an appropriate exemption (either under FAR Part 11 or FAR § 91.811) is aboard each aircraft

- That the operator continues to provide AEE-1 with current compliance plan status reports as required by FAR § 91.813 (FAA Order 1050.13 provides additional information on required compliance plans and status reports.)
- That the operator is complying with all exemption restrictions, such as night curfews

D. District offices having responsibility for FAR Part 129 operators should conduct liaison and/or surveillance as necessary to determine compliance with the FAR Part 91 noise limits (the operator is using only aircraft that are compliant or exempted). Suspected violations must be investigated, and an EIR must be prepared, if appropriate.

E. Inspectors shall surveil flight operations conducted under SFAR 47 to determine the following:

- That a special flight authorization is on board the airplane during all operations at U.S. airports
- That the operator is complying with all conditions and limitations established by the authorization
- That the airplane has an appropriate airworthiness certificate or ferry permit to perform the flight

1864.–1868. RESERVED.

[PAGES 3-991 THROUGH 3-998 RESERVED]

CHAPTER 12. ENVIRONMENTAL CONSIDERATIONS AND RESPONSIBILITIES

SECTION 3. ENVIRONMENTAL ASSESSMENTS

1869. GENERAL. The National Environmental Policy Act (NEPA) and the Executive Order 11514 require federal agencies to assess the potential impact that any major federal action will have on the environment. Federal Aviation Administration (FAA) Order 1050.1, "Policies and Procedures for Considering Environmental Impacts," as amended, is the FAA's directive that implements the requirements of NEPA and Executive Order 11514. This section describes situations in which Flight Standards regional and field inspectors shall prepare an environmental assessment (EA) and provides direction and guidance for following the appropriate environmental analysis procedures outlined in Attachment 2 of FAA Order 1050.1.

1871. TYPES OF ACTION REQUIRING AN EA BY FIELD INSPECTORS. Operations specifications (OpSpecs) authorize the use of specific airports for scheduled operations. The issuance of an air carrier certificate or operating certificate and associated OpSpecs, and the amendment of current OpSpecs may significantly change the character of the operational environment of an airport. Thus, the Flight Standards field inspector responsible for the issuance or amendment of certain OpSpecs is also responsible for the preparation of the EA. Normally, the following situations will require the preparation of an EA:

- Amendment of any OpSpecs authorizing an operator to use turbojet airplanes for scheduled service into an airport not previously serviced by any scheduled turbojet airplanes
- Issuance or amendment of any OpSpecs authorizing an operator to use the Concorde for any scheduled/nonscheduled service into an airport, unless an EA for such service has been prepared previously
- Issuance of any OpSpecs to a scheduled operator to initially authorize the use of turbojet airplanes and to serve an airport not previously serviced by scheduled turbojet airplanes

1873. OFFICIAL RESPONSIBLE FOR ACCOMPLISHING THE EA. Administrative procedures require the governmental official who finalizes the federal action to also decide what actions will be taken as a result of the EA. In most cases, this official will be the assigned POI responsible for approving OpSpecs that authorize airports for scheduled service with turbojet aircraft. Due to the varied and complex procedures used in determining whether a particular operation will significantly affect the environment, the principal operations inspector (POI) must coordinate significant noise activities with appropriate offices. Procedures established in paragraphs 1875 and 1877 of this section ensure proper coordination and documentation of the EA. The POI or certification project manager (CPM) will coordinate with the affected geographic regional noise abatement officer (NAO) by communicating through the certificate-holding regional NAO when an EA is required for operations at an airport outside the certificate-holding region.

1875. COLLECTION OF INFORMATION.

A. To prepare an EA, certain types of information must be collected. When an applicant air operator is involved in the certification process, the CPM is responsible for collecting the information from the operator. In other situations, the POI assigned to the operator is responsible for collecting the information from the operator. The responsible inspector will advise the operator that this information is necessary for preparing an EA and that an EA is required before the OpSpecs can be issued or amended.

B. The operator may wish to prepare its own EA or contract with another person to prepare the EA. In this situation, the responsible inspector will advise the operator that the EA report must be prepared in accordance with FAA Order 1050.1. Most private contractors who perform this type of work are familiar with this order. The operator-prepared EA must be forwarded to the responsible inspector for processing.

C. The following information must be collected:

- Proposed airports at which scheduled turbojet aircraft service will be introduced
- Type aircraft and engines to be used
- Number of proposed scheduled operations per day
- Number of proposed landing and takeoff operations during daytime (0700-2159 local) at airports to be served
- Number of proposed landing and takeoff operations during nighttime (2200-0659 local) at airports to be served
- Air operator's long range plans (1 to 2 years) to include planned service expansion, planned changes in flight frequency, and planned changes in daytime or nighttime scheduled operations

1877. PROCESSING THE EA.

A. Attachment 2 of FAA Order 1050.1 identifies the environmental analysis and outlines the procedures to be used in preparing an EA. Normally, aircraft noise will be the primary subject of a Flight Standards EA that supports the issuance or amendment of OpSpecs. However, the environmental analysis procedures in Attachment 2 of FAA Order 1050.1 should be reviewed for applicability.

B. Upon receipt of the operational information described in paragraph 1875, a noise analysis will be performed using the Area Equivalent Method (AEM) discussed in paragraph 1 of Attachment 2 of FAA Order 1050.1 and in FAA Report No. EE-84-12. As stated in paragraph 1-5, assistance is available from the regionally assigned NAO, and guidance is available from AEE-110/120.

C. Generally, if the results of the AEM calculations show less than a 17 percent increase in the 65 day-night level (DNL) contour area, it may be concluded that the federal action would not significantly change the operational environment of the airport and a finding of no significant impact (FONSI) should be prepared. The preparation of the FONSI in accordance with chapter 4 of FAA Order 1050.1 is the responsibility of the CPM or the POI. See figure 3.12.3.1. for a sample of a FONSI.

D. In the event that the AEM calculations show at least a 17 percent increase in the 65 DNL contour area, it would be necessary to determine if the proposed action would result in a 1.5 DNL or greater increase on a noise sensitive area. The FAA's integrated noise model (INM) would be used to perform a noise sensitive area analysis. Such events should seldom occur because more quiet and fuel efficient turbojet aircraft are being used to introduce or increase scheduled service at small and medium hub airports. The INM calculation may also be performed by a contractor, and the results and recommendations would be provided to the CPM or POI who would be responsible for preparing and coordinating the categorical exclusion (EA/FONSI or Environmental Impact Statement (EIS)), which may be approved by the regional division manager.

E. In case of doubt as to whether an EIS is necessary, the Flight Standards division manager or a designee shall consult with the regional NAO, AEE-1, and AGC-1. If an EIS is required, the Flight Standards division manager or a designee shall advise the operator and obtain any additional information necessary to prepare a draft EIS. The new or amended OpSpecs will not be issued until all issues and questions associated with the EIS are fully resolved and the regional director has concurred with the issuance or amendment of the OpSpecs. No decision on the proposed action can be made sooner than 90 days after the Environmental Protection Agency (EPA) has published a notice in the Federal Register for a draft EIS or 30 days after publication of the notice for a final EIS. See FAA Order 1050.1 for the EIS process.

1878.–1882. RESERVED.

FIGURE 3.12.3.1.
SAMPLE OF A FONSI

DEPARTMENT OF TRANSPORTATION

FEDERAL AVIATION ADMINISTRATION

FINDING OF NO SIGNIFICANT IMPACT
FOR

AMENDMENT OF OPSPECS
TEE TAIL AIRWAYS, INC.
TURBOJET OPERATIONS

A. Proposed Action.

Commencing on or about January 1, 1988, Tee Tail Airways, Inc. proposes to operate twin engine turbojet Fokker F-28 1000 aircraft over certain of its scheduled air carrier routes. The turbojet aircraft will supplement Tee Tail's current fleet of turbopropeller airplanes.

B. Environmental Considerations.

1. All airports that will be served by Tee Tail's F-28 aircraft, except for Mount Rock Airport, Anytown USA, are currently served by scheduled air carriers with turbojet aircraft of equal or greater size.

2. Mount Rock Airport currently accommodates approximately 32,500 aircraft per year of which approximately 2,490 are business jets; these include Learjets, Gulfstream II's, Saberliners, Westwinds.

3. Tee Tail Airways proposes to operate only one flight per day into Mount Rock Airport with F-28 aircraft.

4. All operations will be conducted in accordance with established noise abatement rules and procedures.

5. A draft compatibility study recently completed for Mount Rock Airport by Smith Associates, Oxon Hill Airport Consultants, relative to noise control and land use planning, does not indicate that the frequency of operations at present or anticipated in the near future is considered to cause a significant impact on the air and water quality, aesthetics, and/or social conditions. Additionally, construction, wetlands, flood plains, historic sites, coastal zones, and prime farmland considerations are not involved.

6. According to Advisory Circular AC-36-3F, "Estimated Airplane Noise Levels in A-Weighted Decibels," the Fokker F-28 aircraft estimated DBA at maximum takeoff gross weight is 79.2; this is lower than many business jets and certain models of the B-737 and DC-9 aircraft which operate into most of the affected airports.

7. According to the Office of Environment and Energy Noise Abatement Division (AEE-100), a computer analysis for Mount Rock Airport disclosed that the 65 DNL noise contour would be increased by 6.5 percent from the addition of one F-28 aircraft flight per day. This is well within the limits established for a finding of no significant impact statement. The normal increase limit established for that purpose is 17 percent.

8. These flights will be operated during daylight hours only.

C. Alternatives — No Action.

An alternative was not considered appropriate in this instance.

D. Conclusion.

After careful and thorough consideration of the facts contained herein, the undersigned finds that the proposed federal action is consistent with existing national environmental policies and objectives as set forth in Section 101(a) of the National Environmental Policy Act (NEPA) of 1969 and that it will not significantly affect the quality of the human environment or otherwise include any condition requiring consultation pursuant to section 102(2)(C) of NEPA.

APPROVED:

DATE:

REGIONAL DIRECTOR, XXX-1

[PAGES 3-1002 THROUGH 3-1006 RESERVED]

FIGURE 3.14.4.1.—Continued
FLIGHT ATTENDANT GENERAL EMERGENCY CURRICULUM SEGMENT JOB AID
SUBJECT AREA 3: EMERGENCY DRILL TRAINING

TRAINING SUBJECTS	EVALUATION CRITERIA			
	ADEQUACY OF ELEMENTS/ EVENTS	ADEQUACY OF COURSEWARE	TRAINING AIDS AND FACILITIES	
ONE-TIME DRILLS: Initial New-Hire Training				
Protective Breathing Equipment/Fire-fighting				
Emergency Evacuation*				
PERFORMANCE DRILLS: Initial New-Hire and Initial Equipment Training; Once Every 24 Months During Recurrent Training				
Emergency Exit*				
Hand-Held Fire Extinguishers*				
Emergency Oxygen System*				
Flotation Devices*				
Ditching*				
OBSERVATION DRILLS: Initial New-Hire and Initial Equipment Training; Once Every 24 Months During Recurrent Training				
Liferaft Removal and Inflation*				
Slideraft Transfer				
Slideraft Deployment, Inflations, and Detachment				
Emergency Evacuation/Slide				

* Required by FAR 135.331(c) (Time Sequence not specified.)

[PAGES 3-1096 THROUGH 3-1104 RESERVED]

CHAPTER 14. FLIGHT ATTENDANT TRAINING AND QUALIFICATION PROGRAMS

SECTION 5. FLIGHT ATTENDANT AIRCRAFT GROUND TRAINING CURRICULUM SEGMENT

2011. GENERAL. This section specifies the objectives of a flight attendant (F/A) aircraft ground training curriculum segment and discusses the structure and content of aircraft ground training. Two distinct subject areas of aircraft ground training are identified: general operational subjects and aircraft-specific emergency training. These subject areas must contain training to satisfy the requirements of Federal Aviation Regulations (FAR) Parts 121 and 135.

A. Objective. The objective of aircraft ground training is to provide F/A's with an understanding of the basic aircraft to which the F/A will be assigned. This knowledge is necessary for the F/A to perform required duties and procedures in routine, abnormal, and emergency situations. Aircraft ground training, as used in this section, is training for a specific aircraft. An operator may use many methods when conducting aircraft ground training, including classroom instruction, ground training devices, computer-based instruction (CBI), and static aircraft.

B. Scope and Content. The scope and content of the training module events and elements presented in this chapter are examples for guidance and may be particularly useful for a new operator undergoing certification by the Federal Aviation Administration (FAA). Although the modular content provided in these examples exceeds FAA regulatory requirements, the FAA considers it to exemplify a good operating practice; however, the inspector should not require existing operators who are functioning under currently approved training programs to change their training solely to accommodate the examples presented in this chapter.

2013. AIRCRAFT GROUND TRAINING CURRICULUM SEGMENT. The outline for an aircraft ground training curriculum segment should include training that is appropriate to the operator's type of operation. The operator should outline the training in two distinct subject areas of aircraft ground training: general operational subjects training, and aircraft-specific emergency subjects training.

A. Module Outline. Modules are outlined under each subject area. The outline should provide a descriptive title of the module and list the related elements or events presented during instruction. The modules, elements, and events listed under the subject area should contain enough detail to ensure that they provide FAR-required training.

B. Level of Detail. Operators do not have to include detailed descriptions of each element or event within a training module outline. Detailed descriptions are more appropriate when included in the operator's courseware. During the approval process, the principal operations inspector (POI) should review courseware as necessary to ensure that the scope and depth of the training modules are adequate.

C. Operator's Flexibility. An operator has a certain amount of flexibility in the construction of the aircraft ground training modules, as follows:

(1) Training Hours. The number of training hours must be specified on all aircraft ground training curriculum segment outlines. POI's must thoroughly study the operator's proposals. On the basis of 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 operator can adequately accomplish training within the training hours specified in the curriculum segment. These training hours usually include periods, during instruction, for reasonable breaks.

(2) Sequence of Training. The operator can determine the sequence of the actual training and may choose to put a training module in more than one curriculum segment; however, the operator should place that training module in the curriculum segment designated in this handbook. For example, FAR § 121.421 requires that an electrical galley equipment training module be placed in the aircraft ground training curriculum segment. At the operator's discretion, however, the electrical galley equipment training mod-

ule could also be covered in the aircraft general emergency training curriculum segment in conjunction with the firefighting training module.

D. Curriculum Segment Example. The following example illustrates a curriculum segment and one of many acceptable methods for presenting a module outline:

II. F/A Aircraft Ground Training Curriculum Training Segment	Title of Curriculum Segment
A. Training Objective:	Statement of Training Objectives
B. General Operational Subjects:	Title of Subject Area
1. Aircraft Familiarization 2. Aircraft Equipment and Furnishings 3. Aircraft Systems 4. Aircraft Exits 5. Crewmember Communication and Coordination 6. Routine Crewmember Duties and Procedures 7. Passenger Handling Responsibilities	Training modules within a Curriculum Segment Applicable to a Specific Aircraft in the General Subject Area
C. Elements within a Training Module	
1. Aircraft Familiarization (a) Aircraft Description (b) Flightdeck Configuration (c) Cabin Configuration (d) Galleys (e) Lavatories (f) Stowage Areas	

2015. GENERAL OPERATIONAL SUBJECTS TRAINING MODULES. Modules in general operational subjects training consist of instruction in the general description of the aircraft, aircraft equipment, furnishings, and systems; routine crewmember communication and coordination procedures; routine crewmember duties and procedures as applicable to specific aircraft during each phase of flight; and passenger handling responsibilities that are specific to the aircraft the crewmember is qualifying for in the operator's fleet.

A. Minimum Training Requirements. General operational subjects training must include training in at least the following:

- The authority of the pilot-in-command (PIC)
- Passenger handling, including the procedures to be followed in the case of deranged persons or other persons whose conduct might jeopardize safety
- A general description of the airplane, emphasizing physical characteristics that may have a bearing on ditching, evacuation, inflight emergency procedures, and other related duties
- The use of the public address (PA) system to communicate with passengers, and the means of communicating with other flight crewmembers, including emergency means in the case of attempted hijacking or other unusual situations

- The proper use of electrical galley equipment, the cabin environmental equipment (heat and ventilation), and the cabin electric circuit breakers

B. Additional Information. Training modules for general operational subjects may also include information on operational requirements that are specific to the aircraft in which the training is being conducted. This information may include F/A assigned duties and procedures, crewmember coordination, and crewmember communication responsibilities during each phase of flight.

C. Training Module Content. The following are examples of training modules for the general operational subject area. These examples of training modules encompass different types of operations that may not be applicable to an operator's specific type of operation. There are elements and events contained in these training modules that are not specified in the FAR but are intended to provide POI's with further examples of material that may be included in training modules. These examples do not indicate the sole acceptable method, sequence of instructional delivery, subject titles, or amount of detail.

(1) Aircraft Familiarization.

(a) Aircraft Characteristics and Description: Description of aircraft make, model, type, and series, including the following:

- Design
- Principal dimensions
- Interior configuration
- Powerplant
- Range
- Speed
- Altitude

(b) Flightdeck Configuration: Description and location of the following:

- Flight crewmember and observer stations
- Portable emergency equipment
- Stowage areas
- Operation of cockpit door including emergency opening

(c) Cabin Configuration: Description and location of the following:

- F/A station(s)
- Passenger seating zone and aisle
- Passenger seats
- Galley
- Lavatory
- Stowage areas
- Emergency exits
- Oxygen mask compartments
- Passenger service units
- Passenger convenience panels
- Passenger information signs
- Required placards
- Passenger-cargo configurations (combi aircraft)

(d) Galleys: Description, location, function, and operation of galley equipment, such as the following:

- Ovens
- Refrigeration units
- Stowage compartments and latching devices
- Carts and braking mechanisms and restraining devices
- Electrical control panels and circuit breakers
- Water system and water shutoff valves
- Oxygen mask compartments
- Lower lobe galleys including operation of escape exits and lifts

(e) Lavatories: Description and location of equipment, such as the following:

- Washbasins
- Stowage compartments and latching devices
- Oxygen mask compartments
- Passenger information signs
- Required placards
- Automatic fire extinguishers
- Smoke detectors
- Water shutoff valves
- Water heater switches and indicators
- Interior door locking mechanism and signs

- Exterior door locking and unlocking mechanisms

(f) Stowage Areas: Description, location, and function of stowage areas, such as the following:

- Overhead bins and racks
- Coat closets
- Stowage compartments
- Weight restrictions
- Restraint or latching requirements
- Required placards

(2) Aircraft Equipment and Furnishings.

(a) F/A Stations:

1. Procedures for preflight checks of an F/A jumpseat, such as the following:

- Automatic seat retraction
- Jumpseat headrest
- Restraint system integrity

2. Description of the function and operation of restraint system.

3. Securing restraint system when not in use.

(b) F/A Panels:

1. Identification of and function of controls, switches, and indicators on F/A panels.

2. Preflight and use of controls and switches.

(c) Passenger Seats: Description of passenger seats and surrounding area, such as the following:

- Seat belts
- Armrests, footrests, and seat recline controls
- Tray tables
- Passenger service units
- Passenger convenience panels on armrests (as applicable)
- Passenger information signs
- Placards
- Passenger entertainment and convenience systems

(d) Passenger Service Units and Convenience Panels: Description of function and use of the following:

- Controls on passenger service units, such as reading lights and reading light switches
- Gasper air outlets
- F/A call light indicator and F/A call light switch
- NO SMOKING and FASTEN SEAT BELT signs
- Emergency oxygen outlets

(e) Passenger Information Signs: Description of location, purpose, and chime indicator of the following passenger information signs:

- NO SMOKING signs
- FASTEN SEAT BELT signs
- LAVATORY OCCUPIED signs
- RETURN TO SEAT signs in the lavatory
- EXIT signs

(f) Aircraft Markings: Include description, location, and purpose of aircraft markings such as the following:

- Interior emergency exit markings indicating location of each passenger emergency exit
- Emergency exit operating handle markings indicating location of operating handle and instructions for opening exit
- Emergency equipment markings identifying equipment
- Emergency equipment compartment or container markings identifying contents

(g) Aircraft Placards: Description, location, and purpose of aircraft placards, such as the following:

- Placards on each forward bulkhead and passenger seat back stating FASTEN SEAT BELT WHILE SEATED
- Placards in each lavatory stating FEDERAL LAW PROVIDES FOR A PENALTY OF UP TO $2,000 FOR TAMPERING WITH THE SMOKE DETECTOR INSTALLED IN THIS LAVATORY

(h) Bassinets and Bayonet Tables: Description of, and use of, bassinets and bayonet tables including the following:

- Means of securing while in use
- Proper stowage when not in use
- Applicable restrictions

(3) Aircraft Systems.

(a) Air Conditioning and Pressurization System:

1. Description, location, function, and operation of temperature controls, such as the following:

- Gasper air outlets
- Cabin pressurization indicators

2. Location and function of decompression vents.

(b) Aircraft Communication Systems: Description, location, function, and operation of the following:

- Manual system controls
- Cabin intercommunication data systems

(c) Communications—Call System: Description, location, function, and operation of the call system, such as the following:

- Call light switches
- Chime and light indicators when call is initiated
- Routine and emergency call light identification
- Resetting procedures for call light indicators

(d) Communications—Interphone System: Description of interphone system, such as the following:

- Location of handset controls and indicators
- Function and operation of routine and emergency controls and indicators
- Interphone system inoperative procedures

(e) Communications—Passenger Address System: Description, function, and operation of passenger address system, including the following:

- Location of handset and microphone controls and indicators
- Passenger address system inoperative procedures

(f) Lighting and Electrical Systems:

1. Description and location of interior and exterior lighting.

2. Function and operation of cabin lighting systems including the following:

- Controls
- Switches
- Testing procedures

3. Description and location of circuit breakers, including the following:

- Means of access
- Switches
- Indicators
- Resetting procedures

(g) Oxygen—Flightcrew and Observer Oxygen System: Description and function of flightcrew and observer oxygen system, including the following:

- Location of oxygen regulators and quick-donning oxygen masks
- Operation of oxygen regulator switches and indicators
- Distinction between "on demand" and "under pressure" oxygen flow
- Proper use of oxygen masks

(h) Oxygen—Passenger Oxygen System: Including the following:

1. Description and location of each type of oxygen mask and compartment.

2. Location of extra masks.

3. Description and location of oxygen mask compartment door latching indicators.

4. Instruction on manual opening of each type of oxygen mask compartment.

5. Restrictions for repacking oxygen mask compartments.

6. Function of passenger oxygen system, including the following:

- Automatic and manual means of system activation
- Indicators of oxygen system activation

- Procedure for initiating oxygen flow to mask
- Procedure for properly donning oxygen mask and testing for oxygen flow
- Procedure for resetting oxygen system in the event oxygen system is not designed to shut off automatically
- Procedure for activating aircraft system for first aid oxygen

(i) Water System: Description of aircraft potable water system, such as the following:

- Location of quantity indicators
- Water supply preflight procedures
- Location and operation of individual or main water shutoff valves

(j) Entertainment and Convenience Systems:

1. Description of aircraft entertainment and convenience system(s).

2. Location and operation of controls and switches including system indicators.

3. Problem identification including the following:

- Probable causes
- Corrective action procedures

(4) Aircraft Exits.

(a) General Information: Description, location, and identification of each type of cabin and cockpit exit, including the following:

- Type and number
- Function
- Dimensions
- Basic components
- Controls

(b) Exits with Slides or Sliderafts—Preflight:

1. Identification and function of door opening controls and indicators.

2. Procedures to preflight door seals

3. Integrity and condition of the following:

- Girt bar and brackets
- Slide or sliderafts connections and pressure indicators
- Slide or sliderafts engaging and disengaging mechanisms
- Accessible tailcone emergency access handle (as applicable)
- Exit markings and placards
- Signs
- Lights
- Assist handles

(c) Exits with Slides or Sliderafts—Normal Operation:

1. Procedures for opening exit in normal mode, including the following:

- Disarming door either manually or automatically
- Verifying girt bar disengagement
- Assuming correct body position for door opening
- Operating door controls correctly
- Securing exit in open and locked position
- Securing safety strap (if applicable)

2. Procedures for closing exit in normal mode, including the following:

- Removing safety strap (if applicable)
- Releasing door latching mechanism
- Assuming correct body position for door closing
- Using door controls correctly
- Securing exit in closed and locked position

(d) Exits without Slides—Preflight:

1. Identification and function of door opening controls and indicators.

2. Procedures to preflight the following:

- Door seals
- Airstair system (as applicable)
- Exit markings and placards
- Signs
- Lights
- Assist handles

(e) Exits without Slides—Normal Operation:

1. Procedures for opening exit, including the following:

- Assuming correct body position for door opening
- Operating door controls correctly
- Securing exit in open and locked position
- Securing safety strap and using airstair system to lower stairs, as applicable

2. Procedures for closing exit, including the following:

- Removing safety strap and using airstair system to raise stairs (as applicable)
- Releasing door latching mechanism
- Assuming correct body position for door closing
- Using door controls correctly
- Securing exit in closed and locked position

(f) Window Exits—Preflight:

1. Identification and function of window opening controls and indicators.

2. Procedures to preflight the following:

- Window seals
- Markings
- Placards
- Signs
- Lights
- Tactile indicators for non-visual conditions

(5) Crewmember Communication and Coordination.

(a) Captain's Authority: Description of the captain's authority on aircraft in routine and emergency conditions, including the chain of command as applicable to specific aircraft.

(b) Routine Communication Signals and Procedures: Review of location, function, and operation of communication systems as applicable to specific aircraft, including specific procedures for cockpit and cabin chime and interphone signals for routine situations. The following are examples:

- F/A notification to be seated prior to movement on the surface
- F/A notification of critical phases of flight
- Flight crewmember notification when requesting access to cockpit

(c) Crewmember Briefing: Review the following:

- Importance of crew briefing and development of crewmember resource management concept (CRM)
- Description of crewmember responsibilities for crew briefing including any required paperwork
- Content of crew briefing as applicable to specific aircraft

(6) Routine Crewmember Duties and Procedures.

(a) Crewmember General Responsibilities:

- Crewmember communication and coordination while performing crewmember assignments, duties, and procedures as applicable to specific aircraft during each phase of flight
- Description of all operator policies and FAR pertinent to crewmember performance of assigned duties on specific aircraft

(b) Reporting Duties and Procedures for Specific Aircraft:

1. Identification of required crewmembers when specific aircraft is parked at the gate.

2. Description of preflight and in-flight duty assignments and responsibilities.

3. Description of passenger boarding procedures.

4. Description of carry-on baggage stowage procedures.

5. Assurance of exit seat program compliance.

6. Conduct of cockpit and cabin crew briefings.

7. Assurance of the possession of all required personal equipment, such as the following:

- F/A manuals
- Flashlights
- Cockpit keys (if applicable)

(c) Predeparture Duties and Procedures Prior to Passenger Boarding:

1. Description of preflight safety check assignments and procedures.

2. Review of preflight responsibilities as applicable to specific aircraft. The following are examples:

- Checking jump seat restraint system, retraction, and emergency oxygen source
- Locating and inspecting all assigned emergency equipment including switches and controls
- Locating and ensuring that safety information and exit seating cards are applicable to make, model, type, and series of aircraft
- Preparing demo equipment and safety briefing information videotape
- Ensuring that cockpit keys are secured per company policy

(d) Passenger Boarding Duties and Procedures: Ensure adherence to all regulatory and company requirements as applicable to specific aircraft. The following are examples:

- Ensuring that a minimum number of required F/A's are at the assigned boarding station
- Implementing security procedures
- Monitoring passenger boarding and seating
- Making required announcements
- Assessing passengers to identify possible helpers
- Identifying and handling any unruly passengers
- Screening carry-on baggage
- Screening exit seat occupants
- Ensuring that infant and child restraint devices are approved for use on aircraft and secured properly
- Conducting an individual briefing of any person who may need the assistance of another person to move expeditiously to an exit in the event of an emergency

(e) Prior-to-Movement-on-the-Surface Duties and Procedures:

1. Checking for stowaways.

2. Verifying the following:

- That exit seat and carry-on baggage requirements as applicable to specific aircraft are met
- That all stowage compartments are secured properly
- That no carry-on baggage, cargo, or trash is in unauthorized receptacles
- That galley and service equipment is stowed and secured
- That galley doors, curtains, and dividers are secured open
- That galleys and lavatories are unoccupied
- The proper operation of the doors and airstairs including latching and arming prior to movement on the surface

(f) Prior-to-Takeoff Duties and Procedures: Description of prior-to-takeoff duties and procedures as applicable to specific aircraft. The following are examples:

1. Taking demo positions.

2. Making required safety briefing announcement and demonstration or safety briefing videotape.

3. Individually briefing passengers in seats with restricted view of F/A demonstration or screen.

4. Making passenger and cabin safety inspection to verify the following:

- No smoking
- Seat belts fastened
- Infants held properly or secured in approved infant seat
- Seatbacks and tray tables in fully upright position
- All carry-on baggage, including infant restraint devices, properly secured

5. Coordinating with cockpit regarding the security of the cabin for takeoff.

(g) In-Flight Duties and Procedures: Description of performance of routine in-flight assign-

ments, duties, and procedures as applicable to specific aircraft. The following are examples:

- Following sterile cockpit procedures
- Stowing the restraint system upon leaving F/A seat
- Implementing appropriate procedures for the handling of any emergency or abnormal situations including turbulence
- Restraining each item of galley equipment and each serving cart when not in use
- Implementing safe lift and lower lobe galley procedures

(h) Prior-to-Landing Duties and Procedures: Description of duties and procedures as applicable to specific aircraft. The following are examples:

1. Reporting cabin discrepancies to cockpit.

2. Following sterile cockpit procedures except for safety-related communication.

3. Making passenger and cabin safety inspection to verify the following:

- No smoking
- Seat belts fastened
- Infants held properly or secured in approved infant restraint devices
- Seatbacks and tray tables in fully upright position
- All carry-on baggage including infant restraint devices and loose objects stowed and secured properly
- All stowage compartments secured properly
- No carry-on baggage, cargo, or trash in unauthorized receptacles

4. Stowing and securing galley and service equipment.

5. Securing galley doors, curtains, and dividers in open position, lifts in down position.

(i) Movement-on-the-Surface and Arrival Duties and Procedures: Description of movement-on-the-surface and arrival duties and responsibilities as applicable to specific aircraft. The following are examples:

- The use of the PA to inform passengers to remain seated with seat belt fastened until arrival at gate
- Disarming the girt bar manually or automatically after jetway or stairs are positioned at aircraft
- Verifying girt bar disengagement
- Opening doors and airstairs
- Verifying doors and airstairs opened properly and securely latched

(j) After Arrival Duties and Procedures:

1. Ensuring minimum number of required F/A's at assigned arrival station.

2. Reviewing deplaning responsibilities as applicable to specific aircraft. The following are examples:

- Implementing security procedures
- Ensuring that F/A's are uniformly distributed throughout cabin in accordance with the FAR and company policy
- Monitoring passenger deplaning to ensure adherence to all regulatory and company requirements
- Ensuring that all cabin electrical equipment is turned off
- Inspecting unique areas of the cabin and galley to ensure safety precautions specific to that aircraft

(k) Intermediate Stops:

- Determining minimum number of F/A's required to remain on board at intermediate stops when passengers remain on board the aircraft
- Ensuring that F/A's are positioned at designated stations
- Implementing procedures to ensure passenger safety during fueling and defueling including procedures for emergency evacuation while parked at gate or ramp

(7) Passenger-Handling Responsibilities.

(a) Crewmember General Responsibilities: Description of crewmember duties and procedures for the handling of passengers applicable to the specific type of aircraft and operation.

(b) Infants, Children, and Unaccompanied Minors: Specific procedures as applicable to specific aircraft. The following are examples:

- Designation of seating locations
- Designation of additional oxygen masks and infant and child life vest locations
- Designation of infant and child carrier and bassinet seat locations
- Description of reporting requirements

(c) Passengers Needing Special Assistance: Procedures as applicable to specific aircraft such as the following:

- Procedures for the handling of onboard wheelchairs and special aircraft accommodations, such as accessible lavatories and moveable armrests
- Procedures for the carriage of stretchers and incubators
- Method and procedures for the carriage of a passenger requiring oxygen for personal use
- Description of recommended alternate locations for administering medical assistance
- Description of escape paths and methods for the evacuation of passengers with physical limitations

(d) Passengers Needing Special Accommodation: Procedures as applicable to specific aircraft for the following:

- Armed passengers
- Escorts
- Prisoners
- Couriers
- VIP's
- Deportees
- Runaways
- Persons traveling without visas
- Other designated unescorted individuals

(e) Carry-On Stowage Requirements: Procedures as applicable for specific aircraft, such as the following:

- Location requirements for oversized items in the cabin
- Designated areas for the carriage of pets and pet containers
- Designated areas for the stowage of passenger assistance aids, such as wheelchairs, canes, and crutches

(f) Passenger Seating Requirements: Procedures as applicable to specific aircraft, such as the following:

- Location of exit seats
- Location of seats for accommodating passengers who are unable to sit erect for a medical reason
- Designated areas for passengers with trained assist animals

(g) Smoking and No Smoking Requirements: Procedures as applicable to specific aircraft, such as the location of no smoking areas and smoking areas, as applicable.

2017. AIRCRAFT-SPECIFIC EMERGENCY SUBJECTS TRAINING MODULES. Modules for aircraft-specific emergency training consist of instruction in the location, function, and operation of emergency equipment; crewmember emergency assignments and procedures, including crew coordination and communication; the handling of emergency or other unusual situations; and emergency drills that are specific to the aircraft the crewmember is qualifying for in the operator's fleet.

A. Definition of Aircraft-Specific Emergency Training Area. The aircraft-specific emergency equipment and the aircraft-specific emergency training drills should be taught under the Aircraft-Specific Emergency Training Subject area if not previously taught under the General Emergency Training Curriculum Segment. For example, if all aircraft in an operator's fleet are equipped with the same type of halon fire extinguisher, this fire extinguisher would be taught as "general" to all aircraft in the F/A General Emergency Training Curriculum Segment. If, however, the specific aircraft in the operator's fleet is equipped with various types of halon fire extinguishers, each fire extinguisher would be taught as "aircraft-specific" in the F/A Aircraft Ground Training Curriculum Segment.

B. Minimum Requirements. Aircraft-specific training must include training in at least the following, with respect to each airplane make, model, type, series, and configuration; each required crewmember; and each kind of operation conducted:

- Instruction in emergency assignments and procedures, including coordination among crewmembers
- Instruction in the location, function, and operation of emergency equipment
- Instruction in the handling of emergency situations
- Review of previous aircraft accidents and incidents
- Required emergency drills

(1) Aircraft-specific emergency training modules may also include any additional information pertinent to the aircraft equipment and furnishings F/A's need to be familiar with in order to perform assigned duties.

(2) Aircraft-specific emergency training modules may also include instruction on procedures for an emergency situation that is specific to the aircraft on which training is being conducted.

NOTE: F/A Initial and Transition Ground Training under FAR Part 135 lists the same training requirements specified under FAR Part 121.

C. Training Module Content. The following are examples of training modules for the aircraft-specific emergency training. These examples of training modules encompass different types of operations and may not be applicable to a specific operator's type of operation. It should be noted that there are elements and events contained in these training modules that are not specified in the FAR, but are intended to provide POI's with further examples of material that may be included in training modules. These are examples and are not intended to indicate the sole acceptable method, sequence of instructional delivery, subject titles, or amount of detail.

(1) Emergency Equipment. The emergency equipment modules should be accomplished only if they have not been accomplished previously under the General Emergency Training Curriculum Segment. Only the training modules that are unique to the aircraft and type of operation need to be accomplished. Detailed elements pertaining to each of the Emergency Equipment Training Modules are located in the General Emergency Training—Emergency Equipment Training in section 4 of this chapter.

(a) Aircraft Exits: Location and description of emergency operation of exit including emergency escape system and backup procedures.

(b) Exits with Slides or Sliderafts—Emergency Operation:

1. Procedures for arming exit in emergency mode including the following:

- Ensuring that door is fully closed and locked
- Checking to see that threshold is free of debris
- Arming door either manually or automatically
- Verifying girt bar engagement

2. Procedures for opening exit in emergency mode including the following:

- Assessing conditions prior to opening exit
- Assuming correct body protective position for door opening
- Operating door controls correctly
- Ensuring that door is in open and in locked position
- Using manual slide inflation system to accomplish or ensure slide or slideraft deployment and inflation
- Assessing condition of and stabilizing slide or slideraft
- Using slide as hand held escape device (if applicable)
- Operating exit under adverse conditions including impact of wind, weather, and fire on slide
- Passing expeditiously through exit
- Assessing and following a safe path away from exit

(c) Slides and Sliderafts in a Ditching:

- Identification of exits and slides or sliderafts usable in ditching
- Deactivation of unusable slides or sliderafts
- Deployment, inflation, and detachment of slides or sliderafts from aircraft
- Overwing evacuation procedures including slide or slideraft operation
- Movement of slides or sliderafts from door to door; use of door mounted slides as raft boarding platforms
- Use of door mounted slides as flotation devices; boarding techniques

- Detachment of mooring line from aircraft

(d) Exits without Slides—Emergency Operation: Procedures for opening exit including the following:

- Assessing conditions before opening
- Assuming correct body protective position for door opening, operating door controls correctly
- Securing exit in open and locked position
- Using emergency airstair system to lower stairs (as applicable)
- Operating exit under adverse conditions
- Passing expeditiously through exit
- Assessing and following a safe path away from exit

(e) Window Exits—Emergency Operation: Procedures for opening exit including the following:

- Assessing conditions prior to opening
- Using tactile indicators to locate window exit
- Assuming correct body protective position for window opening
- Operating window controls correctly
- Positioning window to preclude evacuation obstruction
- Using escape ropes
- Operating exit under adverse conditions
- Passing expeditiously through exit
- Assessing and following a safe path away from exit

(f) Exits with Tailcones—Emergency Operation:

1. Procedures for arming exit in emergency mode, if applicable.

2. Procedures for opening exit including the following:

- Assessing conditions prior to opening
- Removing emergency handle protective device (as applicable)
- Assuming correct body protective position for door opening
- Operating door controls and emergency handle correctly
- Ensuring that door is in an open and locked position or positioning hatch to preclude evacuation obstruction, if applicable
- Walking on catwalk
- Locating and using jettison handle to accomplish tailcone jettison or as backup procedure
- Using manual slide inflation system to ensure slide deployment and inflation
- Assessing condition of and stabilizing slide
- Operating exit under adverse conditions including impact of wind, weather, and fire on slide
- Assuming correct body protective position on assist platform
- Passing expeditiously through exit
- Assessing and following a safe path away from exit

(g) Cockpit Exits—Emergency Operation: Procedures for opening exit including the following:

- Assessing conditions prior to opening
- Assuming correct body position for exit opening
- Operating exit controls correctly
- Using escape ropes and inertial escape reels
- Exit operation under adverse conditions
- Passing expeditiously through exit
- Assessing and following a safe path away from exit

(h) Ground Evacuation and Ditching Equipment: Description of the operation, function, preflight, removal (as applicable), and operation of the evacuation equipment including slide or sliderafts; aircraft emergency landing attitudes.

(i) First Aid Equipment: Review of the location and number; description of the function, preflight, removal, and operation of the first aid equipment, emergency medical kit, and first aid kit.

(j) Portable Oxygen Systems (Oxygen Bottles, Chemical Oxygen Generators, Protective Breathing Equipment (PBE)):

- Review of the location and number

- Description of the function
- Preflight, removal, and operation of the oxygen systems

(k) Firefighting Equipment: Review of the location and number; description of the function, preflight, removal (as applicable), and operation of the firefighting equipment.

(l) Communications—Emergency Notification Systems: Description, location, function, and operation of evacuation alerting devices, smoke or fire detection warning systems, decompression alerting devices including controls and indicators; system inoperative procedures; system resetting procedures.

(m) Emergency Lighting Systems: Description, location, function, and operation of emergency lighting including the following:

- Exit signs and arrows
- Floor proximity escape path
- Cabin lighting
- Exterior lighting
- Switches and testing procedures

(n) Additional Emergency Equipment: As applicable, the description of the location, function, preflight, removal, and operation of any additional unique emergency equipment, such as cargo barrier nets, smoke barriers, firefighting extension wands.

(2) Emergency Assignments and Procedures. The following Emergency Assignments and Procedures Training Module should be accomplished in conjunction with the Emergency Situation Training Modules and Elements outlined in the General Emergency Training Curriculum Segment in section 4 of this chapter. Only the training modules that are unique to the aircraft and type of operation need to be accomplished. For detailed elements pertaining to each of the Emergency Assignments and Procedures Training Modules, refer to the General Emergency Training Curriculum Segment—Emergency Situation Training Modules in section 4 of this chapter.

(a) General: Types of emergencies specific to aircraft including the following:

- Standardization of procedures among crewmembers
- Crew coordination and communication
- Utilization and implementation of emergency equipment and emergency assignments that are appropriate to the specific aircraft

(b) Emergency Communication Signals and Procedures:

1. Review of location, function, and operation of emergency communication systems on specific aircraft.

2. Description of specific cockpit including cabin chime and inter phone signals for emergency situations including the following:

- Flight crewmember notification of emergency situation
- Flight crewmember notification of attempted hijacking
- Flight crewmember notification that an evacuation is being initiated
- Flight crewmember signal to evacuate or not to evacuate

(c) Rapid Decompression: Crewmembers' emergency duties, procedures, and commands for rapid decompression.

(d) Insidious Decompression and Cracked Window and Pressure Seal Leaks: Crewmembers' emergency duties, procedures, and commands for insidious decompression and cracked window and pressure seal leaks.

(e) Fires: Crewmembers' emergency duties, procedures, and commands for the extinguishing of cabin fires.

(f) Ditching: Crewmembers' specific emergency assignments, procedures, and commands for an unanticipated water landing (prior to impact and after impact) and anticipated ditching (prior to impact and after impact).

(g) Ground Evacuation: Crewmembers' specific emergency assignments, procedures, and commands for an unanticipated ground evacuation (prior to impact and after impact) and anticipated ground evacuation (prior to impact and after impact).

(h) Unwarranted Evacuation: Crewmembers' duties, procedures, and commands for an unwarranted evacuation; for example, a passenger-initiated evacuation due to torching on a B-727.

(i) Illness or Injury: Crewmembers' duties, procedures, and commands for the handling of passenger illness or injury.

(j) Abnormal Situations Involving Passengers or Crewmembers: Crewmembers' duties, procedures, and commands for abnormal situations involving the following:

- Passenger abuse of F/A's
- Passengers who appear to be under the influence of intoxicating substances
- Passengers who may jeopardize aircraft or passenger safety

(k) Hijacking: Crewmembers' duties, procedures, and commands for the handling of a hijacking (this may be part of the Security Training Curriculum).

(l) Bomb Threat: Crewmembers' duties, procedures, and commands for the handling of a bomb threat (this may be part of the Security Training Curriculum).

(m) Turbulence: Crewmembers' duties, procedures, and commands for severe turbulence (anticipated or unanticipated) and mild to moderate turbulence (anticipated or unanticipated).

(n) Other Unusual Situations: Description of crewmembers' duties, procedures, and commands for other unusual situations.

(o) Previous Aircraft Accidents and Incidents: Description of previous aircraft accidents and incidents.

(3) Aircraft-Specific Emergency Drills. The following Aircraft-Specific Emergency Drills Training Modules should be accomplished only if they have not been accomplished previously under the General Emergency Training Curriculum Segment. Aircraft-Specific Emergency Drills Training Modules should be accomplished in conjunction with the Emergency Drills Training outlined in the General Emergency Training Curriculum Segment. For detailed elements pertaining to each of the Emergency Equipment Training Modules, refer to the General Emergency Training Curriculum Segment—Emergency Drills Training Modules in section 4 of this chapter.

(a) Emergency Exit Drill: During an emergency exit drill, each student must operate every type of emergency exit in the normal and emergency modes, including the actions and forces required for deployment of the emergency evacuation slides.

(b) Hand Fire Extinguisher Drill: During a hand fire extinguisher drill, each student must operate every type of installed hand fire extinguisher.

(c) Emergency Oxygen System Drill: During an emergency oxygen system drill, each student must operate every type of emergency oxygen system, including PBE.

(d) Flotation Device Drill: During a flotation device drill, each student must put on, use, and inflate (as applicable) one type of individual flotation device.

(e) Ditching Drill (if applicable): During a ditching drill, each student must perform the "prior to impact" and "after impact" procedures for a ditching, as appropriate to the operator's specific type of operation.

(f) Liferaft Removal and Inflation Drill (if applicable): During a liferaft removal and inflation drill, each student must observe the removal of a liferaft from the aircraft or training device, as well as the inflation of a liferaft.

(g) Slideraft Pack Transfer Drill (if applicable): During a slideraft transfer drill, each student must observe the transfer of each type of slideraft pack from an unusable door to a usable door.

(h) Slide or Slideraft Deployment, Inflation, and Detachment Drill (if applicable): During a slide or slideraft deployment, inflation, and detachment drill, students must observe the deployment, inflation, and detachment of the slide or slideraft pack from the aircraft or training device.

(i) Emergency Evacuation Slide Drill (if applicable): During an emergency evacuation slide drill, students must observe the deployment and inflation of an evacuation slide, including participants egressing from the cabin or approved training device via the evacuation slide.

2019. ADAPTATION OF FLIGHT ATTENDANT AIRCRAFT GROUND TRAINING CURRICULUM SEGMENT TO THE VARIOUS CATEGORIES OF TRAINING. The F/A Aircraft Ground Training curriculum segment is required for the following categories of training: initial new hire, transition, recurrent and requalification. Differences training for all variations of a particular type airplane may be included in the F/A Aircraft Ground Training curriculum segment for initial, transition, and recurrent training for the airplane. Differences training is required when the Administrator finds that the variant make, model, or series airplane varies so much that training on the differences is necessary. An example of this could be when the cabin doors on different airplanes operate in the same manner but are located in significantly different places on the airplane. The appropriate differences training would emphasize this variance in location. When differences training is required, the programmed hours should be specified.

2021. CURRICULUM SEGMENT COMPLETION REQUIREMENTS. Completion of the F/A Aircraft Ground Training Curriculum Segment must be certified by an instructor or supervisor indicating

that the trainee has successfully completed the course. This certification is usually based on the satisfactory evaluation of a trainee's performance. With some training methods, such as CBI, the certification may be based on the trainee's progress checks, which are administered during the course.

2023. EVALUATION OF TRAINING HOURS.

A. FAR Part 121. FAR § 121.421 specifies 8 programmed hours of instruction for initial aircraft ground training for Group I airplanes, including reciprocating-powered airplanes and turbopropeller-powered airplanes. FAR § 121.421 specifies 16 programmed hours of instruction for initial aircraft ground training for Group II airplanes. When approving the F/A Aircraft Ground Training Curriculum Segment, the POI should consider the following:

(1) The complexity of the type of operation to be conducted and the complexity of the aircraft to be used should be reviewed.

(2) Training for a complex type of operation may require that the published training hours be exceeded, while there may be an acceptable reduction in training hours for a less complex type of operation.

(3) Training modules with corresponding elements and events that have been satisfactorily completed in previous aircraft training may not need to be repeated.

B. FAR Part 135. FAR Part 135 does not specify a minimum number of programmed hours for F/A aircraft ground training. Aircraft ground training for F/A's in a FAR Part 135 operation, however, requires training in the same scope and depth of aircraft-specific information as required for F/A's in a FAR Part 121 operation. For example, FAR Part 135 F/A's must be trained on the specific aircraft equipment, systems, and duties, both routine and emergency. Therefore, the training hours for FAR Part 135 F/A aircraft ground training are equivalent to FAR Part 121 training hours. When approving the F/A Aircraft Ground Training Curriculum Segment, the POI should consider the following:

(1) The complexity of the type of operation to be conducted and the complexity of the aircraft to be used should be reviewed.

(2) Training for a complex type of operation may require that the minimum training hours be exceeded, while there may be an acceptable reduction in training hours for a less complex type of operation.

(3) Training modules with corresponding elements and events that have been satisfactorily completed in previous aircraft training may not need to be repeated.

2025. EVALUATION OF FLIGHT ATTENDANT AIRCRAFT GROUND TRAINING CURRICULUM SEGMENT OUTLINE FOR INITIAL APPROVAL. When evaluating an Aircraft Ground Training Curriculum Segment Outline for initial approval, POI's should determine whether the training modules contain the information required for F/A's to perform all routine and emergency duties and procedures for a specific aircraft without supervision. POI's should use the job aid in section 2 of this chapter as a guideline when evaluating the proposed curriculum segment outline.

2026.–2074. RESERVED.

[PAGES 3-1120 THROUGH 3-2054 RESERVED]

CHAPTER 14. FLIGHT ATTENDANT TRAINING AND QUALIFICATION PROGRAMS

SECTION 2. FLIGHT ATTENDANT TRAINING APPROVAL PROCESS

1935. GENERAL. Flight attendant (F/A) training curriculum approvals follow the same five-phase general process for approval or acceptance described in volume 1, chapter 4, section 6, of this handbook. Information and guidance regarding each phase of the approval process is located in volume 3, chapter 2, section 2. Inspectors should refer to figure 3.14.2.1., "Job Aid for F/A Training Conducted Under FAR Part 121," as a guideline during this approval process.

1937. REVISIONS TO TRAINING CURRICULUMS. Volume 3, chapter 2, section 2, paragraph 341 of this handbook addresses procedures for proposed revisions to training curriculums, including any proposal to reduce the approved number of training hours. Curriculum hours and subject matter should not be reduced to the extent that a curriculum cannot meet its goals and objectives; in all cases, the curriculum should ensure that the crewmember stays adequately trained. Only basic indoctrination, initial, and recurrent training under Federal Aviation Regulations (FAR) Part 121 have specified numbers of programmed hours. For all other curriculums, only the subject matter requirements or objectives are stated in the regulations. Reduction of hours is permitted under FAR Part 121 operations for basic indoctrination, initial ground, and recurrent training; however, the specified subjects should still be covered. When an established operator requests a reduction in the number of programmed hours, the operator must demonstrate to the Administrator that, for the applicable student's level of experience, the reduction will not be detrimental in achieving the requisite level of competency. Reductions in recurrent training classroom hours from the 12 hours set forth in the regulations should be discouraged when there are several different types and models of aircraft in a fleet, except upon showing of exceptional, time-saving, and effective training techniques such as separate mock-ups for each aircraft type and model. If the number of programmed hours of a training curriculum is reduced, the certificate holder will be provided with a letter giving the basis for the approval. The same conditions upon which approval for the reduction were based should continue. However, any change or addition of aircraft type to the operator's fleet of aircraft should necessitate review of the reduction of the number of programmed hours. Transition, differences, and upgrade ground training curriculums are derived from the applicable initial ground training curriculum. Therefore, upon approval of the Administrator, an established operator may omit particular subjects and have fewer hours than in the initial training curriculum. For this to be acceptable, the operator must show that the material is adequately addressed in another manner (such as recurrent training), that portions are not pertinent to the operation, or that the material can be sufficiently covered in less than the programmed hours approved in the initial training curriculum. When increases in recurrent or initial training are mandated by the Federal Aviation Administration (FAA), as happened when security training was required, these increases would not be compensated for by decreases in the hours of existing training in other areas.

1938.–1944. RESERVED.

[PAGES 3-1050 THROUGH 3-1058 RESERVED]

FIGURE 3.14.2.1.
JOB AID FOR F/A TRAINING CONDUCTED UNDER FAR PART 121

F/A Training Program Job Aid for FAR Part 121 Operations

A. This document was prepared to assist the principal operations inspector (POI) in the approval of F/A training conducted under FAR Part 121 operations. The suggested way to use this job aid is as follows:

(1) The POI should have this document copied.

(2) The POI's recommendations should be added to the copy.

(3) The POI should give this document to the appropriate representative of the carrier, and ask that person to record how each item on the job aid is covered.

(4) The POI can then determine which items are satisfactory and which items need changes.

(5) When the POI is satisfied that a given item is acceptable, the POI should put any appropriate remarks next to that item, then that item should be initialed and given a date of approval.

(6) If a letter of reduction is issued regarding any training program, the letter must be kept with the training program.

B. The POI should also ensure the proficiency of instructors, the applicability of training materials, and the quality of learning.

C. The operator's assigned Principal Security Inspector should be coordinated with during the review of the operator's security and hazardous materials procedures that are contained in the operator's training programs.

D. The operator should provide the POI with the approved Drug Testing Program, which must have been approved by the FAA Regional Drug Abatement Program Manager.

E. If the POI wants to be informed about, or be able to answer questions regarding, the operator's approved program concerning Department of Transportation (DOT) Part 382, Nondiscrimination of Handicapped Individuals in Air Travel, the POI should request a copy of the program from the operator. This program is approved by the Deputy Assistant Counsel for Regulation and Enforcement for the DOT.

FIGURE 3.14.2.1.—Continued
JOB AID FOR F/A TRAINING CONDUCTED UNDER FAR PART 121

	Initial Approval	Final Approval
121.401 Training Program: General		
121.403 Training Program: Curriculum		
121.415 Crewmember Training Requirements		
121.417 Crewmember Emergency Training (for each aircraft type, model, and configuration)		
(a) Assignments		
(b) Procedures		
(c) Emergency Drills		
(d) Overwater Qualifications		
(e) Above 25,000 Feet		
121.418 Differences Training: Crewmembers		
121.421 F/A's: Initial and Transition Ground Training		
121.427 Recurrent Training		
121.434 Operating Experience		

Remarks:

FIGURE 3.14.2.1.—*Continued*
JOB AID FOR F/A TRAINING CONDUCTED UNDER FAR PART 121

	Initial Approval	Final Approval
121.401 Training Program: General (a) (1) Handling of dangerous or magnetized material, if part of assigned duties		
(2) Adequate facilities and qualified instructors		
(3) Training material for each airplane type, and particular variation current and adequate (including training devices)		
(b) Provisions to ensure and record that training and competence checks are given during the required calendar month		
(c) (1) Each responsible person shall certify as to the proficiency and knowledge of the crewmember		
(2) Certification contained in crewmember's records		

Remarks:

FIGURE 3.14.2.1.—Continued
JOB AID FOR F/A TRAINING CONDUCTED UNDER FAR PART 121

	Initial Approval	Final Approval
The following paragraphs were adapted from the FAR, and only those applicable to F/A's were included. 121.403 Training Program: Curriculum (a) Written training program for each type of airplane is available and current. (This page should be copied for each type of airplane.)		
(b) Each curriculum must include the following: (1) A list of principal ground training subjects, including emergency training subjects, as provided.		
(2) A list of all training devices mockups, systems trainers, or other training aids that the certificate holder will use.		
(3) Not applicable		
(4) Not applicable		
(5) The programmed hours of training that will be applied to each phase of training.		
(6) A copy of each statement issued by the Administrator under FAR 121.405(d) for reduction of programmed hours of training.		

Remarks:

FIGURE 3.14.2.1.—Continued
JOB AID FOR F/A TRAINING CONDUCTED UNDER FAR PART 121

	Initial Approval	Final Approval
121.415 Crewmember Training Requirements (a) Each training program must provide the following ground training as appropriate to the particular assignment of the crewmember . . . :		
(1) Basic indoctrination ground training for newly hired crewmembers . . . including 40 programmed hours of instruction, unless reduced under FAR 121.405, . . . in at least the following:		
(i) Duties and responsibilities of crewmembers, . . . as applicable;		
(ii) Appropriate provisions of the FAR;		
(iii) Not applicable		
(iv) Appropriate portions of the certificate holder's operating manual.		
(2) Initial and transition ground training specified in FAR 121.421;		
(3) Emergency training as specified in FAR 121.417 . . .		
(b) Not applicable		
(c) Recurrent ground training as provided in FAR 121.427		
(d) Differences training as specified in FAR 121.418 . . .		
(e) Not applicable		
(f) Not applicable		
(g) Each program must ensure the following for each crewmember:		
(1) that each crewmember remains adequately trained and currently proficient with respect to each airplane . . .		
(2) that each crewmember is adequately trained to qualify in new equipment, facilities, procedures, and techniques including modifications to airplanes.		

	Number of Hours
Number of programmed hours (If hours are reduced, give reason in Remarks area below.)	

Remarks:

FIGURE 3.14.2.1.—Continued
JOB AID FOR F/A TRAINING CONDUCTED UNDER FAR PART 121

	Initial Approval	Final Approval
121.415 Crewmember Training Requirements—Continued Crewmember Basic Indoctrination Training programs must include, but are not limited to, the following: admission to flight deck		
authority of pilot-in-command (PIC)		
chain of command		
passenger seatbelt discipline		
exit seat requirements and procedures		
smoking requirements and procedures		
reporting of equipment malfunctions		
carriage of armed passengers		
sterile cockpit procedures		
crewmember communication and coordination procedures		
need for tray tables and seatbacks to be in full upright position for movement on the surface, takeoff, and landing		
travel of disabled (including stowage of canes, assistive devices, wheelchairs, et cetera)		
procedures with unusual passengers (such as those who are pregnant or require a stretcher)		
requirements and procedures for use and carriage of either infant or child restraint systems		
carry-on baggage requirements, including properly securing before entry door is closed for movement on the surface, takeoff, and landing		

Remarks:

FIGURE 3.14.2.1.—Continued
JOB AID FOR F/A TRAINING CONDUCTED UNDER FAR PART 121

	Initial Approval	Final Approval
121.415 Crewmember Training Requirements—Continued carriage of cargo in passenger compartment recognition of hazardous materials		
storage and handling of hazardous materials, if they are carried in the cabin		
stowage of crewmember baggage		
proper stowage of galley equipment for movement on the surface, takeoff, landing, and in flight (including galley and ticket carts)		
securing of restraint systems when not in use		
passenger briefings and demonstrations in the following areas: pre-takeoff		
post-takeoff		
pre-landing		
prohibition against the use or carriage of narcotics		
procedures for the use of electronic devices		
distribution of F/A's		
need for required and non-required F/A's to be seated during movement on the surface, takeoff, and landing		
number of F/A's or substitutes at stops		
F/A procedures during refueling		

Remarks:

FIGURE 3.14.2.1.—Continued
JOB AID FOR F/A TRAINING CONDUCTED UNDER FAR PART 121

	Initial Approval	Final Approval
121.417 Crewmembers Emergency Training Requirements (given during initial, recurrent, differences, and transition training) (a) Each training program must provide the emergency training set forth in this section with respect to each airplane type, model, and configuration, and each required crewmember.		
(b) Emergency training must provide the following: (1) Instruction in emergency assignments and procedures, including coordination among crewmembers.		
(2) Individual instruction in the location, function, and operation of emergency equipment, including the following items: (NOTE: The instructor should ensure that each F/A knows the function of, and can locate and operate, each piece of equipment.)		
ditching equipment		
evacuation equipment (which includes arming the door or putting the girt bar in place during normal operations)		
F/A restraint systems		
first aid equipment and its proper use		
first aid oxygen		
oxygen for medical use by passengers (if applicable), including special training on chemically generated oxygen when used by the operator		
medical kit and its use		

Remarks:

FIGURE 3.14.2.1.—Continued
JOB AID FOR F/A TRAINING CONDUCTED UNDER FAR PART 121

	Initial Approval	Final Approval
121.417 Crewmember Emergency Training—Continued		
portable fire extinguishers with emphasis on type of fire extinguishers appropriate to the class of fire		
protective breathing equipment (PBE)		
flashlights		
crash ax		
cockpit key		
emergency lights		
megaphones		
public address (PA) system		
interphone system		
emergency exits in the emergency mode with the evacuation slide or raft attached (if applicable)		
training emphasis on opening exits in adverse conditions (wind, gear failure, water, et cetera)		
(3) Instruction in the handling of emergency situations including the following:		
rapid decompression situations following the FAA-recommended procedure:		
recognize decompression		
grab nearest oxygen mask		
sit down or hold on to something well secured		
wait for word from the flight deck before moving around		

Remarks:

FIGURE 3.14.2.1.—Continued
JOB AID FOR F/A TRAINING CONDUCTED UNDER FAR PART 121

	Initial Approval	Final Approval
121.417 Crewmember Emergency Training—Continued		
Instruction in handling fire in flight or on the surface including the following:		
cabin fire prevention		
lavatory fire procedures		
light ballast fire procedures		
smoke control procedures		
fire control when volatile fuel is involved		
Instruction emphasizing use of electrical equipment and related circuit breakers found in the cabin area including the following:		
galley		
service centers		
galley lifts (when applicable)		
lavatories		
movie projectors and screens		
Instruction in the following evacuation situations:		
Forewarned (anticipated land and ditching):		
crewmember coordination		
cabin preparation		
galley securing (including galley and other carts)		
baggage stowage		
passenger preparation		
instructions given to passengers		
directions to assume brace-for-impact positions commands given to passengers		
initiation of passenger evacuation		
passenger flow redirection		
passenger care following evacuation		

Remarks:

FIGURE 3.14.2.1.—Continued
JOB AID FOR F/A TRAINING CONDUCTED UNDER FAR PART 121

	Initial Approval	Final Approval
Unforewarned (unanticipated land and water):		
F/A readiness		
crewmember coordination		
condition assessment		
commands given to passengers		
passenger redirection		
passenger care following evacuation		
Unwarranted evacuation (unneeded crewmember and passenger initiated)		
crewmember coordination		
condition assessment		
stopping the evacuation		
passenger care following evacuation		
Situations when persons needing assistance, and their attendants might need help to leave the airplane during emergency situations.		
Post-accident survival training		
Illness or injury		
Other abnormal situations involving crewmembers or passengers such as the following:		
procedures for when passengers abuse an F/A		
procedures for passengers under the influence of intoxicating substances		
procedures for other problem passengers who might jeopardize safety		
procedures for when a crewmember is incapacitated		
procedures for turbulent air, including the following:		
crewmember coordination		
maintaining seatbelt discipline by making periodic announcements		
Hijacking and other unusual situations		
(4) A review and discussion of previous accidents and incidents		

Remarks:

FIGURE 3.14.2.1.—Continued
JOB AID FOR F/A TRAINING CONDUCTED UNDER FAR PART 121

	Initial Approval	Final Approval
121.417 Crewmember Emergency Training—Continued (c) Each crewmember must accomplish at least the following emergency drills and must actually operate the following emergency equipment during initial training and once each 24 calendar months during recurrent training for every type of aircraft in which they serve. (An alternate recurrent training may be accomplished by approved pictorial presentation or demonstration.)		
(1) One-time emergency drill during initial training. Each crewmember must perform the following: (i) At least one approved fire fighting drill using at least one type of installed hand fire extinguisher, appropriate for type of fire, using the type of installed PBE. (May be a simulated fire if another fire fighting drill was performed with an actual fire.)		
(ii) An emergency evacuation drill with each person egressing the airplane or approved training device using at least one type of installed evacuation slide.		

	Normal Mode Int. 24mth	Emerg. Mode Int. 24mth
(2) Additional emergency drill requirements to be accomplished during initial training and once each 24 months during recurrent training. Each crewmember must perform the emergency drill and operate the equipment:		
(A) Emergency Exits: List each kind (type) exit and slide		
Int. = Initial 24mth = 24 months		

Remarks:

FIGURE 3.14.2.1.—Continued
JOB AID FOR F/A TRAINING CONDUCTED UNDER FAR PART 121

	Initial Training	Every 24 Months
121.417 Crewmember Emergency Training—Continued (B) Fire extinguisher (Actually operate each kind.) water		
halon		
CO_2		
dry chemical		
other		
Actually put out fire with at least one kind of fire extinguisher. If actual fire put out during PBE training, then may use simulated fire.		
(C) Oxygen Equipment (Actually operate each type (kind) of emergency oxygen system to include PBE. Include instruction on manual deployment of oxygen masks. List kinds of systems, which may differ between aircraft models as well as types.)		

	Donning Int. 24mth	Use Int. 24mth	Inflation Int. 24mth
(D) Flotation devices:			
Don and use each kind of individual flotation device. List each kind (type) of life jacket.			
List each kind (type) of flotation device			
(E) Ditching, as appropriate			
(1) Use of life lines			
(2) Board passengers and crewmembers into raft, as appropriate			

Remarks:

FIGURE 3.14.2.1.—Continued
JOB AID FOR F/A TRAINING CONDUCTED UNDER FAR PART 121

	Initial Training	Every 24 Months
121.417 Crewmember Emergency Training—Continued (d) . . . (e) Operations above 25,000 feet. Crewmembers who serve in operations above 25,000 feet must receive instruction in the following: respiration		
hypoxia		
duration of consciousness without supplemental oxygen at an altitude		
gas expansion		
gas bubble formation		
physical phenomena associated with decompression		
incidents of decompression		
Emergency Evacuation Drills: (each kind)		
Drills should be conducted so each F/A actually operates every piece of emergency equipment and individually demonstrates the ability to perform the following procedures: Unforewarned (unanticipated) evacuation crewmembers coordination		
cockpit/cabin notification		
commands given to passengers		
use of F/A restraint system		
assumption of protective brace positions		
actions that might be necessary during evacuation with emergency lights		
conditions assessment		
door opening		
slide activation		
passenger care after evacuation		

Remarks:

FIGURE 3.14.2.1.—Continued
JOB AID FOR F/A TRAINING CONDUCTED UNDER FAR PART 121

	Initial Training	Every 24 Months
121.417 Crewmember Emergency Training—Continued		
Forewarned (anticipated) evacuation		
crew coordination		
cabin preparation		
passenger preparation		
Unwarranted (unneeded) evacuation crewmember coordination		
stopping the evacuation		
caring for passengers who may have gotten outside of the airplane		
Ditching, if applicable, including but not limited to the following, as appropriate:		
cockpit preparation and procedures		
crew coordination		
passenger briefing		
cabin preparation		
donning and inflation of life preservers		
use of life-lines		
boarding of passengers and crew into a raft or a slide/raft		
removal from airplane (or training device) of each kind of life raft *		
transfer of each kind of slide/raft pack from one door to another *		
deployment, inflation, and detachment from the airplane (or training device) of each kind of slide/raft pack *		
* NOTE: crewmember does not have to operate per FAR 121.417(c)(2), may observe.		

Remarks:

FIGURE 3.14.2.1.—Continued
JOB AID FOR F/A TRAINING CONDUCTED UNDER FAR PART 121

	Covered
121.418 Differences Training: Crewmembers (a) Differences training for crewmembers (including F/A's) must consist of at least the following as applicable to their assigned duties and responsibilities. NOTE: Differences training for all variations of a particular type of airplane may be included in initial, transition, or recurrent training. (1) Instruction in each appropriate subject or part, as required in initial ground training and determined by the Administrator. List parts or subjects as follows: Doors	
Window exits	
Evacuation slides	
Emergency oxygen systems	
Emergency equipment location	
(2) Not applicable	
(3) Number of programmed hours of ground or flight training as determined by the Administrator.	

Remarks:

FIGURE 3.14.2.1.—Continued
JOB AID FOR F/A TRAINING CONDUCTED UNDER FAR PART 121

	Initial Training	Transition Training
121.421 F/A's: Initial and Transition Ground Training (a) Initial and transition ground training for F/A's must include instruction in at least the following areas: authority of the PIC		
passenger handling including the following:		
aircraft type, model, and series		
(Space is provided below for one aircraft type. For carriers having more than one type, this portion of the form should be copied so that each aircraft type has a separate form.)		
A general description of an airplane that emphasizes characteristics and dominant parts on this aircraft which might have a bearing on the following: evacuations		
ditchings		
inflight emergency procedures		
other related duties		
use of PA system		
means of communicating with other crewmembers		
means of communicating with other crewmembers in unusual situations including attempted hijacking		
proper use of electrical galley equipment and controls for cabin heat and ventilation, including the setting of lights for takeoff and landing		

Remarks:

FIGURE 3.14.2.1.—Continued
JOB AID FOR F/A TRAINING CONDUCTED UNDER FAR PART 121

	Initial Training	Transition Training
121.421 F/A's: Initial and Transition Ground Training—Continued (b) Competence check to determine a crewmember's ability to perform assigned duties and responsibilities. Competence check should cover each type, model, and series of aircraft, each piece of safety equipment, and each emergency procedure applicable to that crewmember. It should consist of hands-on checks, observed by the instructor, with each crewmember individually operating each piece of equipment, and taking written exams given in the classroom. Occasionally, on a limited basis, one-on-one oral exams may be used.		
Basic Indoctrination Training must consist of 40 programmed hours. As per FAR 121.405, hours may be reduced. If hours are reduced, the reason should be given in the Remarks area below.		
• Plus 8 hours if serving on reciprocating powered aircraft		
• Plus 8 hours if serving on turbopropeller powered aircraft		
• Plus 16 hours if serving on Group II aircraft		

Remarks:

FIGURE 3.14.2.1.—Continued
JOB AID FOR F/A TRAINING CONDUCTED UNDER FAR PART 121

	Covered
121.427 Recurrent Training (including differences training, if applicable) (a) Recurrent training must ensure that each F/A is adequately trained and currently proficient with respect to each type of airplane.	
(b) Recurrent ground training programs for flight attendants must include at least the following: (1) A quiz or other review to determine the state of the crewmember's knowledge. Some form of written test is usually preferred. It is desirable to have this quiz or other review in the classroom.	
minimum satisfactory passing criteria	
crewmember's status when criteria not met	
(2) Subjects required for initial and emergency training (see appropriate parts of this document)	
(3) A competence check that should cover each type, model, and series of aircraft, each piece of safety equipment, and each emergency procedure. It should consist of hands-on checks, observed by the instructor, with each crewmember individually operating each piece of equipment, and taking written exams given in the classroom. Occasionally, on a limited basis, one-on-one oral exams may be used.	

	Total Number of Hours	Number of Class-room Hours	Number of Hours for Takehome Exercises
(c) The number of programmed hours required as follows: 12 hours jets			
5 hours turbo props			
4 hours propeller-driven aircraft			
NOTE: For example, F/A's qualified on an operator's B-727 and CV-580 would be required to have 16 hours of recurrent training. NOTE: If the number of hours is reduced in accordance with FAR 121.405, give reasons in the Remarks area below.			

Remarks:

FIGURE 3.14.2.1.—Continued
JOB AID FOR F/A TRAINING CONDUCTED UNDER FAR PART 121

	Program provides this for each F/A
121.434 Operating Experience (a) Operating Experience must be done in accordance with the following requirements:	
F/A's must have satisfactorily completed ground school.	
Operating experience must be acquired during operations conducted under FAR Part 121 (including proving or ferry flights).	
(b) F/A's must perform all F/A-assigned duties under the supervision of a supervisor.	
Flight time must be 5 hours.	
Flight time may be 2.5 hours if 2.5 hours have already been completed in approved cabin simulator.	

Remarks:

CHAPTER 15. MANUALS, PROCEDURES, AND CHECKLISTS

SECTION 1. BACKGROUND AND DEFINITIONS

2075. INTRODUCTION. This chapter contains direction and guidance to be used by principal operations inspectors (POI) and inspectors for processing, reviewing, and accepting or approving manuals, procedures, and checklists.

A. Section 1 contains general background information and definitions of the terms used in this chapter.

B. Section 2 contains guidance to inspectors and POI's for approving or accepting an operator's manuals, procedures, and checklists.

C. Section 3 contains guidance for the review and evaluation of general operations manuals.

D. Section 4 contains guidance for the review and evaluation of flight manuals.

E. Section 5 contains guidance for the review and evaluation of aircraft checklists.

F. Section 6 contains guidance for the review and evaluation of flight attendant (F/A) manuals.

2077. OVERVIEW OF MANUAL REQUIREMENTS. The Federal Aviation Regulations (FAR) require operators to prepare and keep current various manuals and checklists for the direction and guidance of flight and ground personnel conducting air transportation operations.

A. Flight Manual. FAR § 121.141 or FAR § 135.81(c) (as applicable), and FAR § 91.31(b) require that a Federal Aviation Administration (FAA)-approved flight manual be carried aboard each aircraft for the guidance of crewmembers when conducting flight operations. A flight manual is any manual approved by the FAA that an operator uses to comply with this requirement. A flight manual may be an approved Airplane Flight Manual (AFM), an approved Rotorcraft Flight Manual (RFM), or an approved Company Flight Manual (CFM) (see paragraph 2079 for definitions). If an operator carries a CFM aboard the aircraft, that operator is not required to carry an AFM in addition to the CFM.

B. General Manual. FAR § 121.133 and FAR § 135.21 require that each operator prepare and keep current a manual providing guidance for all categories of flight and ground personnel conducting air transportation operations. This requirement does not apply to FAR Part 135 single pilot operators and those operators granted a deviation from this requirement by paragraph A5 of the operations specifications (OpSpecs). For purposes of this handbook, the manual the operator prepares in compliance with FAR § 121.133 or FAR § 135.21 is termed a "general manual." The operator's general manual must include the duties and responsibilities of each category of employee. The manual must also include adequate policy, direction, and guidance for the safe and efficient performance of the duties assigned to each category of employee. The FAR only require an operator to produce a single manual. In practice, however, a system of manuals is usually necessary, even for relatively simple operations. Operators have wide latitude in structuring their manuals.

2079. DEFINITIONS. The following terms are defined according to their use in this handbook:

A. Manual: A collection of the information, policies, procedures, and guidance prepared by an operator to instruct company employees in the performance of their assigned duties.

B. General Operations Manual (GOM): That segment of the general manual that applies to flight operational activities as opposed to airworthiness activities. The GOM is one of two major segments of an operator's general manual.

C. General Maintenance Manual (GMM): That segment of an operator's general manual system that pertains to the airworthiness of aircraft. The GMM is one of two major segments of an operator's general manual.

D. User Manual: A segment of a GOM or a GMM that provides instruction, policies, procedures, and guidance to a specific category of employee. Examples of user manuals that are commonly used in the air transportation industry include the following:

- Flight operations policy manuals (FOPM)
- Airport analysis or data manuals
- Security manuals
- Flight attendant or cabin service manuals
- Flight dispatch manuals
- Station operations manuals
- Route and airport manuals
- Hazardous material handling manuals

NOTE: The user manual titles previously listed are only examples of common titles currently in use in industry. Inspectors should not interpret this as a list of required titles. Operators may choose to divide the GOM in any convenient way and may select different user manual titles.

E. Airplane Flight Manual (AFM): An approved airplane flight manual is prepared by the manufacturer and approved by the FAA Aircraft Certification Office (ACO) under the provisions of FAR § 21.5.

F. Rotorcraft Flight Manual (RFM): An approved rotorcraft flight manual is prepared by the manufacturer and approved by the FAA ACO under the provisions of FAR § 21.5.

G. Company Flight Manual (CFM): An approved aircraft flight manual that is developed by, or for, a specific operator for a specific aircraft type and that is approved by the POI, in accordance with the provisions of FAR § 121.141(b) or FAR § 135.81(c).

H. Policy: A written requirement established by an operator's management that is expected to be complied with by appropriate employee personnel. A policy may be within a procedure or stated separately. A written requirement such as "No flight may depart on a cross-country flight without a spare case of oil" is an example of a policy.

I. Recommendation: A preferred technique or action described by the operator that employees are expected to follow whenever practical. A recommendation is not a policy requirement.

J. Procedure: A logical progression of actions and/or decisions in a fixed sequence that is prescribed by an operator to achieve a specified objective. In short, a procedure is step-by-step guidance on how to do something.

K. Abbreviated Procedure: A list of sequential procedural steps without an amplified description or amplified set of instructions.

L. Amplified Procedure: A description of sequential procedural steps with detailed explanatory descriptions and/or instructions accompanying each step.

M. Technique: A method of accomplishing a procedural step or maneuver.

N. Checklist: A formal list used to identify, schedule, compare, or verify a group of elements or actions. Although a checklist may be published in a manual, it is usually intended to be used by itself, so that reference to a manual is made unnecessary. Checklists are usually formatted and presented on paper; however, they may be formatted on electronic or mechanical devices, or presented in an audio format. A checklist may or may not represent an abbreviated procedure. The items listed on a checklist may be unrelated and may not represent a procedure, such as most "normal" checklists. Abnormal and emergency checklists, however, do represent procedures.

NOTE: Checklists and procedures are often confused. Operators have sometimes titled procedures "expanded checklists" or titled checklists "abbreviated procedures." A procedure is a set of actions or decisions prescribed to achieve a specified objective. A checklist is a physical aid used to overcome the limitations of human memory.

O. "Normal": When normal is used to describe a procedure or checklist, it refers to a routine operation (without malfunctions).

P. "Emergency": When emergency is used to describe a procedure or checklist, it refers to a nonroutine operation in which certain procedures or actions must be taken to protect the crew and the passengers, or the aircraft, from a serious hazard or potential hazard.

Q. "Nonnormal" or "Abnormal": When nonnormal or abnormal is used to describe a procedure or checklist, it refers to a nonroutine operation in which certain procedures or actions must be taken to maintain an acceptable level of systems integrity or airworthiness.

R. "Alternate": When alternate is used to describe a procedure or checklist, it refers to a procedure that may be employed instead of another procedure. Alternate procedures may either be normal, nonnormal, or abnormal procedures.

S. "Supplemental": When supplemental is used to describe a procedure or checklist, it refers to a procedure that may be employed in addition to a normal, nonnormal, or abnormal procedure. Supplemental procedures may either be normal or nonnormal procedures.

T. Phase Checklist: A checklist used to establish and/or verify aircraft configuration during a specific phase of flight. An example of a phase checklist is an "after-takeoff checklist."

U. Normal Checklist: A checklist comprised of all of the phase checklists used sequentially in routine flight operations.

V. "Approved": When approved is used to describe a document, manual, or checklist, it means that a regulation requires FAA approval and that the FAA has evaluated and specifically approved the document, manual, or checklist.

W. "Accepted": Accepted is used to describe a document, manual, or checklist that does not have, or is not required to have, FAA approval. Only a portion of an operator's manuals are required to have FAA approval. The remaining portions are "accepted" by the FAA. Operators are required to submit the entire general manual to the FAA for review. If the FAA concludes that an accepted section of the general manual is not in compliance, the FAA must formally notify the operator of the deficiency. Upon notification, the operator must take action to resolve the deficiency.

X. "Document": A written description of a system, a method, or a procedure; a written statement of authorizations, conditions, or limitations; or a file of information. A document serves as an official record of understanding and agreement between the FAA and the operator as to the means the operator will use to comply with regulatory requirements. An approved document is not a manual. Relevant information from a document, however, may be extracted and published in user manuals. For example, the OpSpecs are not a manual but an approved document from which information is extracted.

Y. Pilot-Flying (P-F): The pilot who is controlling the path of the aircraft at any given time, whether or not the aircraft is in flight or on the ground.

Z. Pilot-Not-Flying (P-N-F): The pilot who is not controlling the path of the aircraft.

AA. Immediate Action: An action that must be taken in response to a nonroutine event so quickly that reference to a checklist is not practical because of a potential loss of aircraft control, incapacitation of a crewmember, damage to or loss of an aircraft component or system—which would make continued safe flight improbable.

BB. High Workload Environment: Any environment in which multiple demands on the flightcrew necessitate the prioritizing of work functions. For example, instrument flight rules (IFR) operations below 10,000 feet during arrival or departure from a terminal area (including taxiing) are considered to be high workload environments.

CC. Systems Management: The management of those systems that sustain the mechanical functions of the aircraft as opposed to the management of the aircraft's thrust, flightpath, or aerodynamic configuration.

DD. Warning: An instruction about a hazard that if ignored could result in injury, loss of aircraft control, or loss of life.

EE. Caution: An instruction concerning a hazard that if ignored could result in damage to an aircraft component or system that would make continued safe flight improbable.

NOTE: That information or instruction of such significance that special emphasis is required.

2081. DISTRIBUTION AND AVAILABILITY OF MANUALS. Each operator is required to maintain a complete manual (or set of manuals) at its principal base of operations and to furnish a complete manual (or set of manuals) to the FAA certificate-holding district office (CHDO). In addition, each operator must make available or furnish applicable parts of the manual (user manuals) to flight and ground operations personnel who conduct or support flight operations. The manual may be in conventional paper format or in another form that is convenient for the user. Each employee to whom the manual or a user manual is furnished must keep it current. Each employee must have access to appropriate manuals or parts of manuals when performing assigned duties. FAR § 121.139 requires that each FAR Part 121 supplemental air carrier and commercial operator carry appropriate parts of the manual on each aircraft when away from the principal base of operations—for use by ground and flight personnel.

2083. REVIEW OF MANUALS. Manuals must be reviewed by POI's and other qualified inspectors to ensure that they contain adequate content and are in compliance with applicable regulations, safe operating practices, and the operator's OpSpecs. While POI's are encouraged to provide guidance and advice to operators in the preparation of their manuals, the development and production of an acceptable manual is solely the responsibility of the operator.

A. Initial Review. Before the initial certification of an applicant, a comprehensive review of the applicant's flight manuals and GOM must be conducted by the POI and other qualified inspectors. During the initial review of the GOM, POI's must ensure that the operator has addressed the applicable topics

discussed in sections 3 and 4 of this chapter. In addition, those items in the operator's final compliance statement that require the operator to develop a policy statement, system, method, or procedure must be addressed. If user manuals are furnished, those topics that apply to the specific user must be addressed. Each topic must be presented with enough detail to ensure that the user can properly carry out the portion of the policy or procedure for which the user is responsible.

B. Review of Changes to Manuals. The POI should review each revision or proposed revision to a manual. Inspectors should not limit this review to a strict consideration of the change itself but should also consider the impact of the change on the operator's overall manual system, training program, and type of operation. Changes in the operator's OpSpecs should be accompanied by a review of applicable sections of the operator's manual.

C. En Route and Ramp Surveillance. Inspectors conducting en route and ramp inspections should review the flight manual and those portions of the GOM carried by the flightcrew for completeness and currency. When a flight is long enough to make it practical, inspectors should review these manuals more in depth, particularly those sections that are operationally relevant to the flight in progress.

D. Periodic Review of Manuals. The continual review of an operator's manuals is necessary because both the aviation environment and the operations conducted by the operator are constantly changing. Each POI is responsible for developing a surveillance plan for the operator's manual system. At least one portion of the operator's general manual should be reviewed annually, and the entire general manual should be reviewed over a period of 1 to 3 years (depending on the complexity of the operation). This periodic review should be planned as a distinct event so that every portion of the manual is systematically reviewed at some time over a 1- to 3-year cycle. This periodic review should be coordinated between principal airworthiness inspectors and other inspectors to ensure an appropriate exchange of information and to avoid redundant reviews.

2085. FORMAT AND STYLE OF MANUALS. Both FAR Parts 121 and 135 require that each page of a manual must include the most recent revision date. In general, manuals and checklists should be easy to use and understand, and in a format that can be easily revised. When evaluating manuals and checklists for ease of use and understanding, inspectors should consider the following guidance concerning format and style:

A. Form. All or part of a manual may be prepared and maintained in conventional paper format (book form) or in other forms, such as microfilm or computer-based storage with electronic image.

B. Preface Page. The first page of a user manual should be a preface page containing a brief statement about the manual's purpose and intended user. The preface page should also contain a statement that emphasizes that the procedures and policies in the user manual are expected to be used by company personnel.

C. Revision Control. Each manual should be easy to revise. Also, each manual should contain a revision control page or section from which the user can readily determine whether the manual is current. This page or section should preferably follow the preface page, but it can be organized in any logical manner. The control date of the most recent revision of each individual page must appear on each page. Complex operators should establish a bulletin system to bring temporary information or changes that should not be delayed by a formal revision process, to the attention of the user. The bulletin system should have a means of control that includes giving bulletins a limited life and systematically incorporating them into appropriate manuals in a timely manner. Users should be able to easily determine whether they possess all current bulletins.

D. Table of Contents. Each manual should have a table of contents containing lists of major topics with their respective page numbers.

E. References. Manuals must include references to specific regulations when appropriate. A reference to regulations or other manual material is appropriate when it is necessary to clarify the intent of the text or when it is useful to the user for looking up specific subject matter. References should not be made to advisory circulars and to preambles of FAR, as these sources are advisory and not binding in nature. Operators should use caution when adapting the text of advisory documents into their manuals. Advisory text may not translate into a directive context.

F. Definitions. Significant terms used in manuals should be defined. Any acronym or abbreviation not in common use should also be defined.

G. Elements of Style. Manuals and checklists should be composed in the style of general technical writing. This style should be clear, concise, and easy to understand. When evaluating manuals, inspectors should be knowledgeable of the following suggestions for accomplishing clarity in technical writing:

(1) Whenever possible, short, common words should be used. Examples of this include the following: using the words "keep" or "hold" instead of "maintain"; using the word "start" instead of "establish"; and using the word "stop" instead of "terminate."

(2) When a word has more than one meaning, the most common meaning should be used. For example, the word "observe" should be used to mean "see and take notice of" rather than "obey and comply."

(3) Operators should standardize terminology whenever practical. For example, since the terms "throttles" and "thrust levers" refer to the same item, the operator should choose one term and use it consistently throughout the manual. Once a particular term has been used in a specific sense it should not be used again in another sense.

(4) Terms that command actions should be clearly defined, such as "checked," "set," and "as required." Since auxiliary verbs such as "may" and "should" are ambiguous and can create room for doubt, they should not be used when a definite action is commanded. Instead, verbs such as "shall" and "must" are preferable to use when an action is commanded because they are more definite.

(5) All "instructions" should be given in the imperative mood and the active voice. For example, "Hold the speed between V_{ref} and V_{ref} plus 10 knots" is preferable to "The speed needs to be held between V_{ref} and V_{ref} plus 10 knots."

(6) To provide appropriate degrees of emphasis on specific points in the text, "cautions," "warnings," and "notes" should be in the operator's manuals and checklists.

(7) Any instruction, particularly a warning or a caution, must begin with a simple directive in the imperative mood that informs the reader precisely what must be done. To avoid obscuring the directive in the background information, the directive must be stated first and then followed with an explanation. An example of how a directive can be obscured in background information is as follows: "Warning—To avoid the hazard of striking ground handling personnel with the free end of a swinging tow bar, do not place feet on rudder pedals until the captain takes the salute from the ground handler. The hydraulic nosewheel steering can sling the towbar with hazardous force." In contrast the following is an example of the preferred method of placing the directive first: "Warning—Do not place feet on rudder pedals until the captain takes the salute from the ground handler. The hydraulic nosewheel steering can sling a towbar with sufficient force to cause serious injury to ground handling personnel."

(8) Descriptions in the manual should not be overloaded, but should be presented simply and sequentially. An example of an overloaded description is as follows: "A CSD per engine drives the AC generator at a constant speed of 8,000 RPM regardless of the speed of the engine or the load on the generator." The following is an example of a clearer, more concise description: "A CSD is mounted between each engine and generator. The CSD holds the generator speed at a constant 8,000 RPM."

(9) Long sentences should be avoided in the manual. The following example consists of subject matter put into a long sentence, which makes it difficult to understand: "During gear retraction, the door-operating bar located on the landing gear leg contacts and turns the latch, withdrawing the roller from the slot as a second roller entraps the door-operating bar." The following example consists of the same subject matter used in the previous example; however, when it is broken down into shorter sentences, it is easier to understand: "During landing gear retraction, the door-operating bar on the landing gear leg is pressed against the door latch. The latch turns, thus freeing the door roller. The roller moves out of the slot. A second roller then traps and holds the door-operating bar."

2087. ADEQUACY OF PROCEDURES. Specific guidance for the evaluation of flight manual procedures is in section 4 of this chapter. The following general guidance, however, is provided for inspectors to use when evaluating procedures in any manual, including flight manuals:

A. Objective. The objective of a procedure must be stated clearly unless it is so commonly understood that a statement of the objective is not necessary.

B. Logical Sequence. Procedures are to flow in a logical step-by-step sequence. The most effective procedures are usually simple and each contain only the information necessary for accomplishing that procedure. Preferably, procedures should be described in a sequential step-by-step format rather than a narrative format.

C. General Considerations.

(1) A procedure must be an acceptable method for accomplishing an intended objective.

(2) The individual responsible for each step of a procedure must be clearly identified.

(3) The acceptable standards of performance for a procedure are to be stated if those standards are not commonly understood or clearly obvious.

(4) Since a variety of personnel with differing degrees of expertise are involved in procedures, adequate information concerning the accomplishment of a procedure must be provided for the least experienced individual. A procedure may be described very briefly and concisely when the user is capable of achieving the objective without extensive direction or detail. When the user has limited training or experience, however, a procedure must be described in enough detail for the user to correctly accomplish it. When the user has limited access to other sources of information and guidance while performing a procedure, enough detail should be provided to make the user independent of other sources of information.

(5) When a form, checklist, or tool is necessary to accomplish a procedure, the location of that item must be indicated in the procedure.

(6) Enough time should be available under normal circumstances for the user to accomplish a procedure. If sufficient time is not available to the user for accomplishing a procedure, either the procedure itself or the user's duties must be revised.

2088.–2098. RESERVED.

[PAGES 3-2061 THROUGH 3-2068 RESERVED]

CHAPTER 15. MANUALS, PROCEDURES, AND CHECKLISTS

SECTION 2. APPROVAL AND ACCEPTANCE OF MANUALS AND CHECKLISTS

2099. GENERAL. This section contains direction and guidance for principal operations inspectors (POI) when approving or accepting an operator's manuals and checklists. This process is based on the general process for approval or acceptance described in volume 1, chapter 4, section 6, of this handbook.

A. The Approval Process. The approval process for a Federal Aviation Regulations (FAR) Part 121 operator's checklist normally consists of phases one, two, three, and five of the general process. It may be necessary, however, for a POI to require that phase four (the demonstration phase) be included in the approval process.

B. The Acceptance Process. The acceptance process for a manual, manual section, or a FAR Part 135 operator's checklist normally consists of phases one, two, and three of the general process. The operator must submit current copies of required manuals to the POI, and in the case of FAR Part 135 operators, the operator must also submit aircraft checklists for Federal Aviation Administration (FAA) review. An operator's entire manual system must be reviewed during the document compliance phase of initial certification (see volume 2, chapter 2, section 3 of this handbook). Once an operator is certified, the operator may revise, distribute, and use accepted material even though the POI has not completed a review of it. If, after a thorough review, the POI determines that portions of the manuals or checklists are unacceptable, the operator must revise the unacceptable portions.

> **NOTE: Each phase of the general process for approval or acceptance is discussed as if it is separate and distinct; however, at times the phases may overlap.**

C. Evaluation of Manuals for FAA Acceptance or Approval. An operator may develop and publish in its manual any policy, method, procedure, or checklist that the operator finds necessary for the type of operations conducted. These policies, methods, procedures, and checklists, however, must comply with the FAR and be consistent with safe operating practices. POI's should encourage operators to be innovative and progressive in developing such policies, methods, procedures, and checklists. The POI's role in the review process is to provide an independent and objective evaluation of the operator's manual material. The POI must ensure that the operator's material complies with the FAR, is consistent with safe operating practices, and is based on sound rationale or demonstrated effectiveness.

D. Discrepancies. When a POI finds a discrepancy in an operator's existing manual material, the POI shall take action to have that discrepancy resolved. Usually such discrepancies can be resolved through informal discussions. When an informal discussion cannot resolve the discrepancy, however, the POI is required to formally withdraw FAA approval or acceptance from the operator (see paragraph 2111 of this section for guidance on the formal actions that may be taken).

2101. PHASE ONE: ESTABLISHING A FRAMEWORK FOR REVIEW. The first phase of the approval or acceptance process begins with communication between the FAA and the operator (either a current certificate holder or an applicant for a certificate). There are three occasions when approval or acceptance of manuals and checklists is required, as follows:

- When an applicant applies for a certificate
- When an existing operator determines if a change is necessary
- When, as the result of an investigation or normal surveillance, the POI determines if a manual, a manual section, or a checklist is inadequate or deficient

A. Determining Basic Requirements Applicable to the Operator. The primary task of the POI during phase one is to determine the basic requirements that the operator must meet to obtain acceptance or approval of a manual or checklist. The POI must communicate these requirements to the operator. To do this, the POI should review the appropriate sections of this handbook (particularly figures 2.1.1.1. through 2.1.1.3. in volume 2, chapter 1, section 1) and any advisory circulars (AC), air carrier operating

bulletins (ACOB), exemptions the operator may hold or is applying for, operation specifications (OpSpecs), and any deviations applicable to subjects the operator must address in its manual or checklist. Both the POI and the operator must clearly understand the topics and level of detail the operator is required to have in the material to be submitted during phase two of the process. During phase one, the POI should make the following determinations and communicate them to the operator:

- Whether the submission will involve approval or acceptance
- Whether there is a need for validation tests or other demonstrations
- Whether there is a need for supplementary documentation, analysis, or other data to support the submission

B. Methods for Manual or Checklist Organization. During phase one, the POI should inform the operator that there are various methods that can be used to organize and format those manuals, manual sections, and checklists requiring FAA approval/acceptance. POI's may inform their operators of the four possible methods that follow:

(1) Limited Content. An operator may choose to limit the content of the manual solely to approved material. When this method is used, the entire manual must be accepted and the operator may not revise the manual without additional review by the POI. While this method facilitates FAA review and acceptance, the manual may be difficult to use because the intended user may have to frequently switch back and forth between the approved checklists and other manuals containing accepted material. When the operator chooses this method, POI's must ensure that a header or footer is on each page indicating that the material is FAA-approved.

(2) Grouping Material. An operator may choose to group the FAA-approved material in specified sections of the manual and place accepted material in the remaining sections. With this method, the POI must ensure that a header or footer is on each page of the approved sections indicating that the material on that page is FAA-approved. The operator may submit the approved and accepted sections to the POI as separate packages.

(3) Interspersed Material. An operator may choose to intersperse FAA-approved material and accepted material throughout the manual. When an operator chooses this method, the POI must ensure that the operator has clearly identified approved material each time it appears in the manual. This method of organization allows for efficient manual use, but makes the operator's publication process and the approval process difficult.

(4) Approval Document. The operator may choose to place material in an approval document solely for the purpose of obtaining FAA approval of that material. An approval document is a document and therefore may not be used as a manual. After the document has been approved, the operator must develop user manuals that incorporate the approved information from the document along with detailed guidance and supplementary information. When this method is used, the user manuals are treated as accepted material and do not have to be individually approved. The POI must, however, review the user manuals to ensure that the information in them is consistent with the approval document. When using this method, the operator may revise the information in user manuals without prior FAA approval, provided the revision is consistent with, and does not conflict with, the information in the approval document. If the operator or the POI finds it necessary for the approval document to be revised, the operator must submit the proposed revision for review and approval. A revision to an approval document must be approved before the operator can incorporate the changed information into the user manuals. When an operator uses this method for submitting manual or checklist material for FAA approval, POI's must ensure that the operator has stated on the first page of the user manuals that the manual contains FAA-approved material. The manuals or checklists provided to the user, however, do not have to be specifically identified as being FAA-approved ones.

C. Submission of Material. During phase one, the POI should advise the operator on how to submit the documents, manuals, checklists, and subsequent revisions for approval or acceptance.

(1) FAA Approval Submission. For material that requires FAA approval, the POI should advise the operator to submit the following:

- Two copies of the document, manual, manual section, checklist, or revision to be approved; or
- One copy of the document, manual, manual section, checklist, or revision, and two copies of the page control sheets for the material (The page control sheets must show an appropriate revision number or original page number for each page and the effective date of each page.)
- A copy of any supporting documentation or analysis

(2) FAA Acceptance Submission. For material that is to be evaluated for acceptance by the FAA, the POI should advise the operator to submit the following:

- A copy of the manual, manual section, checklist, or revision to be reviewed
- A copy of the page control sheets for the material to be reviewed, when appropriate

D. Coordination of Submitted Documents. POI's should encourage operators to coordinate drafts of manuals and checklists and revisions before making a formal submission. Mutual agreement on major points should be reached between the operator and the POI before the material is put in final form. Operators should be advised by the POI's not to publish or distribute material requiring FAA approval until after they have received written notification that the material has been approved. An operator who prepares and distributes such material before receiving approval may have to make costly changes. The POI should encourage the operator to establish methods that streamline and simplify the process for both the operator and the POI.

2103. PHASE TWO: PRELIMINARY REVIEW. Phase two consists of the POI or a qualified inspector conducting a preliminary review (as opposed to a detailed analysis) of the operator's submission. This preliminary review is intended to ensure that the operator's submission is clear and contains all required documentation. The phase two review should be conducted promptly after receipt of the operator's submission. If, after preliminary review, the submission appears to be complete and of acceptable quality, or if the deficiencies are immediately brought to the operator's attention and can be quickly resolved, the POI may begin the phase three in-depth review (see paragraph 2105 of this section). If the submission is incomplete or obviously unapprovable or unacceptable, the process is terminated and the POI must immediately return the submission (preferably within 5 working days) with an explanation of the deficiencies. POI's should return the submission to the operator promptly so that the operator will not erroneously assume that the POI is continuing the process to the next phase.

2105. PHASE THREE: IN-DEPTH REVIEW. Phase three is a detailed analysis of the operator's submission. During this phase, a qualified inspector must review the operator's submission in detail to determine that the submission is complete and technically correct. The time to complete phase three depends on the scope and complexity of the submission. During the phase two preliminary review, the POI should determine whether the review can be completed within 10 working days. If any part of the submission requires FAA approval, and the POI determines that it will take longer than 10 working days to complete the review and approval process, the POI shall give the operator an estimate of the time it should take to complete the process.

A. The phase three review and analysis should confirm that the operator's submission conforms to, or is consistent with, the following:

- The FAR
- Criteria and guidance in this handbook
- The operator's OpSpecs
- Criteria and guidance in AC's
- Applicable aircraft flight manuals, manufacturer's operating bulletins, and airworthiness directives
- Safe operating procedures
- The operator's cockpit resource management policies
- Flight standardization board (FSB) and Flight Operations Evaluations Board (FOEB) training recommendations

NOTE: The direction and guidance in this chapter for reviewing procedures and checklists have been developed after consultation with knowledgeable and experienced personnel in the air transportation industry, aircraft manufacturers, and the FAA. The information presented is considered to be the best guidance currently available on the topic. POI's should realize, however, that circumstances vary widely. The best set of procedures for one circumstance may not work well in another circumstance. Two recommendations may be in conflict. In such cases, the appropriate resolution must be achieved through compromise. For example, it may be more important for an operator's checklist and procedures design policies to be internally consistent than for an individual procedure to be designed in a specific way.

B. The POI should thoroughly consider the operator's experience and history when evaluating procedures and checklists. When an operator has a history of successful operations, the POI should normally approve submissions consistent with the operator's existing procedures. When an operator has an incident or accident attributable to crew error, the POI must thoroughly examine the basic assumptions and policies in the design of the operator's checklists and operating procedures.

C. Even when thorough and effective design policies are used in the development of checklists and procedures, unanticipated results or effects may be encountered when the checklists and procedures are put to use. Therefore, procedures and checklists must be validated through operational tests.

2107. PHASE FOUR: VALIDATION TESTS. Operators should be encouraged by POI's to conduct validation tests of operating procedures and checklists during the development process. These validation tests should be conducted before the operator submits the proposed procedures and checklists for FAA review and approval. Whenever possible, the POI or a qualified inspector should observe these tests. Under certain circumstances, a validation test may have to be conducted after the phase three in-depth review. In other circumstances, especially for minor types of revisions or simple procedures or checklists, validation tests may not be warranted or appropriate. Before approving operating procedures and checklists, POI's should consider the following guidance concerning validation tests.

A. Aircraft operating procedures and checklists should be tested in realistic real-time scenarios, with a full crew complement.

B. Validation tests of normal procedures may be conducted in a flight simulator, in a flight training device, on training flights, or in conjunction with proving tests.

C. Validation tests of nonnormal, abnormal, and emergency procedures or checklists should be conducted in a simulator or training device. Tests of nonnormal and emergency procedures and checklists may be conducted in an aircraft; however, the operator must ensure that the test can be conducted safely. Testing of nonnormal and emergency procedures and checklists shall not be conducted during revenue service.

D. Operators may submit evidence that a qualified party (such as the manufacturer or another operator) has already conducted a validation test of a procedure or checklist. When such evidence is available, the POI should not require a validation test unless the operator's circumstances are significantly different from those in which the original tests were conducted.

E. Changes in the wording of a procedure may not actually change the procedure. In such cases, validation tests are not necessary.

F. POI's shall require that operators validate the safety and effectiveness of any addition, deletion, or change of sequence in the steps of a nonnormal or emergency checklist, through validation testing.

G. For those operators who intend to convert immediate action items to or from challenge-do-verify items on an emergency checklist, POI's shall require that they test the modified procedure to ensure that it is safe, effective, and has no adverse effects. POI's shall consult with the appropriate Aircraft Evaluation Group (AEG) before approving such changes.

H. The addition or deletion of individual items to a normal phase checklist does not usually need to be validated by a test. If the POI is of the opinion that the change significantly alters crewmember assignments or workload distribution, the POI shall require a validation test.

2109. PHASE FIVE: GRANTING FAA APPROVAL. Phase five consists of the POI's granting FAA approval to manuals, manual sections, and checklists. During this phase the POI must formally notify the operator of the approval and also complete a specific record of the approval. For manuals, manual sections, and FAR Part 135 aircraft operating checklists, which are not required to have FAA approval, written notification of acceptance is not required and shall not be given (see paragraph 2099 of this section).

A. Notification of Approval. When the POI decides to approve a document, manual, manual section, or checklist, the following procedures apply:

(1) For a document, manual, or checklist that contains page control sheets, the POI shall annotate both copies of the page control sheets with the phrase "FAA-Approved." Under the words "FAA-Approved," POI's shall enter the effective date of approval and sign both copies. The operator may preprint the words "FAA-Approved" and blank lines for the date and signature on the page control sheets, or the POI may use a stamp to add the approval annotation on each sheet.

(2) For manuals, manual sections, or checklists that do not contain page control sheets, the approval annotation must be placed by the POI on each page of the material. In this case the approval annotation must be made on two copies of the material. The annotation shall be the same as discussed in previous paragraph 2109A(1). This procedure should be used only for very short manuals, manual sections, or checklists (usually fewer than five pages) or when the use of page control sheets is not practical or serves little purpose.

(3) When page control sheets are used, the POI shall return one copy of the annotated page control sheets to the operator. In the remaining cases, one copy of the approved material must be returned to the operator with a notification letter that states that

the material is approved. This letter should also contain a statement advising the operator to maintain for its records the signed page control sheets or the material with the approval annotation. The POI shall retain the second copy of the signed page control sheets or the annotated material in the district office files.

B. Notification of Disapproval. The coordination, revision, and editing activities that take place throughout all phases of the process should eventually result in approved products. Under certain circumstances, however, it may be appropriate for the POI to terminate the process. For example, the operator may not take any action on the material for 30 days. To terminate the approval process, the POI shall return the entire submission to the operator with a letter stating that the FAA is unable to grant approval, along with the reasons why it cannot be granted.

C. District Office Records. The POI shall maintain a record of approval for each operator-submitted document, manual, manual section, and checklist. Records of approval to revisions of this material must also be maintained. The records should consist of page control sheets (or approved material if page control sheets are not used), notification letters, and any other related correspondence. While superseded portions of documents, manuals, or checklists do not have to be retained, POI's may retain this type of material if they determine that it is appropriate. The POI should include with the material in the operator's file a brief memorandum containing the reasons for retaining the material.

2111. NOTIFICATION OF DEFICIENCIES. When any portion of approved material that is currently in use is found to be deficient, the POI shall notify the operator and request prompt action to resolve the deficiency. Deficiencies can usually be resolved through an informal process; however, when this cannot be done, the POI must formally notify the operator by letter that the deficiency must be corrected.

A. Deficiency Involves FAA-Approved Material. If the deficiency involves FAA-approved material, the letter must contain a clear statement that FAA approval of the material will be withdrawn as of a specific date if corrective action is not taken. The letter should also contain a statement that the material does require FAA approval and that after the specified date, any operations without that approval will be in violation of the FAR.

B. Deficiency Involves Operator-Developed Material. If the deficiency involves operator-developed material that is accepted by the FAA, the letter should clearly indicate the material that is deficient and the reasons why it is deficient. If, after such notification, the operator still fails to take appropriate corrective action, the POI should attempt to negotiate a reasonable solution. When these attempts fail, the POI may, with Regional Flight Standards Division (RFSD) approval, amend the operator's OpSpecs to withdraw the authorization for conducting the operations affected by the deficiency.

2113. EMERGENCY REVISIONS. For safety reasons, an operator may sometimes find it necessary to immediately revise FAA-approved material before there is an opportunity to coordinate the revision with the POI. In such cases, the operator should take action as necessary to make the revision effective (such as alert bulletins and dispatch messages). For example, an operator may become aware of a deficiency after business hours, on a weekend, or on a holiday. In such cases, the operator should take immediate action. When emergency revisions to FAA-approved material are made, the operator shall notify the POI of the revision at the earliest practical opportunity (preferably the first working day after the action). Since there is a wide variety of reasons that an emergency revision action may be necessary, the POI must determine the best course of action to be taken after being notified of the emergency revision. POI's shall make assigned operators aware of this guidance.

2114.–2124. RESERVED.

[PAGES 3-2074 THROUGH 3-2080 RESERVED]

CHAPTER 15. MANUALS, PROCEDURES, AND CHECKLISTS

SECTION 3. GENERAL OPERATIONS MANUALS

2125. GENERAL. This section contains information, direction, and guidance to be used by principal operations inspectors (POI) in the evaluation of an operator's general operations manual (GOM). The operator's GOM is a segment of the operator's general manual system. Federal Aviation Regulations (FAR) §§ 121.133 and 135.21 require that each operator prepare and keep current a GOM containing guidance for flight, ground, and management personnel during the conduct of the operator's operations.

2127. CONTENT OF GENERAL OPERATIONS MANUALS. FAR §§ 121.135 and 135.23 specify topics that must be addressed in an operator's GOM. The operator's GOM must contain the duties and responsibilities for each category of employee. This manual must also provide sufficient policy, direction, and guidance to its employees for the safe and efficient performance of their duties. In addition, an operator's GOM must address the policies, systems, and procedures necessary to comply with operations specifications (OpSpecs) provisions and safe operating practices. This section contains discussions of selected topics that POI's should look for when evaluating an operator's GOM, and which may be required by the operator's initial and final compliance statements (see volume 2, chapter 2, paragraphs 73 and 117).

> **NOTE: The requirement to develop a GOM does not apply to a FAR Part 135 single pilot operator or a FAR Part 135 operator issued an exemption to FAR § 135.21 by paragraph A5 of the OpSpecs (see volume 2, chapter 3, section 2, paragraph 181).**

2129. OPERATOR MANAGEMENT STRUCTURE. When evaluating an operator's GOM, POI's must ensure that the operator's management structure is included in the GOM and that it meets the following guidelines:

A. Management Structure. The GOM must contain a description of the operator's management structure as it pertains to flight operation activities. Organizational entities, areas of responsibility, and titles of key management positions must all be identified in the management structure. This description should contain information on how the flight operation management structure interfaces with the airworthiness management structure and the responsibilities of both. Organizational charts and diagrams may also be useful in showing the relationship between operational units within the company.

B. Names of Management Personnel. The names of the individuals filling required management positions must be listed in the GOM. An acceptable way for the operator to meet this requirement is to include a copy of its OpSpecs in the manual. The Federal Aviation Administration (FAA) may approve management structures and titles different from those specified by FAR § 135.37(a) and FAR § 121.59 by granting a deviation to these FAR. When such a deviation is granted, it must be listed in paragraph A5 of the OpSpecs along with the names and titles of the approved management positions listed in paragraph A6 of the OpSpecs.

2131. AUTHORIZED OPERATIONS. When evaluating an operator's GOM, POI's must ensure that the operator's authorized operations are included in the operator's GOM, and that they meet the following guidelines:

A. Clear Descriptions of Authorized Operations. The GOM must contain clear descriptions of the types and kinds of operations that the operator is authorized to conduct. The GOM must prohibit those operations that a flightcrew could possibly conduct but which the operator is specifically prohibited from conducting by the OpSpecs. The GOM must contain information on the authorized areas of en route operation in which flights may be conducted, including the types of aircraft authorized, crewmember complements, and any special en route and instrument approach procedure authorizations or requirements. One way an operator may describe the types and kinds of authorized and prohibited operations is to include a copy of the operator's OpSpecs in the GOM. Since the OpSpecs is designed to address a variety of situations and is not easily understandable as it applies to specific operational circumstances, POI's should encourage operators to extract the applicable information and incor-

porate it in the GOM. Clearly written direction and guidance on how to comply with authorizations and limitations should also be included. It is acceptable for operators to contract a charting and publishing service (such as Jeppesen/Sanderson) to prepare manual material concerning these authorizations and limitations. In these cases, the charting and publishing service's product is considered to be a part of the operator's GOM. POI's must review this portion of the operator's GOM as well as all other portions.

B. Flight Operations Policies, Methods, and Procedures. Flight operations policies, methods, and procedures may be located in either the GOM, in a section of the GOM such as a flight operations policy manual, or in a company flight manual (CFM) (see section 1 of this chapter for a definition of CFM). When an operator operates a variety of aircraft, it may be preferable for the flight operations policies, methods, and procedures that are common to all aircraft to be published in the GOM instead of each CFM. Crewmembers are required to comply with the flight operations policies, methods, and procedures, regardless of whether they are published in the GOM or the CFM. Therefore, flight operations policies, methods, and procedures should be written in directive language, and provide specific operational criteria. An example of a flight operations policy statement that does not provide a clear directive or specific operational criteria is as follows: "Use caution when arriving or departing a terminal area when thunderstorms are present." An example of a flight operations policy statement that is clearly a directive and provides specific operational criteria is as follows: "Takeoffs and landings shall not be attempted when thunderstorms are within 3 miles of the airport or the path of takeoff or arrival."

2133. WEIGHT AND BALANCE PROCEDURES. When evaluating an operator's GOM, POI's shall ensure that an operator's weight and balance procedures are included in the operator's GOM and that they meet the following guidelines:

A. Placement of Weight and Balance Procedures. Each type of airplane used by the operator may require a separate weight and balance procedure. In such cases, it may be appropriate for the operator to place the weight and balance procedure to be used by flightcrews in the CFM and the procedures to be used by other flight operations personnel in sections of the GOM. If the operator develops a single weight and balance procedure for all aircraft operated, it may be appropriate for the operator to place the procedure to be used by flightcrews and other flight operations personnel in the GOM. Operators may develop their own weight and balance procedures or use the procedures furnished by aircraft manufacturers. POI's should recommend the latest editions of the following advisory circulars (AC) to the operator:

- AC 43.13-2, "Acceptable Methods, Techniques, and Practices—Aircraft Alterations"
- AC 91-23, "Pilot's Weight and Balance Handbook"
- AC 120-27, "Aircraft Weight and Balance Control"

B. The approval of weight and balance procedures is granted in paragraph E96 of the OpSpecs. Reference to the OpSpecs may be made in the GOM; however, the reference may not be used instead of a detailed description of the procedures to be used by flight operations, ground handling, and flightcrew personnel. POI's must ensure that the information and guidance in the operator's GOM is consistent with that in the general maintenance manual (GMM). The weight and balance procedures described in the operator's manuals should normally address the following topics:

- Procedures for complying with weight and balance limitations for each type of aircraft
- For FAR Part 135 operators that operate multiengine aircraft, procedures for ensuring that the empty weight and center of gravity of each multiengine aircraft is determined by actually weighing the aircraft within the preceding 36 months
- Procedures for determining the weight of passengers, crew, cargo, and baggage
- Procedures for making the center of gravity calculations, including loading schedules or other approved methods, if applicable
- Procedures for the completion and disposition of load manifests and weight and balance records
- Procedures for loading the aircraft

2135. OPERATIONAL CONTROL. When evaluating an operator's GOM, POI's must ensure that an operator's operational control procedures are included. The procedures, duties, and responsibilities of flightcrew, operational control, and management personnel must also be described. Furthermore, the GOM must contain staffing requirements for operational control personnel during periods of time that flights are operational. When training and operational control requirements for operational control personnel are not contained in a training and qualification docu-

ment, they must be listed in the GOM. The POI must ensure that the following requirements are met:

A. FAR Part 121 Domestic and Flag Operations. The description of the operational control system used by FAR Part 121 operators conducting domestic and flag operations must be comprehensive. The GOM must contain flight dispatch procedures as well as flight-watch procedures. The interrelation of flight dispatch, crew scheduling, and airworthiness control must be outlined in detail. The communication facilities to be used for operational control purposes, procedures to be used with Air Traffic Control (ATC), and methods to be used for handling delayed flights, must all be addressed. Procedures to be used during adverse weather conditions and for discontinuing flight in unsafe conditions must also be covered in the GOM. The procedures to be used to operate unscheduled flights under supplemental regulations must be outlined if the operator conducts these kinds of flights (see volume 3, chapter 6, of this handbook for more detailed information on flight dispatch systems).

B. FAR Part 121 Supplemental Operations. The description of the operational control system used by FAR Part 121 operators that conduct only supplemental operations must contain the flight release and flight-watch procedures to be used by flightcrew, operational control, and management personnel. The interrelation of flightcrews, persons authorized to release flights, and airworthiness control personnel must be outlined. The communication facilities to be used and the procedures for using these facilities must also be covered in the GOM. GOM's must contain procedures to be used during adverse weather conditions and for discontinuing flight in unsafe conditions. FAR § 121.125(d) requires that the OpSpecs specify the flight-following system and the location of the flight-following centers. Paragraph A8 of the OpSpecs is allocated to authorize this type of operational control system. If the GOM contains a comprehensive description of the system, only a reference to that GOM section needs to be placed in paragraph A8 of the OpSpecs (see volume 3 chapter 6 of this handbook for more detailed information on flight-following systems).

C. FAR Part 135 Operations. As a minimum, the description of the operational control system used by FAR Part 135 operators must contain a list of the names and titles of the personnel who are authorized by the operator to exercise operational control. If the operator does not establish a flight-watch system, the GOM must contain directions to flightcrews for filing an FAA flight plan for each flight conducted. If a flight-watch system is established, the GOM must contain an outline of the procedures that provide the operator with at least the information included in a visual flight rules (VFR) flight plan for each flight operated. The GOM must also contain an outline of the procedures that provide the operator with information on the location, date, and estimated time for reestablishing radio or telephone contact if flights are conducted in areas where such communications cannot be maintained with the operator. The flight-locating system must also be provided for timely notification to an FAA facility and search and rescue facility when an aircraft is overdue or missing. The GOM shall also contain a description of the procedures for retaining flight location information until a flight has been completed. If a FAR Part 135 operator uses a flight control system that is more sophisticated than the basic requirements of the regulation, the GOM shall contain a description of the system and procedures actually used (see volume 3, chapter 6, of this handbook for more detailed information on FAR Part 135 Flight Control Systems).

2137. FLIGHT PLANNING. When evaluating an operator's GOM, POI's shall ensure that an operator's flight planning procedures are included. The direction and guidance for flight planning must be comprehensive and address the responsibilities of both flight control and flightcrew personnel. The GOM must contain a discussion of weather minimums, special airports, and other special requirements such as drift-down, rerelease, and diversion contingencies. Some operators may elect to place the flight planning procedures in the CFM and the operational control procedures in a dispatch or flight control user manual.

2139. NOTICES TO AIRMEN (NOTAM) AND PILOT REPORTS (PIREP). When evaluating an operator's GOM, POI's shall ensure that procedures for the acquisition of NOTAM's and PIREP's and for the distribution of these NOTAM's and PIREP's to applicable personnel are included. The GOM should also contain a description of the procedures for obtaining applicable NOTAM's that are only distributed to a local area.

2141. RESTRICTED OR SUSPENDED OPERATIONS. The regulations require operators knowing of conditions that preclude safe operations (including hazardous airport and runway conditions) to restrict or suspend operations until those conditions change. POI's must evaluate an operator's GOM to ensure that it contains a description of the procedures for employees to follow should they become aware of such conditions.

2143. INTERNATIONAL OPERATIONS. For an operator that conducts international operations, POI's must evaluate the operator's GOM to ensure that it includes pertinent and necessary flight control

information. In the GOM, particular emphasis should be placed on fuel and performance requirements, communications, weather reports and forecasts, flight planning, and any specialized means of navigation. POI's should refer operators to the latest editions of the following AC's concerning international operations:

- AC 90-76, "Flight Operations in Oceanic Airspace"
- AC 90-79, "Recommended Practices and Procedures for the Use of Electronic Long-Range Navigation Equipment"
- AC 91-49, "General Aviation Procedures for Flight in North Atlantic Minimum Navigation Performance Specifications Airspace"
- AC 120-31, "Operational and Airworthiness Approval of Airborne Omega Radio Navigation Systems as a Means of Updating Self-Contained Navigation Systems"
- AC 120-33, "Operational Approval of Airborne Long-Range Navigation Systems for Flight Within the North Atlantic Minimum Navigation Performance Specifications Airspace"
- 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"
- AC 121-13, "Self-Contained Navigation Systems (Long Range)"

2145. OBSERVER'S SEATS. POI's should ensure that the operator's GOM includes the requirement that the operator must provide an observer's seat (jumpseat or passenger seat) to FAA inspectors and other specified personnel. Usually, operators assign the authority to control the use of these observer's seats to a flight control department. Gate agents and passenger handling personnel must also be aware of these requirements. Crewmembers must also be aware of the procedures to be used for observer seat assignments. Information to comply with FAR §§ 121.547, 121.548, 121.581, and 135.75 must be included in the GOM, such as the following:

- Priorities of FAA inspectors, National Transportation Safety Board (NTSB) personnel, Secret Service agents, crewmembers, manufacturer's technical representatives, and other personnel. (The FAA has second priority after Secret Service when they are protecting someone on the flight.)
- Methods for ensuring that no more than one person is assigned to a jumpseat at any particular time
- Procedures for disseminating jumpseat assignments to other stations

2147. LINE STATION OPERATIONS. Line station operations are those activities performed by the operator's personnel (or by other personnel for the operator) to originate, turn around, or terminate flights conducted by the operator. For an operator that conducts line station operations, POI's must evaluate the operator's GOM to ensure that it includes the necessary information on the various topics that follow:

A. Line station operations should include the use of the following types of facilities and equipment:

- Ramp areas, including markings, signs, signaling devices, lighting, and blast fences
- Ramp facilities and equipment, such as passenger and cargo boarding and deplaning equipment (towing, refueling, catering, and ground power equipment)
- Crewmember meeting areas, facilities for crewmember flight planning (preparation for flight), and post-flight activities
- Ground station personnel work areas and facilities, communications equipment, and administrative support

B. Inspectors must ensure that an operator's GOM contains the policies, procedures, and guidance to be used by the personnel who support the operator's flight operations at line stations. This manual material must include those situations in which the operator maintains line stations as well as situations in which the operator contracts or purchases line station support. This type of material is usually located throughout various user manuals, such as ground station operations and maintenance manuals, passenger service manuals, facilities and equipment manuals, fueling manuals, and other special types of manuals. An operator may format and organize this type of manual material in a manner that is most consistent and usable for the operator's kind and type of operation. Regardless of the format and organization, however, this type of manual information is considered to be GOM material. The following are examples of the types of information that should be addressed in manual material concerning line stations operations:

(1) Duties and Responsibilities. The GOM or GMM, as appropriate, must contain an outline of the duties and responsibilities of line station supervisory personnel. The types of positions that should be

addressed include the following: ground station operations personnel, passenger handling agents, cargo and baggage handling personnel, and aircraft servicing personnel (when not addressed in the GMM). When an operator contracts for, or purchases line station support, the GOM or GMM, as appropriate, must detail the procedures to be used by the personnel providing the support.

(2) Passenger Handling and Protection. The GOM must contain procedures and guidance for ensuring the safety of passengers during line station operations. The following are examples of passenger handling and protection subjects that must be addressed in the GOM:

- Procedures for passenger boarding and deplaning
- Procedures for use of jetways, passenger boarding stairs, air stairs, and other types of passenger boarding equipment
- Procedures to ensure the safety of passengers on the ramp, including restricting of ground equipment and vehicle operation on ramps; and directing passengers to and from aircraft, around equipment, and to painted pathway lines on the ramp
- Procedures and guidance for protecting passengers from jet intake and blast, rotating and static propellers and rotors, ice on the ramp and boarding equipment, and tripping hazards
- Procedures for prohibiting smoking in no-smoking areas
- Procedures for assisting and ensuring safety of handicapped persons
- Procedures for handling intoxicated, hostile, or unruly persons
- Procedures for handling and controlling carry-on baggage
- Procedures for exit seating
- Procedures for identifying and handling hazardous materials

(3) Aircraft Servicing and Ramp Operations. The GOM and GMM must contain detailed safety procedures and guidance on servicing and maintaining aircraft during line station operations. These manuals should also contain instructions on the maintenance and use of ramp areas. The following are examples of procedures for aircraft servicing and ramp operations that should be addressed in the GOM:

- Procedures for the safety and protection of personnel working on the ramp
- Procedures and/or guidance for the maintenance and catering of aircraft, with or without passengers on board
- Procedures for fueling aircraft with or without passengers on board, including any requirements for crewmembers to be on board during fueling, or prohibitions against positioning fuel trucks next to open exits with passengers on board
- Procedures for operating ground equipment, including the capabilities and limitations of the equipment, and the training and qualification of persons using the equipment
- Procedures and guidance for properly locating and stowing ground equipment
- Procedures for the operation of aircraft cargo doors, baggage and cargo loading, closing and checking the security of doors
- Procedures for foreign object damage (FOD) control and periodically inspecting ramp areas
- Procedures to be used during adverse weather conditions such as thunderstorms, high winds, or low visibility
- Procedures for the inspection and removal of frost, ice, snow, or standing water

(4) Hot and Cold Weather Operations. POI's should evaluate an operator's GOM to ensure that it (as well as the GMM) contains detailed procedures and guidance on hot and cold weather operations, including the following:

- Procedures for the inspection of ramps for accumulation of frost, ice, snow, or standing water
- Precautions for the operation of vehicles and equipment
- Restrictions and cautions on aircraft movements
- Restrictions and cautions for the protection of passengers and ramp personnel

(5) Deicing Procedures. Aircraft ground deicing procedures should be clearly delineated by the operator. While such procedures are usually in the GMM, the operator's GOM must contain the following types of information concerning deicing for crewmembers, ground operations, and management personnel:

- Assignment of responsibility for ensuring that aircraft is clear of frost, ice, and snow accumulation
- Conditions that require aircraft ground deicing
- Procedures to ensure the effectiveness of deicing, including the frequency of applications, proper fluid mixtures, and tactile or close visual checks of selected portions of critical surfaces
- Parts of the aircraft to deice, including a description of the critical surfaces of the aircraft used by the operator
- Locations on the ramps or airports where deicing will be conducted
- Engine auxiliary power unit (APU) and ground equipment operation during deicing
- Passenger and ramp personnel protection during deicing
- Procedures to be used by contract personnel, when the operator contracts for deicing services
- If applicable, a complete description of the elements of the operator's ground deicing/anti-icing program and the procedures required to operate under that program
- If applicable, a complete description of the ground deicing/anti-icing operational procedures that the operator uses to comply with FAR § 121.629 and FAR § 135.227

(6) Aircraft Movement in the Ramp Area. POI's must ensure that the operator's procedures and guidance for the movement of aircraft in the ramp area are carefully coordinated between the operator's GOM and GMM (or appropriate user manuals). The definitions of signaling devices, signs, and ramp markings (such as taxi lines, stop lines, boundary and clearance lines) must be the same, and mutually understood by both crewmembers and ground handling personnel. Specific procedures for engine start, pre-taxi pushback, powerback (if approved), taxi-out, taxi-in, and parking while in the ramp area must be provided in the GOM (or in an applicable user manual). Communication procedures for ground handling personnel and crewmembers must be thoroughly coordinated. POI's must ensure that the interphone terminology and hand signals used by ground handling personnel and crewmembers have the same meaning. The need for common terminology and hand signals is also important for crewmembers and passenger handling agents. Illustrations of standard hand signals and their meanings should be provided in the GOM and GMM (or appropriate user manuals). The training and qualification requirements of personnel authorized to move aircraft on the ramp or on the airport must be described in the appropriate manuals. For example, when an operator is approved to powerback, the GOM must contain specific procedures for those operations for each authorized airport and gate. Powerback communications and hand signals must be thoroughly coordinated between crewmembers and ground handling personnel.

(7) Line Station Emergency Procedures. POI's must ensure that the operator's GOM and GMM contain procedures to be used by crewmembers or ground personnel in case of emergency situations during line station operations. Line station emergency procedures must contain the specific duties and actions of appropriate personnel. This type of manual material must also include notification procedures and requirements. The notification procedures and requirements should contain specifications as to who will be notified, who will make the notification, how the notification should be made, and when it will be made for the various types of emergency situations that could occur at line stations. Usually this type of manual material should also include a quick reference telephone listing for obtaining firefighting and medical assistance, and for notifying appropriate company management, law enforcement officials, and FAA and NTSB officials. Line station emergency procedures should be published in a distinct section of the GOM or GMM so that they are easily accessible. For large, complex operators, line station emergency procedures are usually published as a manual under separate cover to ensure rapid accessibility. Operators may publish a line station emergency procedures manual for each station because of the uniqueness of each line station. POI's should encourage this as a preferred practice. The types of situations that should be covered in line station emergency procedures include the following:

- Aircraft accidents and incidents (POI's should encourage operators to develop guidance for ground personnel providing passenger lists to aid in handling passengers and accounting for all passengers immediately after a survivable type accident. Handling passengers includes actions such as providing suitable transportation for injured passengers to locations where medical assistance can be obtained.)
- Bomb threats, hijack procedures, and other types of security incidents
- Fuel spills and hazardous materials mishaps

- 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)

(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 pretakeoff, en route, and post-landing briefings of passengers. Operators who use flight attendants (F/A) 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 all of the required items that are addressed during the oral briefings. AC 121-24, "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.

2152.–2160. RESERVED.

FIGURE 3.15.3.1.
EXIT SEATING PROGRAM JOB AID

This preapplication phase job aid provides guidance for determining operator compliance with Federal Aviation Regulations (FAR) §§ 121.585 and 135.129, "Exit Seating." The principal operations inspector (POI) should complete the initial review of the program and coordinate with the regional office focal point for initial approval of the program. The region will retain a copy of the program and will advise AFS-500 (at 703-661-0333) of those air operators that have approved exit seating programs.

Certificate Holder Name:

Doing Business As (d/b/a):

Address:

Certificate Holder Certificate No:

POI Name:

Office & Phone No:

Review Completed
Signature & Date:

Regional Office Focal Point:

Office & Phone No:

Review Completed
Signature & Date:

Date Program Approved:

Date AFS-500 Notified:

Comments:

REQUIRED ATTACHMENTS: Detailed on attached pages - Complete the lines with Y (for Yes) or N (for No):

Exit Seating Procedures

Airport Information

Passenger Information Cards

Aircraft Floor Plans

EXIT SEATING PROCEDURES. Procedures should be submitted as manual sections/training program sections/bulletins, etc. as appropriate to the individual carrier. Attach all applicable sections pertinent to exit seating only.

NOTE: The POI should check for applicability and manual format and ensure that all applicable publications are revised. THE PROCEDURES MUST ADDRESS THE FOLLOWING REGULATORY REQUIREMENTS, AND MUST ADDRESS WHEN, HOW, AND BY WHOM THE ITEMS WILL BE ADDRESSED.

FIGURE 3.15.3.1.—Continued
EXIT SEATING PROGRAM JOB AID

Selection Criteria: Reference FAR 121.585(b) and 135.129(b).	
Do carrier procedures address when, how, and by whom the screening and/or selection will be accomplished?	
Do carrier procedures address the following selection criteria?	
1. Does a person lack sufficient strength, dexterity or mobility in both arms and hands, and both legs to perform the following functions?	
a. Reach upward, sideways, and downward to the location of emergency exit and exit slide operating mechanisms.	
b. Grasp and push, pull, turn, or otherwise manipulate those mechanisms.	
c. Push, shove, pull, or otherwise open emergency exits.	
d. Lift out, hold, deposit on nearby seats, or maneuver over the seat backs to the next row objects the size and weight of overwing exit doors.	
e. Remove obstructions similar in size and weight of overwing exit doors.	
f. Reach the emergency exit expeditiously.	
g. Maintain balance while removing obstructions.	
h. Exit expeditiously.	
i. Stabilize an escape slide after deployment.	
j. Assist others in getting off an escape slide.	
2. Is the person less than 15 years of age or does the person lack the capacity to perform one or more of the functions listed in FAR 121.585(d) or 135.129(d) without the assistance of an adult companion, parent or other relative?	
3. Does the person lack the ability to read and understand instructions related to emergency evacuation provided by the certificate holder in printed or graphic form or the ability to understand oral crew commands in the language used by the carrier?	
4. Does the person lack a sufficient visual capacity to perform one or more of the functions listed in FAR 121.585(d) or 135.129(d) without the assistance of visual aids beyond contact lenses or eyeglasses?	
5. Does the person lack a sufficient aural capacity to hear and understand instructions shouted by crewmembers without the assistance beyond a hearing aid?	
6. Does the person lack the ability to adequately impart information orally to other passengers?	
7. Does the person have either of the following?	
a. A condition or responsibility, such as caring for small children, that would prevent the person from performing one or more of the functions listed in FAR 121.585(d) or 135.129(d).	
b. A condition that might cause the person harm if he or she performs one or more of the listed functions.	
Seating Assignments/Verification Procedures	
Are exit seats identified for seat assignment purposes?	
Reference FAR 121.585(g) and 135.129(g). Does the certificate holder have a procedure that taxi or pushback will not be allowed until at least one required crewmember has verified that no exit seat is occupied by a person the crewmember determines is likely to be unable to perform the functions listed in FAR 121.585(d) and 135.129(d)?	
Are verifying crewmembers specifically identified?	
Reference FAR 121.585(j)(k) and 135.129(j)(k). Does the certificate holder have procedures to honor a passenger's request to be relocated and the procedures for relocation?	

FIGURE 3.15.3.1.—Continued
EXIT SEATING PROGRAM JOB AID

Does procedure reference that a person does not need to disclose his or her reason for the request?	
Reference FAR 121.585(l) and 135.129(l). Does the certificate holder have procedures to move a passenger to accommodate a relocated passenger, in the event of full booking of non-exit seats?	
Denial of Transportation/Resolving Disputes	
Reference FAR 121.585(m) and 135.129(m). Does the certificate holder have procedures to deny transportation because of either or both of the following?	
1. The passenger refuses to comply with instructions.	
2. The only seat that will physically accommodate the person's handicap is an exit seat.	
Reference FAR 121.585(n) and 135.129(n). Does the certificate holder have procedures for resolving disputes, including identification of the employee at the airport to whom complaints should be addressed for resolution?	
Oral Briefing Procedures	
Reference FAR 121.585(i) and 135.129(i). Does the oral briefing reference the following?	
1. Passenger information cards.	
2. The selection criteria in FAR 121.585(b) or 135.129(b).	
3. The functions to be performed under FAR 121.585(d) or 135.129(d).	
4. A request for reseating if any of the following conditions are met:	
a. Cannot meet the selection criteria.	
b. Has a nondiscernible condition that would prevent him or her from performing the listed functions.	
c. May suffer bodily harm as the result of performing one or more of those functions.	
d. Does not wish to perform those functions.	
AIRPORT INFORMATION	
Reference FAR 121.585(f) and 135.129(f). Does the certificate holder have written procedures for making determinations in regard to exit seating available for inspection by the public at all passenger loading gates and ticket counters at each airport where it conducts passenger operations?	
Is a copy of the information attached?	
Is the content complete and the method of inspection identified, such as flyers, signs, and so forth?	
PASSENGER INFORMATION CARDS	
Are copies of applicable cards attached?	
Are cards appropriate to carrier's aircraft and configurations?	
Do procedures address the use and location of cards?	
Reference 121.585(d) and 135.129(d). Do the briefing cards contain the following functions?	
1. Locate the emergency exit.	
2. Recognize the emergency exit opening mechanism.	
3. Comprehend the instructions for opening the emergency exit.	
4. Operate the emergency exit.	
5. Assess whether opening the emergency exit will increase the hazards to passengers being exposed.	
6. Follow oral directions and hand signals given by a crewmember.	
7. Stow or secure the emergency exit door so that it will not impede use of the exit.	

FIGURE 3.15.3.1.—Continued
EXIT SEATING PROGRAM JOB AID

8. Assess the condition of the escape slide, activate the slide, and stabilize the slide after deployment to assist others in getting off the slide (where applicable to aircraft type).	
9. Explain how to pass expeditiously through the emergency exit.	
10. Explain how to assess, select, and follow a safe path away from the emergency exit.	
Does the briefing card contain the selection criteria listed in FAR 121.585(b) or 135.129(b)?	
Does the briefing card contain a request that a passenger identify himself or herself to allow reseating if he or she meets one of the following criteria?	
1. Cannot meet the selection criteria.	
2. Has a nondiscernible condition that will prevent him or her from performing the applicable functions listed above.	
3. May suffer bodily harm as the result of performing one or more of those functions.	
4. Does not wish to perform those functions.	
5. Lacks the ability to read, speak, or understand the language, or the graphic form specified by the carrier, or lacks the ability to understand oral crew commands (in every language used by the certificate holder for the card).	
AIRCRAFT FLOOR PLANS	
Are the aircraft passenger seating floor plans submitted for each aircraft make, model, and series, and for each passenger seating configuration used by the certificate holder?	
Are exits and exit seats identified?	
List aircraft operated:	
Aircraft Make/Model/Series — Configurations (same or show each configuration)	

[PAGES 3-2092 THROUGH 3-2094 RESERVED]

CHAPTER 15. MANUALS, PROCEDURES, AND CHECKLISTS

SECTION 6. APPROVAL AND ACCEPTANCE OF FLIGHT ATTENDANT MANUALS AND CHECKLISTS

2227. GENERAL. This section contains direction and guidance for principal operations inspectors (POI) when approving or accepting an operator's manuals and checklists. This process is based on the general process for approval or acceptance described in volume 1, chapter 4, section 6, of this handbook.

A. Evaluation of Manuals for Federal Aviation Administration (FAA) Acceptance or Approval. An operator may develop and publish in its manual any policy, method, procedure, or checklist that the operator finds necessary for the type of operations conducted. These policies, methods, procedures, and checklists, however, must comply with the Federal Aviation Regulations (FAR) and be consistent with safe operating practices. POI's should encourage operators to be innovative and progressive in developing such policies, methods, procedures, and checklists. The POI's role in the review process is to provide an independent and objective evaluation of the operator's manual material. The POI must ensure that the operator's material complies with the FAR, is consistent with safe operating practices, and is based on sound rationale or demonstrated effectiveness.

(1) POI's should use the job aid in figure 3.15.6.1., "Preparation of Flight Attendant Manual," to assist them in the acceptance of manuals required for flight attendants (F/A) engaged in operations conducted under FAR Part 121. The job aid should be used as follows:

(a) Make a copy.

(b) Add recommendations.

(c) Give the copy to the appropriate representative of the carrier, and ask that person to document the pertinent page number for each item.

(d) When satisfactory, initial each item.

(e) Make appropriate remarks.

(f) When the entire manual is satisfactory, sign the bottom of the last page of the job aid.

(2) POI's should ensure that the information and procedures contained in the F/A manual are consistent with the information and procedures throughout all of the operator's manuals. A review may be accomplished by comparing information and procedures (such as the operator's carry-on baggage program, exit seating program, and emergency procedures) in the F/A manual with those contained in the operator's aircraft/operations and passenger service manuals.

(3) POI's should use a List of Effective Pages or some other method to determine currency and completion of the F/A manual.

(4) POI's should coordinate with the operator's assigned principal security inspector to review the security and hazardous materials procedures that are described in the operator's manuals.

2228.–2232. RESERVED.

FIGURE 3.15.6.1.
PREPARATION OF FLIGHT ATTENDANT MANUAL

Each flight attendant (F/A) manual required by FAR § 121.133 must include the necessary instructions and information for all personnel to perform their duties and responsibilities with a high degree of safety. Thus, the manual should include at least the following information:

	Manual Page	Accepted Initials
DUTIES OF F/A's Definition of crewmember. This should include a general statement of the operator's philosophy regarding F/A duties and responsibilities.		
MANUALS The manual must be easy to read.		
The manual must be easy to revise. The manual should contain instructions for processing revisions.		
Each manual page must have the date of the last revision.		
Each crewmember shall have a manual accessible while performing assigned duties. The manual should contain the stipulation that each flight attendant must have a manual readily accessible on board any flight if they are assigned any duties.		
The manual must be up-to-date. This should be stated in the manual.		
CREW PROCEDURES Authority of the pilot-in-command.		
Method of designating succession of command.		
When applicable, equipment interchange should be in the manual.		

Remarks:

FIGURE 3.15.6.1.—Continued
PREPARATION OF FLIGHT ATTENDANT MANUAL

	Manual Page	Accepted Initials
ADMISSION TO THE FLIGHT DECK Persons who may be admitted to flight deck are the following:		
Aviation Safety Inspectors,		
Secret Service agents.		
COCKPIT SECURITY PROCEDURE Procedure for cockpit crew to identify cabin crew before allowing entry to flight deck.		
Locking of the cockpit door.		
STERILE COCKPIT PROCEDURE Include a method of having F/A's aware that the flight is in the sterile cockpit time.		
COMMUNICATION WITH CREW Normal methods of communication and coordination among crewmembers including establishing communication with the cockpit crew before or immediately after flight begins.		
CREW COORDINATION General statement concerning the importance of crew coordination.		
Preflight crew briefings - crew and flight attendants.		
The importance of, and procedures for, reporting in-flight irregularities and/or malfunctions (mechanical, passenger, or other) to the cockpit must be in the manual.		
Crew coordination procedures to ensure that carry-on baggage has been properly stowed before the passenger loading door is closed.		
Crew coordination procedures to ensure that the aircraft (including the cabin) is ready for movement on the surface for takeoff or landing.		
Crew coordination procedures for exit seating.		

Remarks:

FIGURE 3.15.6.1.—Continued
PREPARATION OF FLIGHT ATTENDANT MANUAL

	Manual Page	Accepted Initials
F/A's		
Requirement for all F/A's to be seated during movement on the surface unless performing safety-related duties.		
Number of F/A's that must be on board when there are passengers on board the airplane and it is parked at the gate. Method to identify flight attendant substitutes that might be used while the aircraft is parked at the gate.		
The specific number and location of F/A's that must be on board before movement on the surface. Since this information should be given for each aircraft, it could be contained in the aircraft specific part of the manual.		
F/A duties and number of F/A's required during refueling procedures.		
Policy for use of jumpseat by anyone other than the assigned F/A.		
Policy of checking emergency equipment. When F/A's are required to check, then specific responsibilities for specific equipment by aircraft type may be in the appropriate section of the manual.		
PASSENGER INFORMATION		
Briefing passengers before takeoff about the following:		
Compliance with lighted signs, posted placards, and instruction of crew. Use of seat belts. Demonstration of fastening and opening seat belt buckles.		
That the FAA requires passenger compliance with lighted passenger information signs and crewmember instructions concerning the use of seat belts.		
Smoking. Compliance with lighted signs, posted placards, and instruction of crew. That there is a prohibition against smoking in the lavatories and that federal law prohibits tampering with, disabling, or destroying smoke detectors.		
Location of exits.		
Location and use of required flotation equipment.		

Remarks:

FIGURE 3.15.6.1.—Continued
PREPARATION OF FLIGHT ATTENDANT MANUAL

	Manual Page	Accepted Initials
Exit seating reference to passenger information cards.		
A request that a passenger identify him or herself if he or she: Cannot meet selection criteria,		
Has a nondiscernible condition,		
May suffer bodily harm,		
Does not wish to perform those functions.		
Individual briefing of those who may need assistance and briefing of persons who may be attending these individuals.		
After takeoff briefing: Briefing that notifies passengers to keep their seat belts fastened even when "seat belt" sign is off (to be given after takeoff and before or immediately after "seat belt" sign has been turned off).		
EXTENDED OVERWATER BRIEFING Include everything in FAR 121.571.		
Demonstrate donning and inflating life preserver.		
Brief on the location and operation of the following: Adult life preservers,		
Infant and child life preservers,		
Liferafts,		
Other flotation means.		
USE OF OXYGEN Before flight is conducted above flight level 250, crewmembers shall explain the necessity of using oxygen and perform the following:		
Point out location of oxygen dispensing equipment.		
Demonstrate use of oxygen dispensing equipment.		
ILLUMINATED SAFETY SIGNS When a passenger safety information sign remains illuminated for a period of time, the crew should make periodic announcements.		
When a passenger continues not to obey a safety information sign, the pilot-in-command should be notified.		

Remarks:

FIGURE 3.15.6.1.—Continued
PREPARATION OF FLIGHT ATTENDANT MANUAL

	Manual Page	Accepted Initials
PASSENGERS Disabled: Exit seating applicable parts of FAR and DOT Regulation 382. This may include the location, operation, and procedures for use of the following: onboard wheelchair,		
disabled equipped lavatories,		
movable armrests.		
Infants and Children: The manual should include the following concerning infants and children: Procedures for restraint including location and actions during an emergency.		
Information about the types of restraint devices that conform to all Federal motor vehicle standards.		
Information that if the parents have purchased a ticket and the device is approved, it must be allowed.		
The fact that infants should be restrained in the approved restraint device during turbulence.		
PASSENGER ISSUES Serving alcohol,		
Reporting persons who cause a disturbance,		
Armed passengers,		
Passengers who abuse a crewmember,		
Interference with a crewmember in the performance of duties,		
Passengers who are mentally retarded,		
Passengers who are emotionally disturbed,		
Pregnant passengers,		
Non-English speaking passengers - refer to the exit seating rule,		
Stretcher patients,		
Policy and procedures for non-compliance of smoking ban,		
Others.		
SAFETY PROCEDURES Restraint of galley equipment (including galley and ticket carts) for movement on the surface, takeoff, landing, and when not in use. This should include the fact that carts should be on a mushroom or otherwise properly restrained when not in use.		
Proper stowage of cargo (including musical instruments and pet carriers) in the cabin.		

Remarks:

FIGURE 3.15.6.1.—Continued
PREPARATION OF FLIGHT ATTENDANT MANUAL

	Manual Page	Accepted Initials
Appropriate portions of carry-on baggage program.		
Management of boarding carry-on baggage. Each piece of carry-on baggage is properly stowed before the passenger loading door is closed. This includes closing the overhead bin and cabin cargo compartment doors.		
Approved stowage areas for carry-on baggage.		
Crew baggage stowage.		
Stowage of canes.		
Prohibition against stowage of trash or carry-on baggage in unauthorized receptacles such as lavatories or the cockpit.		
Prohibition against commingling articles with safety equipment.		
Need for tray tables to be stowed for movement on the surface, takeoff, and landing. Movie screens that extend into the aisle must also be stowed for movement on the surface, takeoff, and landing.		
Need for seatbacks to be in their full upright position before takeoff and landing.		
Need to stow F/A's restraint systems when not in use.		
DOORS Readying doors for movement on the surface, including general statement of responsibility for readying doors. Procedures for specific crewmembers at specific doors would probably be better included in aircraft section of the manual.		
Ensure that one door is ready for passenger egress when aircraft is parked at the gate.		
DRUGS Carriage of drugs,		
Use of drugs.		

Remarks:

FIGURE 3.15.6.1.—Continued
PREPARATION OF FLIGHT ATTENDANT MANUAL

	Manual Page	Accepted Initials
ELECTRONIC DEVICES Procedures to follow when occupants use electronic devices and which devices are not allowed.		
HAZARDOUS MATERIALS Identification of and, if they are going to be in the cabin, procedures for storage and handling.		
LIGHTS Flashlight holders and how used, if used.		
Operator's policy to ensure that each crewmember has a workable flashlight.		
Cabin light setting for takeoff, landing, and forewarned (anticipated emergency evacuations and ditchings.)		
Specific aircraft light controls may be contained in the aircraft section of the manual.		
TURBULENCE Crew coordination in turbulence.		
Service procedures, especially of hot liquids, in turbulence.		
Passenger seat belt discipline in turbulence.		
SURVIVAL Information about survival in situations appropriate for operations such as water, mountains, desert, or jungle.		

Remarks:

FIGURE 3.15.6.1.—Continued
PREPARATION OF FLIGHT ATTENDANT MANUAL

	Manual Page	Accepted Initials
HIJACKING Hijacking procedures should be developed with the assistance of the Principal Security Inspector assigned to the operator, but the responsibility for the final acceptance of manual contents rests with the Principal Operations Inspector. NOTE: Procedures contained in F/A manual may be very limited. These procedures may be a "coded" memory aid.		
A method of communication with other crewmembers when hijacking is either threatened or in progress. NOTE: Details may not be in the F/A manual.		
WEAPONS Security regulations and operator's procedures for the carriage of weapons.		
ILLNESS/INJURY Contents and procedures for use of first aid kit.		
Contents and procedures for use of medical kit.		
Recognition of common medical problems.		
First aid treatment that considers limited and special space for those problems in aircraft cabins.		
Use of first aid oxygen may be placed with procedures or with use of equipment. In this checklist, it is with oxygen equipment.		
Additional first aid.		

Remarks:

FIGURE 3.15.6.1.—Continued
PREPARATION OF FLIGHT ATTENDANT MANUAL

	Manual Page	Accepted Initials
OXYGEN: USE AND NEED Depressurization,		
Slow leaks,		
Rapid depressurization procedures, including the following:		
Signs of a loss of cabin pressure,		
Symptoms of hypoxia,		
Crew coordination,		
F/A actions, including the following: grabbing the nearest oxygen mask,		
sitting down or holding on to something solid and waiting for word from the flight deck before moving around,		
assisting passengers.		
Description of use of each type of portable oxygen bottle and mask. This is especially important with solid state (chemical) oxygen generators.		
Procedures for F/A to administer oxygen to self.		
Procedures for use of medical (passenger supplied) oxygen (must be under operator's maintenance program).		
Prohibition against smoking when oxygen is being administered.		
FIRE PREVENTION AND CONTROL Fire prevention procedures that at least include the following: Checking the lavatories before takeoff and periodically during flight.		
Use of smoking materials.		
Periodic cabin checks.		
Use of circuit breakers located in the cabin (precautions against resetting).		

Remarks:

FIGURE 3.15.6.1.—Continued
PREPARATION OF FLIGHT ATTENDANT MANUAL

	Manual Page	Accepted Initials
Proper stowage of articles that could contribute to fire (such as matches).		
Checking of oven and oven vents.		
F/A procedures for handling passengers.		
Fire control procedures should include fires occurring in the following locations: on the ground,		
outside the aircraft,		
inside the aircraft,		
during flight.		
During fires inside the aircraft, fire control procedures should include the following: Type of fire extinguisher on class of fire,		
Use of protective breathing equipment (PBE),		
Fire control when volatile fuel is involved (this may be included in hijacking or threatening passenger part of the manual),		
Smoke control procedures,		
Use of circuit breakers,		
Fire in galley, including oven,		
Fire in the lavatory or other confined spaces,		
Light ballast fires.		

Remarks:

FIGURE 3.15.6.1.—Continued
PREPARATION OF FLIGHT ATTENDANT MANUAL

	Manual Page	Accepted Initials
EVACUATION PROCEDURES For each type of aircraft evacuation or ditching, the manual should at least include procedures and techniques regarding the following: Crew coordination,		
Giving commands to passengers,		
Describing brace for impact positions,		
Assessing conditions,		
Ensuring aircraft has come to a complete stop,		
Evacuating persons and any of their attendants who may need assistance,		
Redirecting passenger flow,		
Caring for passengers following accident.		
Unforewarned (unanticipated aircraft evacuation or water landing) including the following: Crew coordination,		
Commands given to passengers,		
Initiation,		
Actions at door.		
Forewarned (anticipated aircraft evacuation or ditching) including the following: Crew coordination,		
Commands given to passengers,		
Passenger preparation,		
Cabin preparation.		
Unwarranted (unneeded) evacuation, passenger or crew initiated, including the following: Crew coordination,		
Stopping the evacuation.		

Airline: _____

Principal Operations Inspector: _____
(signature)

Date: _____

FIGURE 3.15.6.1.—Continued
PREPARATION OF FLIGHT ATTENDANT MANUAL

This part of the form should be filled out and signed for each aircraft type/model.

AIRCRAFT TYPE/MODEL _____

	Manual Page	Accepted Initials
AIRCRAFT DESCRIPTION The manual should contain a description and/or diagram of each type/model of aircraft showing the items listed below. If the location of any of these items varies from one aircraft to another, N-numbers with specific location should be given.		
The assigned takeoff and landing location for each crewmember who might be assigned safety duties in the cabin should be clearly designated.		
The duties and duty station for each crewmember (including flight crew) during an evacuation or ditching should be given.		
If it is part of the operator's procedures, the preflight check of specific safety equipment should be given. This should include checking of placards.		
F/A location for performing safety demonstrations.		
AIRCRAFT EMERGENCY EQUIPMENT The emergency equipment location should be given for each type of aircraft; however, when equipment such as the first aid kit is the same from aircraft to aircraft, the description of the contents and the operation may be contained in the "general section" of the manual. Each exit (clearly show what type of exit),		
Each first aid kit,		
Medical kit,		
Portable lights/flashlights,		
Each fire extinguisher by type,		
Each PBE,		
Flotation equipment,		
Overwater equipment,		
Survival kits and transmitters, if not attached to liferaft,		
Crash ax,		
Megaphone,		
Appropriate circuit breakers,		
Portable oxygen,		
Supplemental (ship's) oxygen,		
Approved crew bag stowage areas.		

Remarks:

FIGURE 3.15.6.1.—Continued
PREPARATION OF FLIGHT ATTENDANT MANUAL

AIRCRAFT TYPE/MODEL _____

	Manual Page	Accepted Initials
Each type of equipment should be depicted so its operation is easy to follow. This includes the following:		
FLOOR LEVEL EXITS A description for operations and procedures at floor level exits should include the following: opening in normal mode,		
opening in emergency mode,		
ready for movement on the surface,		
ready for gate arrival,		
ready at gate, if appropriate.		
EVACUATION SLIDES Description of operation and procedures for evacuation slides, slide/rafts, or ramps should include the following: emergency inflation,		
manual inflation.		
WINDOW EXITS A description of operation and procedures at window exits should include the following: opening exits,		
placement of window,		
recommended method of exiting window,		
use of life lines.		
VENTRAL STAIRS A description and procedures pertinent to ventral stairs should include the following: information regarding lowering or otherwise operating stairs in normal and emergency modes;		
information about stair use in evacuations.		
TAILCONES The information about the operation and procedures pertinent to tailcones should contain the following: detailed description of the activation of the tailcone.		
details of unusual environmental factors that could affect crewmember performance in or around tailcones.		
COCKPIT EMERGENCY EXITS Information about this equipment should describe or depict the opening and the use of any equipment that would assist in reaching the ground (such as escape ropes).		

Remarks:

FIGURE 3.15.6.1.—Continued
PREPARATION OF FLIGHT ATTENDANT MANUAL

AIRCRAFT TYPE/MODEL _____

	Manual Page	Accepted Initials
ESCAPE ROUTES OTHER THAN CABIN Information should show the method of reaching these exits, the opening, and actions necessary to exit.		
OTHER EXITS		
DOOR SAFETY STRAPS Include both location and use in normal and emergency operations.		
DOOR INOPERATIVE PROCEDURES If this type of aircraft is allowed to operate with a door inoperative, the procedures to follow for the specific aircraft should be given.		
F/A STATION The F/A manual should contain a description of each type of F/A station. This description should include the following: the proper brace position for that station;		
information about the restraint system at that station and its use;		
the safety equipment that an F/A can reach while seated at that station.		
ELECTRICAL EQUIPMENT The manual should contain information about circuit breakers, heat, or ventilation located in the cabin. This information should include the following: location,		
function,		
operation of the controls.		
EMERGENCY LIGHTS Location of emergency lights, emergency light switches, and procedures for use should be in the manual.		
Information about floor proximity lighting should be given as appropriate to that type of aircraft.		

Remarks:

FIGURE 3.15.6.1.—Continued
PREPARATION OF FLIGHT ATTENDANT MANUAL

AIRCRAFT TYPE/MODEL _____

	Manual Page	Accepted Initials
PUBLIC ADDRESS AND INTERPHONE SYSTEMS A description of these systems that includes their use in normal and emergency situations should be included.		
EVACUATION ALARMS When evacuation alarms are present, information about their location, function, and operation should be given.		
OXYGEN SYSTEMS The manual should include the following information: location of oxygen dispensing units,		
information about additional drop-down masks,		
proper method of use,		
manual deployment,		
if applicable, information about special characteristics of chemically generated devices, (such as heat generating properties).		
PORTABLE OXYGEN EQUIPMENT Description, location, and operation for each kind of portable oxygen dispensing unit and the masks should be given.		
GALLEY RESTRAINT Description of the locations and methods of securing each piece of galley equipment should be given.		
CARRY-ON BAGGAGE RESTRAINT Description of the location and operation of carry-on baggage restraints should be given when applicable. This would include use of restraint straps across a closet or securing an overhead bin.		
Stowage of items other than approved cargo compartments. Some airlines have as part of their carry-on procedures the fact that carry-on baggage may be stowed in a seat. If this is the case, the seats where it can be stowed and method of stowage should be included in the manual.		

Remarks:

FIGURE 3.15.6.1.—Continued
PREPARATION OF FLIGHT ATTENDANT MANUAL

AIRCRAFT TYPE/MODEL _____

	Manual Page	Accepted Initials
SMOKE ALARMS The manual should give the location of the smoke alarms. It should also contain information regarding the procedures to follow when a smoke alarm has been activated.		
TRASH CONTAINER DOORS The manual should contain information about the location, function, and proper operation of these doors.		
UPPER/LOWER DECK Some aircraft are multi-decked. When this is the case, information regarding safety equipment on those decks should be provided.		
LIFTS Multi-decked aircraft are usually equipped with personnel/galley lifts. Operation and function of the safety interlock system of these lifts should be described.		
FLOTATION CUSHIONS Location, function, and use of flotation cushions should be given.		
LIFE PRESERVERS Donning, inflation, use, and activation of light for each type of life preserver, including infant and child preservers, should be given. (If only one type is used, this information may have been given in the "general section" of the manual.)		
LIFERAFTS AND SLIDES USED IN FLOTATION When the aircraft is equipped with liferafts, slide/raft packs, or slides used as flotation ramps, information about this equipment should include a description of the equipment, its contents, and at least the following:		
transfer from one door to the next,		
inflation and launching,		
proper method of boarding passengers and crew,		
crew assignments during ditching and in the liferaft.		

Remarks:

FIGURE 3.15.6.1.—Continued
PREPARATION OF FLIGHT ATTENDANT MANUAL

AIRCRAFT TYPE/MODEL _____

	Manual Page	Accepted Initials
INOPERABLE EQUIPMENT Procedures to follow when a piece of required safety equipment is inoperable should be part of the manual.		
FIRE EXTINGUISHERS/PBE The location of the equipment and any features that make use of operation unique to this aircraft.		
SMOKE BARRIERS Some aircraft are equipped with smoke barriers. When this is the case, information about their location and use should be part of the manual.		
FIRST AID/MEDICAL KITS The location of the equipment and any features that make use unique to this aircraft should be given.		

Remarks:

Airline: _____

Principal Operations Inspector: _____
(signature)

Date: _____

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CHAPTER 4. MINIMUM EQUIPMENT LISTS (MEL) AND CONFIGURATION DEVIATION LISTS (CDL)

SECTION 1. GENERAL

1065. BACKGROUND. MEL procedures were developed to allow the continued operation of an aircraft with specific items of equipment inoperative under certain circumstances. The Federal Aviation Administration (FAA) has found that for particular situations, an acceptable level of safety can be maintained with specific items of equipment inoperative for a limited period of time, until repairs can be made. The MEL document describes the limitations that apply when an operator wishes to conduct operations when certain items of equipment are inoperative. In 1964, the FAA established and adopted the MEL program for Federal Aviation Regulations (FAR) Part 121 operations. In 1978, FAR Part 135 multiengine aircraft operations were included in the MEL program; in 1991, FAR Part 135 single-engine operations were included.

1067. GENERAL. Section 1 of this chapter contains definitions and a general overview of the MEL system. Section 2 contains information on the development and approval process of master minimum equipment lists (MMEL). Section 3 contains information and guidance on developing and approving MEL's. Section 4 contains information and guidance for aviation safety inspectors (ASI) on MEL use during operations. Section 5 contains information and guidance for ASI's on how the master minimum equipment list subsystem (MMEL Subsystem) works as an automated method to retrieve the MMEL. Section 6 contains information about the development, approval, and usage of the CDL. Certain FAA technical groups, boards, and national resources related to these topics are referred to throughout this chapter; detailed guidance about these groups may be found in volume 8, chapter 3.

1069. APPLICABILITY. This chapter applies to those operators operating N-registered aircraft in accordance with FAR Parts 121, 129, and 135. Separate guidance exists for MEL's for FAR Parts 91 and 125 operators in FAA Order 8700.1, "General Aviation Operations Inspector's Handbook."

1071. POI's RESPONSIBILITIES. The principal operations inspector (POI) is the primary FAA official responsible for the overall process of administering, evaluating, and approving an operator's MEL. It is essential that the POI work with the principal maintenance inspector (PMI), the principal avionics inspector (PAI), and other individuals or groups involved in this process. Should the POI require additional TECHNICAL information related to a specific MEL ITEM, he or she should consult the Flight Operations Evaluation Board (FOEB) chairman responsible for the aircraft.

1073. DEFINITIONS. The following definitions are used throughout this chapter:

A. Aircraft Evaluation Group (AEG). The AEG is the Flight Standards point of contact with aircraft certification and is responsible for the development, revision and publication of an MMEL for those aircraft within its area of responsibility.

B. Airplane Flight Manual (AFM)/Rotorcraft Flight Manual (RFM). The approved flight manual is the document approved by the responsible FAA aircraft certification office (ACO) during type certification. The approved flight manual for the specific aircraft is listed on the applicable type certificate data sheet. The approved flight manual is the source document for operational limitations and performance parameters for an aircraft. The term, approved flight manual, can apply to either an AFM or an RFM. The FAA requires an approved flight manual for aircraft type certification.

C. The Aircraft Maintenance Manual (AMM). The AMM is the source document for aircraft maintenance procedures. The term AMM can apply to either an airplane or a rotorcraft manual. The FAA requires an AMM for aircraft certification.

D. Air Transportation Division Bulletin Board System (BBS). The Air Transportation Division operates an electronic BBS that is available to the public and all FAA elements. The BBS was established to provide MMEL policy information and cur-

rent MMEL's to the public. The BBS is accessible to anyone with a standard personal computer and modem. The BBS will accept data communication at up to 14,400 baud on 4 data lines simultaneously. The telephone number for the BBS is (202) 267-5231.

E. Air Transport Association of America (ATA) Specification 100. ATA Specification 100, Manufacturer's Technical Data, is an international industry numbering standard developed to identify systems and components on different aircraft in the same format and manner.

F. Configuration Deviation List (CDL). Aircraft certified under the provisions of Civil Air Regulations (CAR) 4b, FAR Parts 23 or 25, and intended for use under FAR Parts 121 or 135 may be approved for operations with missing secondary airframe and engine parts. The aircraft source document for such operations is the CDL. The ACO grants approval of the CDL under an amendment to the type certificate. For U.S.-certificated aircraft, the CDL is incorporated into the limitations section of the approved flight manual as an appendix.

G. Flight Operations Evaluation Board (FOEB). An FOEB is a board of FAA personnel assigned for each type of aircraft. The FOEB is composed of FAA personnel who are operations, avionics, airworthiness, and aircraft certification specialists. The FOEB develops an MMEL for a particular aircraft type under the direction of the AEG and the Air Transportation Division, AFS-200.

H. Flight Operations Policy Board (FOPB). The FOPB develops FOEB and flight standardization board (FSB) policy recommendations, which are approved by the Air Transportation division manager.

I. Inoperative. Inoperative means that a system or component has malfunctioned to the extent that it does not accomplish its intended purpose and/or is not consistently functioning normally within its approved operating limits or tolerances.

J. Master Minimum Equipment List (MMEL). The MMEL is a list of equipment that the FAA has determined may be inoperative under certain operational conditions and still provide an acceptable level of safety. The MMEL contains the conditions, limitations and procedures required for operating the aircraft with these items inoperative. The MMEL is used as a starting point in the development and review of an individual operator's MEL.

K. MMEL Subsystem. The MMEL Subsystem is a computerized component of the Aviation Safety Analysis System (ASAS), which automates the process of creating, revising, approving, and distributing MMEL's.

L. Minimum Equipment List (MEL). The MEL is derived from the MMEL and is applicable to an individual operator. The operator's MEL takes into consideration the operator's particular aircraft configuration, operational procedures and conditions. When approved and authorized for use, the MEL permits operation of the aircraft under specified conditions with certain inoperative equipment.

M. Proposed Master Minimum Equipment List (PMMEL). The PMMEL is a list developed by the manufacturer or operator that is submitted to the FOEB as a basis for the development of an MMEL.

1075. PURPOSE OF MEL. The FAR permits the authorization of an MEL if the Administrator finds that compliance with all the aircraft equipment requirements is not necessary in the interest of safety for a particular operation. Through the use of appropriate conditions or limitations, the MEL provides for improved scheduled reliability and aircraft utilization with an equivalent level of safety. This process is possible because of the installation of additional and redundant instruments, equipment and/or systems in present transport aircraft. Without an approved MEL, inoperative equipment would ground the airplane until repair or replacement of the nonfunctioning equipment. An MEL is approved for a specific make and model of aircraft, and the use of it is authorized by its operations specifications (OpSpecs).

1077. ITEMS LISTED ON THE MEL. There are three categories of items that may be contained in the operator's MEL:

- MMEL items
- Passenger convenience items
- Administrative control items

A. MMEL Items. The MEL will list all of the MMEL items for which the operator seeks relief and that are appropriate for its operation. The operator, by not listing at its discretion certain items in its MEL, may be more restrictive than permitted by the MMEL.

B. Passenger Convenience Items. The passenger convenience items, as contained in the operator's approved MEL, are those related to passenger convenience, comfort, or entertainment, such as, but not limited to, galley equipment, movie equipment, in-flight phones, ashtrays, stereo equipment, and overhead reading lamps. It is incumbent on the operator and the POI to develop procedures to ensure that those inoperative passenger convenience items are not used. Passenger convenience items do not have fixed repair intervals. Items addressed elsewhere in the MMEL shall not be authorized relief as a passenger convenience item. "M" and "O" procedures may be required and should be developed by the operator,

approved by the POI, and included in the air carrier's appropriate document.

C. Administrative Control Items. An operator may use an MEL as a comprehensive document to control items for administrative purposes. In such cases, the operator's MEL may include items not listed in the MMEL; however, relief may not be granted for these items unless conditions and limitations are contained in approved documents other than the MMEL or meet the regulatory requirements of the FAR. Examples of items considered to be administrative control items would be cockpit procedure cards, medical kits, delaminated windshields, and life vests.

1079. TIMELY REPAIR OF ITEMS THAT ARE INOPERATIVE. The MEL is intended to permit the operation of an aircraft with certain inoperative items for a limited period of time until repairs can be accomplished. The operator is responsible for establishing a controlled and effective repair program.

A. Repair Interval. Operators must make repairs within the time period specified by the MEL. Although the MEL might permit multiple days of operation with certain inoperative equipment, operators must repair the affected item as soon as possible.

B. Day of Discovery. The day of discovery is the calendar day an equipment malfunction was recorded in the aircraft maintenance log or record. This day is excluded from the calendar days or flight days specified in the MMEL for the repair of an inoperative item of equipment. This provision is applicable to all MMEL items, such as categories "A," "B," "C," and "D." The operator and the POI must establish a reference time in which the calendar day or flight day begins and ends 24 hours later. This reference time is established to ensure compliance with timely repair of equipment and items.

C. MMEL Definitions. More than one set of MMEL definitions exist due to years of evolving changes during which not all MMEL's have been updated to the latest revision of the definitions. However, only one set of definitions may be used with a specific MMEL. The most up-to-date definitions reside in Flight Standards Policy Letter 25 and may be obtained off the AFS-200 BBS. Only certain portions of the latest definitions may be appropriate for a specific air carrier's MEL. Definitions found in global changes, such as administrative control and repair intervals, may be adopted by the operator.

D. Continuing Authorizations. Approval of an MEL authorizes an operator to use a continuing authorization to approve extensions to the maximum repair interval for category "B" and "C" items, provided the responsible Flight Standards District Office (FSDO) is notified within 24 hours of the operator's exercise of extension authority. The certificate holder is not authorized to extend the maximum repair time for category "A" and "D" items, as specified in the approved MEL. Misuse of the continuing authorization may result in an amendment of the operator's OpSpecs by removing the operator's authority to use an MEL.

1081. RECORDKEEPING. When an item of equipment becomes inoperative, the operator must report it by making an entry in the aircraft maintenance record, as prescribed by FAR Parts 121 and 135.

1083. MULTIPLE ITEMS THAT ARE INOPERATIVE. Individual MEL requirements are designed to provide coverage for single failures en route. When operating with multiple inoperative items, the operator should consider the interrelationships between those items and the effect on aircraft operation and crew workload, including consideration of a single additional failure occurring en route.

1085. FLEET APPROVAL. An operator who has a single MEL for multiple aircraft may reflect equipment in its MEL that is not installed on all aircraft in its fleet. In this case, the item's title in the operator's MEL need not reference any specific airplane identification (usually registration number) unless the operator determines that there is need to do so. See AFS-200 Policy Letter 70 for additional information.

1087. MEL REVISIONS. Refer to section 2.

1089. ACCESS TO MEL. The FAR require that the MEL be carried aboard the aircraft or that the flightcrew have direct access to the MEL information prior to flight. Other means of direct access require approval.

1091. CONFLICT WITH OTHER FAA-APPROVED DOCUMENTS. The MEL may not conflict with other FAA-approved documents such as the approved flight manual limitations and airworthiness directives (AD). The operator's MEL may be more restrictive than the MMEL, but under no circumstances may the operator's MEL be less restrictive.

1092.–1104. RESERVED.

[PAGES 4-564 THROUGH 4-576 RESERVED]

CHAPTER 4. MINIMUM EQUIPMENT LISTS (MEL) AND CONFIGURATION DEVIATION LISTS (CDL)

SECTION 2. MASTER MINIMUM EQUIPMENT LISTS (MMEL) DEVELOPMENT AND APPROVAL PROCESS

1105. GENERAL. This section contains information for aviation safety inspectors (ASI) concerning the development, approval, and revision process of MMEL's.

1107. PROPOSED MASTER MINIMUM EQUIPMENT LIST (PMMEL). The first requirement for producing an initial MMEL is the development of a PMMEL that reflects the manufacturer's or operator's concepts of which items can be inoperative. The FAA encourages the aircraft manufacturer to develop a PMMEL during the aircraft certification process. The aircraft manufacturer coordinates with the aircraft evaluation group (AEG) and the aircraft operators throughout the PMMEL development process. Manufacturers and operators seeking consideration for relief for operating with certain items of equipment inoperative must provide supporting documentation that sufficiently substantiates their request. In addition to including an evaluation of the potential outcome of operating with items that are inoperative, this documentation should consider the subsequent failure of the next critical component, the interrelationships between items that are inoperative, the impact on approved flight manual procedures, and the increase in crew workload. The PMMEL must not conflict with the approved flight manual limitations, configuration maintenance procedures (CMP), or airworthiness directives (AD). The PMMEL should specify suitable limitations in the form of placards, maintenance procedures, crew operating procedures, and other restrictions as necessary to ensure an acceptable level of safety. To substantiate these considerations, the manufacturer must provide demonstrations that include evaluation flights as necessary. AEG participation or observation in demonstration flights may be required and should be scheduled in conjunction with the certification test program or the Flight Standardization Board's (FSB) operational evaluation, whenever possible. The PMMEL, which is submitted to the AEG for review, is developed by the manufacturer in a format acceptable to the Administrator.

1109. INITIAL MMEL APPROVAL PROCESS. To initiate the MMEL approval process, the AEG schedules Flight Operations Evaluation Board (FOEB) meetings to review and evaluate the PMMEL for technical accuracy and acceptability. Interested parties, such as the manufacturer, operators, and interested aviation community representatives, are invited to participate in these meetings. The FOEB discusses each PMMEL item with the interested participants and recommends approval, modification or disapproval for each item. If consensus cannot be reached, an item may be held open for further consideration or until more information is gathered. The manufacturer or operator must resubmit, with additional justification, items not acceptable or held open by the FOEB. The PMMEL is the initial manufacturer and AEG working document used to develop the draft MMEL and establishes the working relationship between the initial operators and the FOEB chairman. The FOEB chairman arranges to have the draft MMEL on the FAA bulletin board system (BBS) for operator and industry review and then will receive comments within the time period indicated. The FOEB will review and discuss the recommendations and comments and revise the draft MMEL as necessary. After ensuring that the coordination of the draft MMEL with field and industry has been properly completed, the Air Transportation Division, AFS-200, Washington Headquarters, will post the MMEL as approved on the BBS for access by industry for preparing individual operator MEL's.

1111. MMEL REVISION PROCEDURES. While an MEL is approved at the district office level, an MMEL revision is reviewed and approved by the appropriate AEG. An individual operator, the FAA, or industry may request changes to an MMEL. The AEG will consider those items requested by users based on operational considerations that indicate needed relief. Proposed changes that are generated by an operator should be submitted through the principal operations inspector (POI) when the need becomes apparent. Proposed changes are forwarded by the POI,

with recommendations, to the appropriate AEG for consideration at the next scheduled FOEB meeting or electronic FOEB via the BBS approval system. MMEL revisions are either interim, global, or standard. A description of the types of MMEL revisions is contained in section 4 of this chapter. Revisions to the MMEL's are approved in the same manner as initial MMEL's; that is, after the Air Transportation Division has ensured that proper coordination has been completed, they post the revision on the BBS for industry to revise individual MEL's.

1113. LEAD AIRLINE CONCEPT. For certain air carrier airplanes, an air carrier representative will be designated by industry as Lead Airline representative to coordinate with the aircraft manufacturer, other operators, and the FOEB chairman. The purpose of the Lead Airline representative is to expedite the FOEB process and MMEL revision for the affected airplane. The Lead Airline representative will conduct coordination meetings, as required, and will develop the FOEB agenda in a manner acceptable to the FOEB chairman. The Lead Airline representative will also coordinate industry participation at the FOEB meeting and will assist the manufacturer and the FOEB chairman in finalizing the MMEL revision after the meeting.

1114.–1122. RESERVED.

[PAGES 4-579 THROUGH 4-588 RESERVED]

CHAPTER 4. MINIMUM EQUIPMENT LISTS (MEL) AND CONFIGURATION DEVIATION LISTS (CDL)

SECTION 3. MEL APPROVAL PROCESS

1123. GENERAL. This section contains specific direction, guidance, and procedures to be used by aviation safety inspectors (ASI) when evaluating and approving MEL's. The operator's MEL is developed by the operator from the appropriate master minimum equipment list (MMEL), then approved by the Federal Aviation Administration (FAA). The FAA approval process for an MEL follows the general process for approval or acceptance described in volume 1, chapter 4, section 6, of this handbook. This section contains an expansion of the FAA approval process for the MEL.

1125. MEL ACCEPTABILITY. The general criteria for MEL acceptability are as follows:

A. Equally or More Restrictive. The operator's MEL must not be less restrictive than the MMEL, the Federal Aviation Regulations (FAR), the operations specifications (OpSpecs), the approved flight manual limitations, certification maintenance procedures, or airworthiness directives (AD).

B. Appropriate. The MEL must be appropriate to the individual aircraft make and model.

C. Specific. The operator's operations ("O") and maintenance ("M") procedures must be specific to the aircraft and the operations conducted.

D. Applicability. An MEL should be applicable for the FAR under which the operator is certificated.

1127. INITIAL PHASE OF MEL APPROVAL. In this phase of the MEL approval process, the operator should consult with the principal operations inspector (POI) regarding requirements for either developing an MEL or for revising an existing MEL. The POI should consult with and seek the participation of the principal maintenance inspector (PMI) and the principal avionics inspector (PAI) during the entire approval process. During the review of the "O" and "M" procedures, the POI, PMI, and PAI may consult with the Flight Operations Evaluations Board (FOEB) chairman as necessary concerning specific procedures. When the FOEB chairman determines that additional engineering support is necessary, the FOEB chairman will contact the appropriate aircraft certification office (ACO) and provide that information to the POI.

A. Operator Familiarization. In phase one of the MEL approval process, the POI should determine the scope of the task, based on the operator's experience with MEL's. POI's should adapt the discussion to fit the operator's needs and experience, and should provide advice and guidance to the operator as necessary. POI's must ensure that the operator clearly understands that MEL document preparation is solely the operator's responsibility.

B. Required Document Submittal. POI's should advise the operator that, for an MEL to be approved, the following documents must be submitted:

- The proposed MEL or MEL changes
- Necessary "O" and "M" procedures, which may be based on the aircraft manufacturer's recommended procedures, Supplemental Type Certificate (STC) modifier's procedures, or equivalent operator procedures
- A description of the MEL management program and its procedures as required by paragraph D95 of the OpSpecs, unless an MEL management program is already in place
- Any required guidance material developed by the operator, such as training material, guidance, and deferral procedures for both maintenance and operations personnel

NOTE: Several manufacturers have produced manuals of recommended procedures for operating with inoperative equipment. The Lockheed and McDonnell Douglas MEL Procedures Manual and the Boeing Dispatch Deviation Guide (DDG) are examples of these manuals. FAR Parts 23 and 27 manufacturers normally do not publish procedures manuals. When a manufacturer's recommended procedures exist, operators may use them or may develop alternate procedures. When contract services are used to develop the operator's MEL along with acceptable "O" and "M"

procedures, the principal inspectors should review the "O" and "M" procedures in light of the type of operations being conducted and should ensure the acceptability of the procedures. The principal inspectors should ensure that the developed MEL procedures can be adequately implemented by the operator.

C. Materials Provided to the Operator. A computer copy of the MMEL is accessible to Flight Standards District Offices (FSDO) through the Master Minimum Equipment List Subsystem (MMEL Subsystem) as discussed in section 5 of this chapter. However, it is preferred that the operators obtain a copy of the MMEL by computer and modem directly from an MMEL bulletin board. If the MMEL is furnished to the operator on computer disk, the MMEL should be in standard ASCII (DOS text) format. This allows the operator to use different word processing packages and different types of computers when editing the document. The POI should provide the operator with one of the following:

- The access number of the Flight Standards bulletin board system for direct computer modem access to the MMEL and related information; or
- A computer disk containing the appropriate MMEL (computer disk to be provided by the operator); or
- A hard copy of the MMEL document and appropriate guidance material (as a last resort)

D. Document Form. The operator may submit MEL draft documents to the FAA either on hard copy (printed on paper) or on computer disk, as mutually agreed upon between the operator and the POI. The operator and the POI should discuss the techniques that will be used for revising and editing the proposed document. It is important that the operator understand that when the process is complete, the final proposed MEL must be submitted on paper unless otherwise approved by the Administrator.

E. MEL Format. The MMEL format has been standardized to facilitate the development, revision, and approval of both master and operator documents. While the master document contains eight total sections, six of these sections are considered basic for MEL development and should be included in each operator's MEL. Refer to paragraph 1129B(6) for a detailed list of each MMEL section and whether or not it should be included in the operator's MEL.

F. Generic Single-Engine MMEL's. A generic MMEL for single-engine aircraft was developed and published by the FAA. This MMEL is applicable to all single-engine airplanes and helicopters for which a specific MMEL has not been issued. When an operator is approved to use this generic MMEL, and a specific MMEL for the individual aircraft type is subsequently issued, the operator's MEL must be revised within the specified time frame to conform to the specific MMEL.

1129. FINAL PHASE OF MEL APPROVAL PROCESS. The final phase begins when the operator formally submits the proposed MEL or MEL changes to the POI. The POI should initially review the operator's submittal to verify that it is complete, contains the required elements, as listed in paragraph 1129B(6) of this section, and is detailed enough to permit a thorough evaluation of the MEL.

A. Unacceptable Submittal. If the POI finds the proposed MEL package to be incomplete or unacceptable at this time or at any other juncture in the approval process, the POI should contact the operator. A sample letter is provided in figure 4.4.3.1. If a mutually acceptable correction cannot be immediately agreed upon, the entire package must be immediately returned to the operator, or its representative, along with an explanation of the problems found within the documents.

B. Acceptable Submittal. If the POI finds the proposed MEL package to be complete and to contain the required information in an acceptable format, the detailed analysis begins. During this analysis, the POI should coordinate with the PMI and the PAI to perform a detailed examination of the proposed MEL document and other supporting documents and procedures. If the operator does not currently have an MEL program, its MEL management program must also be reviewed for acceptability. Inspectors should examine the technical content and quality of the proposed MEL document and other supporting documents and procedures as follows.

(1) Timely Review. POI's should promptly address all deficiencies and notify the operator of any discrepancies or outstanding issues. The POI and the operator may informally coordinate by telephone to clarify minor discrepancies or misunderstandings.

(2) Reference Material. Inspectors should use the MMEL as the primary reference document when reviewing and approving the MEL. In addition, inspectors should use the following references:

- Related FAR
- Appropriate advisory circulars (AC)
- Approved flight manual
- Operator's OpSpecs
- Operator's manuals

- MMEL policy letters

(3) Coordination with Technical Groups. During this phase, the POI may wish to coordinate with the appropriate aircraft evaluation group (AEG) for guidance. Inspectors should refer to volume 8, chapter 3, of this handbook for information on the technical guidance available through the AEG.

(4) Document Deficiencies. Refer to paragraph 1129A of this section.

(5) Change in Schedule. If certain MMEL items must be addressed within a specific time frame, the POI should notify the operator of this requirement as soon as possible. If the operator is unable to meet these schedule requirements, the POI should negotiate a new schedule with the operator.

(6) MEL Evaluation. Inspectors should compare the operator's MEL changes against the corresponding items in the current MMEL for the specific aircraft type. In addition, inspectors should verify that the operator's MEL contains the following required items:

(a) Cover Page (Optional). The MEL cover page contains the operator's name and the make and model of the aircraft to which the MEL applies.

(b) Table of Contents (Required). The table of contents contains a list of all of the pages in the MEL by title and the corresponding page identification (usually a page number).

(c) Log of Revisions (Required). The log contains the revision identification (usually a number) and date of the revision. It may also contain a list of the revised pages, a block for the initials of the person posting the change, and additional enhancements for use by the operator.

(d) Preamble and Definitions (Required). The standard MMEL preamble and definitions section must be reproduced word-for-word in each MEL, without modification, except as specified in Flight Standards Policy Letters 25 and 70.

(e) Control Page (Required). The control page is used as a method for keeping track of the status of the MEL and includes a record of the revision status or the date of each page of the operator's MEL. It may also be used as a means of conveying FAA approval of the MEL.

1. Minimum Contents. At a minimum, the control page must contain the following:

- The operator's name
- A listing of all of the pages in the MEL (including the date of each page and its page number or revision number)
- The MMEL revision number on which the MEL is based
- A signature block containing space for signature of the POI (only if this page is used as a means of conveying FAA approval of the MEL)

2. Optional Contents. The operator may include additional information on the control page to provide flexibility and additional approval functions.

3. Highlights of Change Page (Optional). This page contains a synopsis of the changes made by the operator in each revision.

(f) Additional Items. The operator may include additional information sections in excess of the six FAA sections.

(7) Individual Air Transport Association of America (ATA) System Page Evaluation. These pages contain a list of individual items of equipment in the aircraft together with provisions for the operation of the aircraft when the items are inoperative. The reviewing inspector should examine the individual ATA system pages, ensuring that the MEL is at least as restrictive as the MMEL and that operator's procedures are adequate and appropriate. The inspector should also examine the material contained on these pages for conflict with the FAR, with the approved flight manual emergency procedures and limitations, and with the operator's OpSpecs. The following elements are included:

(a) The ATA Numbering System. Operators should use the standard ATA numbering system, similar to the manner used in the MMEL, for numbering individual pages in this section. An example of this numbering system would be the communications page; the first page would be 23-1; the second page would be 23-2.

(b) Individual Items of Equipment. The MMEL contains listed items of installed equipment that may be inoperative.

1. MMEL Items not Listed on the Operator's MEL. If items listed on the MMEL are not listed on the MEL there is no relief.

2. MMEL Items Listed on the Operator's MEL. Each piece of equipment that is installed on the aircraft and that is contained in the MMEL, for which the operator seeks relief and that is appropriate for its operation, should be listed on the appropriate page of the operator's MEL within the associated ATA

system. The operator may be more restrictive than permitted by the MMEL by not listing certain items in its MEL. Each item title on the operator's MEL will generally be entered exactly as it is shown on the MMEL. Exceptions include the following:

- When the MMEL uses a generic term to address equipment that serves a similar function but various operators use different names for that equipment; or
- When the MMEL lists functions rather than individual pieces of equipment within that category (Examples include "Navigation Equipment" or "Communications Equipment." In such cases, the MEL must contain a list of the individual equipment or systems within that category that are actually installed on the aircraft, such as "VHF Communications Transceivers." When items of this type consist of several components of a system, the item may be listed as a complete system, such as "VOR Navigation System," consisting of a VOR navigation receiver and its associated indicator. The inspector should ensure that the operator has not listed inappropriate items or items that are listed individually elsewhere in the MMEL. However, the POI is authorized to approve generic MMEL relief for navigation or communication equipment that is appropriate such as ILS, VOR, VHF, HF and GPS.)

3. *Items Listed on the MMEL but not Installed on the Operator's Aircraft.* The POI may follow several acceptable methods of dealing with an item of equipment being listed on the MMEL but not installed on the operator's aircraft. One method is to simply omit the item from the MEL altogether, renumbering individual items within an ATA category as necessary to provide proper continuity. (It should be noted that individual item numbers on a page are not necessarily ATA code numbers, but are simply sequential item numbers within an ATA category.) Another method is to list the item as shown on the MMEL, and to show the Number Installed as zero. In this case, the "Number Required for Dispatch" would also be zero, and the remark "Not Installed" may be noted under "Remarks and Exceptions"; repair category designators should be omitted.

4. *Triple Asterisk Symbol (***).* The triple asterisk symbol is used in an MMEL to indicate that an item is not installed on some models of the aircraft. Operators should not produce or use this symbol in the MEL.

5. *Repair Category.* Each item of equipment listed in the operator's MEL, except for Administrative Control Items and Passenger Convenience Items, must include the repair category designator for that item as shown on the MMEL. These designators, categorized as "A," "B," "C," or "D," indicate the maximum time that an item may remain inoperative before repair is made. The actual repair categories corresponding to these letters are provided in the "Notes and Definitions" section of the MMEL. The operator may choose to adopt a more restrictive repair category than the one shown on the MMEL, but may not relax the requirement. Components or subsystems of items categorized in the MMEL, such as items of communications or navigation equipment that are not listed individually in the MMEL, must retain the repair category shown on the MMEL when listed as separate items on the MEL.

6. *Passenger Convenience Items.* Passenger convenience items relate to the convenience, comfort, and entertainment of passengers and must never affect the airworthiness of the aircraft. These items do not carry a specific repair category; however, the operator should make repairs to convenience items within a reasonable time frame. Normally, the operator lists these items individually in ATA chapters 25 and 38. Passenger convenience items may be included elsewhere in the MEL if clearly identified as passenger convenience items. POI's should review the proposed MEL to decide which passenger convenience items are components of an item appearing in the MMEL. When listing passenger convenience items on the MEL, the operator must list each item for which the operator wishes relief. The operator may make a list of passenger convenience items that, once it is acceptable to the POI, is held at the certificate-holding district office (CHDO). Passenger convenience items also apply to cargo airplanes, as appropriate.

7. *Administrative Control Items.* "Administrative control item" means an item listed by the operator in the MEL for tracking and informational purposes. It may be added to an operator's MEL by approval of the POI, provided no relief is granted, or provided conditions and limitations are contained in an approved document (such as Structural Repair Manual or airworthiness directive (AD)). If relief other than that granted by an approved document is sought for an administrative control item, the operator must submit a request to the Administrator. If the request results in review and approval by the FOEB, the item becomes an MMEL item rather than an administrative control item. Examples of items that

could be considered administrative control items are cockpit procedure cards, medical kits, and life vests. These items should appear in the appropriate ATA chapter and would not have a repair category. When the operator chooses this course of action, the POI must examine each proposed administrative control item on the operator's proposed MEL to ensure that the following conditions are met:

- No item is included as an administrative control item if it is included elsewhere in the MMEL
- Administrative items are not included as a subsystem of items listed in the MMEL
- Administrative items are not granted relief in the MEL unless the release conditions or limitations are contained in another approved document

8. Number of Items Installed. The MEL will normally contain the actual number of items of particular equipment installed on the aircraft. This number may be either greater or less than the number shown on the MMEL. The MMEL shows the number of items installed as the number of those items normally installed on a particular aircraft type. Individual aircraft operated by an operator may have a different number of items. Frequently the MMEL shows a dash in the "Number Installed" column. This dash indicates that a variable quantity of these items are generally installed on the aircraft. If the operator has an MEL for a single aircraft or identical aircraft, the actual number of these items on the particular aircraft must be listed in the MEL. If the operator has an MEL for multiple aircraft, and the equipment is not installed on all aircraft or there is a variable quantity between aircraft, the operator's MEL will not reference specific aircraft identifications; the "Number Installed" column may contain a dash.

9. Number of Items Required for Dispatch. Normally, the number of items required for dispatch is determined by the FOEB and may be modified in the MEL in only two cases:

- When the item is not installed on the aircraft, in which case a zero may be shown as the number required for dispatch
- When the item is shown in the MMEL as being a variable number required for dispatch

NOTE: In this case, the reviewing inspector should ascertain that the operator has made a determination as to the number required for dispatch. There can be several factors that establish this number. In some cases, it is determined by a reference to specific requirements listed in the "Remarks or Exceptions" column of the MMEL. An example would be cabin lights. In this case, the MMEL may show a variable number installed while the "Remarks or Exceptions" column might state that 50 percent of those items be operable. The number required for dispatch would therefore be 50 percent of the number of lights determined to be actually installed on the individual aircraft. Another case where the MMEL may show a variable number required for dispatch is when the "Remarks or Exceptions" column of the MMEL contains the statement, "As Required by FAR." In this case, the number is the minimum quantity of these items that must be installed for operations under the least restrictive regulation under which the operator conducts operations. For example, FAR Part 135 requires two communications transmitters for operating a small airplane as a commuter operator under instrument flight rules (IFR). Only one transmitter is required by FAR Part 135 for on-demand charter operations, and none are required for visual flight rules (VFR) operations when operating outside of controlled airspace. If none are required, the minimum number of transmitters required for dispatch could be zero.

10. "Remarks or Exceptions." Certain items demand specific relief developed by the operator as authorized through OpSpecs, area of operation and FAR. "As required by FAR" is an example of this type of relief.

11. Other Items. Other items in which relief has been specifically written to reflect actions or restrictions to the operation may be changed only when the FOEB chairman makes a change to the MMEL. Generally they contain "O" and "M" procedures in which the operator develops its company procedures to comply with the MEL.

(8) Evaluation of Associated Documentation. The inspector should evaluate the supporting documentation submitted by the operator to ensure that it is complete and appropriate.

(a) The Operator's Manual. Inspectors should evaluate the operator's manual to ensure that it contains adequate guidance for the operator's personnel in conducting operations using the MEL. Generally, if the operator does not presently have an MEL program, the applicable portions of its manual and other guidance material should be submitted at the time the MEL is submitted for initial review. When evaluating the operator's manual, inspectors should use the following guidance:

(b) Documentation Procedures. The procedures for documenting inoperative equipment and any required maintenance release procedures should be clear. At a minimum, provisions for recording the following items should be developed:

- An identification of the item of equipment involved
- A description of the nature of the malfunction
- An identification of the person making the entry
- The MEL item number for the equipment involved

(9) Crew Notification. The operator should establish procedures for advising the pilot-in-command (PIC) of inoperative items and required procedures such as affixing placards, alternate operating procedures, and instructions for the isolation of malfunctions. The PIC and the operator are both responsible for ensuring that flights are not dispatched or released until all of the requirements of the "O" procedures and "M" procedures have been met.

(10) Flight Restrictions. The operator should establish procedures to ensure that dispatch or other operational control personnel, as well as the flight crew, are notified of any flight restrictions required when operating with an item of equipment that is inoperative. These restrictions may involve maximum altitudes, limitations for the use of ground facilities, weight limitations, or a number of other factors.

(11) Training Program Material. Inspectors should ensure that the operator's flight and ground personnel training programs contain adequate instruction for MEL use.

(12) MEL Management Program. The POI should coordinate closely with both the PMI and the operator on the MEL management program. Operators must develop an MEL management program as a comprehensive means of controlling the repair of items listed in the approved MEL. Operators must include a description of the program in their maintenance manual or other documents. The MEL management plan must include the following:

- A method for tracking the date and time of deferral and repair
- The procedures for controlling extensions to maximum repair categories
- A plan for coordinating parts, maintenance, personnel, and aircraft at a specific time and place for repair
- A review of items deferred due to unavailability of parts
- The specific duties and responsibilities of the managers of the MEL management program, listed by job title

1131. TERMS AND CONDITIONS OF RELIEF. This section contains the terms and conditions of relief granted to an operator for operating the aircraft with items of installed equipment that are inoperative. The operator must state the terms and conditions under which operations may be conducted with inoperative items for the operator's particular organization and aircraft. The reviewing inspector must address the following elements of this section:

A. Standard Phraseology. When reviewing the MEL, inspectors should ensure that the operator generally uses the phraseology used in the MMEL to ensure clarity and standardization. In some cases modified phraseology is appropriate for the operator's specific installation. The POI should refer questions about non-MMEL phraseology to the FOEB chairman for resolution.

B. "As Required by FAR." The general term, "As Required by FAR," applies to ATA chapters 23 (Communications), 31 (Instruments), 33 (Lights), and 34 (Navigation Equipment). When this term appears in the "Remarks or Exceptions" section of an MMEL, the operator's MEL must contain the specific conditions that apply. The operator usually must research the applicable regulations in detail to develop the appropriate provisions that apply to that operator's particular operations. An example of a typical distance measuring equipment (DME) remark could read, "Not required for flights below FL 240."

NOTE: The operator's MEL must clearly establish the actual requirement for its operation when the MMEL stipulates "As Required by FAR." It is not acceptable for the MEL to simply refer to the FAR.

C. "O" and "M" Procedures.

(1) "O" and "M" procedures must contain descriptions of the individual steps necessary to accomplish each process. For example, if the MMEL contains an "M" symbol with a provision that a valve must be closed, the operator must include the appropriate procedures to close the valve as part of the operator's manual or MEL. The reviewing inspector must ensure that the procedure addresses the following:

- How the procedure is accomplished
- The order of accomplishing the elements of the procedure

- The actions necessary to complete the procedure

(2) For example, if the MMEL contains an "M" symbol with a provision that a valve must be closed, the operator must include detailed steps and actions for closing and testing the valve and installing the placard. The actual written procedures may be contained within the "Remarks or Exceptions" section of the MEL, in separate documents, or attached as an appendix. Inspectors should consult the Guidelines for "O" and "M" Procedures of the MMEL when evaluating these procedures. The section about the Guidelines for "O" and "M" Procedures does not have to be contained within the operator's MEL. If the "O" and "M" procedures are not contained within the MEL, the MEL should include a reference to the location of the procedures.

NOTE: While inspectors should ensure that the procedures are detailed and explicit, it is not necessary that the operator repeat obvious requirements of the MEL item, of the FAR, or of other established standards.

(3) "O" Procedures. The "(O)" symbol indicates a requirement for a specific operations procedure that must be accomplished in planning for and/or operating with the listed item inoperative. Normally, these procedures are accomplished by the flightcrew; however, other personnel may be qualified and authorized to perform certain functions. The satisfactory accomplishment of all procedures, regardless of who performs them, is the responsibility of the operator. Appropriate procedures are required to be published as a part of the operator's manual or MEL.

(4) "M" Procedures. The "(M)" symbol indicates a requirement for a specific maintenance procedure which must be accomplished prior to operation with the listed item inoperative. Normally these procedures are accomplished by maintenance personnel; however, other personnel may be qualified and authorized to perform certain functions. Procedures requiring specialized knowledge or skill, or requiring the use of tools or test equipment should be accomplished by maintenance personnel. The satisfactory accomplishment of all maintenance procedures, regardless of who performs them, is the responsibility of the operator. Appropriate procedures are required to be published as part of the operator's manual or MEL.

(5) Provisos. The "Remarks and Exceptions" section of the MMEL generally contains provisos that include specific conditions under which an item of equipment may be inoperative. These provisos must be carried over either verbatim into the operator's MEL or by using equivalent terminology. Provisos are distinct from "O" and "M" procedures. A procedure is an action that must be performed. A proviso is a condition that must exist. For a proviso that operations must be conducted under VFR, an operation under an IFR flight plan is not permitted, regardless of the weather conditions. When reference is made to visual meteorological conditions (VMC), operations may be conducted under an IFR flight plan, but only in VMC.

1133. DEMONSTRATION PHASE. A demonstration phase is normally not required for an MEL approval. When an operator is developing an MEL in conjunction with original certification for initial issuance of an operating certificate, or when instituting service with a new aircraft type, a demonstration of the operator's ability to use an MEL may be conducted during any required aircraft proving tests.

1135. POI APPROVAL OF THE OPERATOR'S MEL. After the POI is satisfied that the MEL is in full compliance with all applicable requirements, the POI shall sign the MEL control page or the individual MEL pages to signify approval. If the operator has not previously been authorized to operate under an MEL, the PMI should issue paragraph D95 of the OpSpecs concurrently. The POI may send a letter of approval if desired (figure 4.4.3.2.).

1137. PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) INPUT. The POI should record the initial approval of an MEL on FAA Form 8000-36, "PTRS Data Sheet" using activity code 1321 under "Organizational and Technical Administration." The PTRS should be used to track the MEL approval process from phase one through phase five. After receiving the proposed MEL from the operator, the POI can open a record for the approval and document each phase of the approval process in Section IV of the data sheet by making additional comments when required. Once the MEL is approved, the PTRS is closed with a "C."

1139. FINAL STEP. As the final step in the MEL approval process, the POI enters the operator and MEL information into the Master Minimum Equipment List SubSystem (MMEL Subsystem) as described in volume 4, chapter 4, section 5.

1140.–1148. RESERVED.

FIGURE 4.4.3.1.
EXAMPLE OF LETTER TO OPERATOR DENYING APPROVAL OF MEL

FAA Letterhead

[*date*]

Mr. Robert Smith
Director of Operations
ABC Airlines
1 Park Avenue
New York, NY 11021

Dear Mr. Smith:

This letter is to inform you that the Minimum Equipment List (MEL) submitted for approval on June 6 is being returned to your office. A comparison of ABC's MEL against the current Master Minimum Equipment List (MMEL) shows that in the following places ABC's MEL is less restrictive than the MMEL.

Specifically, these System and Sequence Numbers do not comply with acceptable procedures:

1. Page 24-1, item 3. DC Loadmeter
2. Page 28-1, item 1. Boost Pumps
3. Page 30-3, item 13. Pitot Heater

Additionally, ABC's MEL does not include the required Control Page.

If you have further questions on the MEL approval process, please feel free to contact me.

Sincerely,

John Doe
Principal Operations Inspector

FIGURE 4.4.3.2.
EXAMPLE OF LETTER TO OPERATOR APPROVING AN MEL

FAA Letterhead

[*date*]

Mr. Robert Smith
Director of Operations
ABC Airlines
1 Park Avenue
New York, NY 11021

Dear Mr. Smith:

This letter is to inform you that the Minimum Equipment List (MEL) submitted for approval on June 6 has been approved. The control page has been signed and paragraph D95 of the Operations Specifications has been issued.

Sincerely,

John Doe
Principal Operations Inspector

[PAGES 4-598 THROUGH 4-608 RESERVED]

CHAPTER 4. MINIMUM EQUIPMENT LISTS (MEL) AND CONFIGURATION DEVIATION LISTS (CDL)

SECTION 4. MEL USE IN SERVICE

1149. GENERAL. This section contains specific direction, guidance, and procedures for aviation safety inspectors (ASI) on the revision, administration, and policy application for administering MEL's that have been approved for use by air carriers operating under the provisions of Federal Aviation Regulations (FAR) Parts 121, 129, and 135.

1151. REVISION PROCEDURES.

A. Revisions to an MEL. Revisions to an operator's MEL may be initiated by either the operator or the FAA. Operator-initiated revisions may be equal to or more restrictive than the Master Minimum Equipment List (MMEL). It is not necessary for an operator to submit an entire MEL when requesting the approval of a revision. The minimum submission would consist of only the affected pages; the approval by the principal operations inspector (POI) may only consist of specific items. These items are approved within a controlled process, and the carrier will produce the final MEL document. If the revision results in individual pages either being added or deleted, a revised table of contents page is also required. The issuance of an airworthiness directive (AD) will not be the basis for change to an operator's MEL. Instead, AD's will be referred to the Flight Operations Evaluations Board (FOEB) chairman for appropriate changes to the MMEL.

NOTE: When operations ("O") or maintenance ("M") procedures are required per the MMEL, it is the operator's responsibility to develop appropriate procedures or to use manufacturer-developed procedures in order to meet the requirements for inclusion of the item on the MEL. The POI is not authorized to grant MEL relief unless acceptable "O" and "M" procedures are provided by the operator.

B. MEL Revision Initiated by an Operator. An operator-initiated MEL revision will normally fit into one of the following three categories:

(1) Items Not Requiring an MMEL Change. Operators may propose changes to an MEL that are equal to, or more restrictive than, the MMEL. These revisions are approved by the POI using the same procedures as those required for an original MEL approval.

(2) Items Requiring an MMEL Change. Operators may request changes to an MEL that are less restrictive than the MMEL. However, the MEL cannot be revised until the MMEL has been revised to permit the proposed MEL change. The most common instance of a revision request of this type occurs when an operator installs additional equipment on an aircraft and provisions for that equipment are not included on the current MMEL.

(3) Major Aircraft Modifications. Major aircraft modifications, such as a supplemental type certificate (STC), a major alteration (FAA Form 337, "Major Repair and Alteration") or a type certificate (TC) amendment, may invalidate the MEL for that aircraft. Operators should review the MEL to assess the impact of any planned modification and should immediately notify the POI of these modifications and the impact on the MEL. The POI should obtain guidance from the appropriate aircraft evaluation group (AEG) to determine if a revision to the MMEL is required.

C. MEL Revisions Initiated by the FAA. When the FAA revises an MMEL, operators, manufacturers, and certificate-holding district offices (CHDO) receive notification by a postcard generated by the automated Master Minimum Equipment List Subsystem (MMEL Subsystem).

(1) Non-Mandatory Revision. MMEL revisions that only provide additional relief are reflected by a lower case letter suffix following the MMEL numeric revision number; for example, MMEL Revision No. 8 would become Non-Mandatory Revision No. 8a. Any MMEL changes that are less restrictive than the operator's MEL may be ignored by the operator. An example of a non-mandatory revision is when the MMEL has been revised to provide for optional equipment normally not installed on all aircraft of a particular type, such as logo lights. Operators that

operate aircraft with logo lights may choose to revise the MEL's, while operators operating without logo lights would not.

(2) Global Change. A global change is another type of non-mandatory revision. A global change generally applies to items of equipment that are required to be installed by a new regulatory requirement, such as a cockpit voice recorder (CVR), or a traffic alert and collision avoidance system (TCAS). Items affected by FAA policy decisions, such as Observer Seat Notice N8430.409, are also global changes. The global change does not replace the normal MMEL revision process (section 2 of this chapter). When a standard revision to an MMEL is issued, it will include all global changes issued to date. However, since the process for revising the MMEL can be lengthy, and the operator's MEL must be based on the MMEL, a global change will allow an operator to revise its MEL prior to the change in the MMEL. The POI has the authority to approve the operator's MEL revision on the basis that the global change is an approved addendum to the existing MMEL. Availability of global changes will be transmitted to Flight Standards District Offices (FSDO) via FAA.MAIL. A list of global changes can also be obtained through the MMEL Subsystem (see section 5 of this chapter for guidance).

(3) Mandatory Revisions. Mandatory changes, which are more restrictive and may remove relief from the current MMEL, are reflected by the next successive change to the basic MMEL revision number itself. For example, the next mandatory revision following the non-mandatory revisions 6a, 6b, or 6c would be revision 7. Any MMEL changes that are more restrictive than the operator's MEL will be implemented by the operator as soon as possible. In some cases when relief is removed from the MMEL, there will be a specific date for compliance, or guidance for an acceptable date to be negotiated between the POI and the operator.

(4) POI-Initiated Revision. A POI may initiate an MEL revision that is not based on a revision to the MMEL. The POI should make such a request to the operator in writing, stating specific reasons why the revision is necessary. A POI-initiated revision may be made upon the discovery that an operator has modified an aircraft or that faulty maintenance or operations procedures exist. The POI should work closely with the operator and make every effort to resolve the matter in a mutually agreeable manner. The operator should be given a reasonable time period to make the required changes depending on whether safety of flight is affected. In the event that the operator declines to make the required change, the POI may consult with the PMI to initiate an amendment of the operator's OpSpecs to rescind the authority for the MEL. In such a case, the procedures contained in volume 3, chapter 1, section 7, of this handbook should be followed.

D. Modifications Within a Fleet. If an operator has been granted approval to use the MEL for a fleet, and the operator installs a new piece of equipment in one or more aircraft, the operator may continue to operate that aircraft under the provisions of the currently approved MEL. The operator may not defer repair of the new item until an appropriate revision to the MEL has been approved.

1153. TRACKING OF REVISION STATUS. POI's shall maintain a copy of the current MEL for each assigned operator's aircraft type. The POI shall update the MMEL Subsystem to record and track the revision status of the operator's MEL (see section 5 of this chapter).

1155. AVAILABILITY OF MEL FOR FLIGHT CREWMEMBERS. FAR Parts 121 and 135 require that flight crewmembers have direct access to the MEL at all times prior to flight. Although not required, the easiest method of compliance with this requirement is for the operator to carry the MEL aboard each aircraft. The operator may choose to use some system of access to the MEL other than the MEL document. For example, the flightcrew may obtain access to the MEL through the ARINC Communications Addressing and Reporting System (ACARS). The critical element in approving an alternate form of access is whether or not the flightcrew has a direct means of access to the appropriate information in the MEL, specifically "O" and "M" procedures. Direct access should not be construed to mean access through telephone or radio conversations with maintenance or other personnel. If the operator chooses to provide the flightcrew with access to the MEL by other than printed means, the method must be approved in the operator's MEL program.

1157. METHOD OF AUTHORIZING FLIGHT CREWMEMBER ACCESS TO MEL. POI's may approve a method other than printed means for providing the flight crew with access to the MEL as provided in FAR § 121.628(a)(2) and FAR § 135.179(a)(2). Before authorizing such a method, the POI must be confident that the operator has an adequate means in place to provide flightcrews with the complete equivalent of the actual text of the MEL. This method must be described in detail in the operator's FAA-accepted general operating manual or equivalent. When the decision is made to authorize this alternative method, the POI should use appropriate provisions. In this case, the "Applicable FAR Section" of the OpSpecs would

be either FAR § 121.628 or FAR § 135.179, as appropriate, and the "Remarks and/or References" section would refer to the appropriate section of the operator's manual.

1159. DISCREPANCIES DISCOVERED DURING FLIGHT. Use of the MEL is not applicable to discrepancies or malfunctions that occur or are discovered during flight. Once an aircraft moves under its own power, the flightcrew must handle any equipment failure in accordance with the approved flight manual. A flight is considered to have departed when the aircraft moves under its own power for the purpose of flight. Discrepancies occasionally occur between the time the flight departs and the time it takes off. If the flight manual contains procedures for handling that discrepancy, or if the pilot-in-command (PIC) deems that the discrepancy does not affect the safety of flight, the flight may continue. The discrepancy must be addressed prior to the next departure. For those operators who are required to use a dispatch or flight release, the PIC must handle a discrepancy that occurs after the issuance of the release, but before the flight departs, in accordance with the MEL. The PIC must obtain a new or amended dispatch or flight release, as well as any required airworthiness release. This new or amended release must contain any applicable flight restrictions necessary for operation with any item of equipment that is inoperative. (See paragraph 1161 in volume 3, chapter 6, section 1, "Operational Control.")

1161. DOCUMENTATION OF DISCREPANCIES. Provisions of the MMEL preamble require that an airworthiness release be issued or an entry be made in the aircraft maintenance record or logbook prior to conducting any operations with items of equipment that are inoperative. FAR Part 121 operators and those FAR Part 135 operators who use a Continuous Airworthiness Maintenance Program (CAMP) generally require the use of a formal airworthiness release issued by an authorized maintenance person. Other FAR Part 135 operators must have adequate methods for recording the authorization to operate the aircraft with items of equipment that are inoperative. This does not imply that the involvement of an FAA-certified mechanic or other person authorized under FAR Part 43 to approve an aircraft for return to service is required in all cases. Unless maintenance actions are performed on the aircraft, FAR Part 135 flightcrews may make appropriate documentation in the aircraft maintenance log required by FAR § 135.65.

1163. CONFLICT WITH AIRWORTHINESS DIRECTIVES. Occasionally an AD may apply to an item of equipment that may be authorized to be inoperative under the MEL. The item may not simply be deferred under the MEL in order to avoid or delay compliance with the AD or an FAA-approved alternate means of compliance with the AD. In all cases, when an AD has been issued, the operator must comply fully with the terms of the AD or an FAA-approved alternate means of compliance with the AD. The FAA must approve any alternative method of compliance with the AD as provided in the AD. In other cases, the provisions of an AD may allow operation of the aircraft on the condition that certain items of installed equipment be used or be operable. In those cases, the affected items must be operable even though the MEL may provide for deferral of repair.

1165. INTERRELATIONSHIPS OF INOPERATIVE COMPONENTS. When the MEL authorizes a component of a system to be inoperative, only that component may be affected. When a system is authorized to be inoperative, individual components of that system may also be inoperative. Any warning or caution systems associated with that system must be operative unless specific relief is authorized in the MEL. The operator must consider the interrelationship of inoperative components. This consideration must include the following:

- The interrelationship of one piece of equipment on another
- The crew workload
- The operation of the aircraft
- The flight restrictions

1167. REPAIR CATEGORIES. When an item of equipment becomes inoperative, and repair is deferred under an MEL, the operator must make repairs as specified by the associated repair category designator ("A," "B," "C," or "D") and the operator's MEL management system. In the event that more items are installed then those that are required for normal operation, the "C" repair category may be used. For example, if one altitude alerting system is required and the associated repair category is "B," but there are two such systems installed, failure of the first system could be deferred as specified for a "C" category item (10 days). Failure of the remaining system would limit at least one system to the repair category for the "B" category item (3 days). See the definitions section of the MMEL for an explanation of repair categories.

1169. PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) INPUT. Operations inspectors should use activity code 1322 to record each MEL revision into the PTRS. The inspector keeping the record open until the revision is approved should document the revision process in the PTRS.

1170.–1180. RESERVED.

[PAGES 4-613 THROUGH 4-622 RESERVED]

CHAPTER 4. MINIMUM EQUIPMENT LISTS (MEL) AND CONFIGURATION DEVIATION LISTS (CDL)

SECTION 5. MASTER MINIMUM EQUIPMENT LIST SUBSYSTEM (MMEL Subsystem)

1181. BACKGROUND. The Federal Aviation Administration (FAA) created the MMEL Subsystem to automate the process of creating, revising, approving, and distributing Master Minimum Equipment Lists (MMEL).

1183. GENERAL. The MMEL Subsystem is a component of the Aviation Safety Analysis System (ASAS). The MMEL Subsystem primarily provides information to Flight Standards personnel on the status of approved MMEL's. This section contains information, direction, and guidance for inspectors on the use of the MMEL Subsystem.

1185. SYSTEM CAPABILITY. The MMEL Subsystem is capable of the following:

- Allowing MMEL's to be accessed on-line, downloaded, or printed
- Providing a means of automatically notifying inspectors and operators when a revision to an MMEL occurs (Those revisions may require an operator to revise its MEL.)
- Printing or reviewing copies of global changes to MMEL's on-line
- Allowing an inspector to generate various types of reports concerning the status of an operator's MEL
- Providing access to information that an inspector may use when evaluating documents such as an MEL and flightcrew training programs, to include the following reports and information:
  - Flight Operations Evaluation Board (FOEB) reports
  - Flight Standardization Board (FSB) reports and training requirements
  - Maintenance Review Board (MRB) reports
  - Pilot type rating information
  - MMEL policy book
  - Advisory circulars (AC)
  - Listing of MEL coordinators
  - Certification Maintenance Procedures (CMP)

1187. SYSTEM ACCESS INSTRUCTIONS AND SUPPORT. The MMEL Subsystem is accessed through a menu option on the ASAS menu in the same manner as the Integrated Safety Information Subsystem (ISIS) and the National Aircraft Registry Information System (NARS). The MMEL Subsystem User's Manual contains specific instructions for the use of the system. Each Flight Standards District Office (FSDO) should maintain this document as a reference. The users manual can be accessed or printed on-line, from the "References" option on the "MMEL Main Menu."

1189. AUTOMATIC NOTIFICATION. After granting the final approval of an MEL or a revision, inspectors must access the MMEL Subsystem to enter data about the operator and its approved MEL. The MMEL Subsystem uses this information to automatically notify operators and certificate-holding district offices (CHDO) of MMEL changes by postcard.

1191. MEL STATUS REPORTS. MEL status reports can be generated based on the information entered about an operator for the postcard notification process. These reports are useful for determining the status of an operator's MEL and for planning surveillance activities. This reporting function can also be used to determine which CHDO's have approved an MEL for a particular make and model of aircraft. This information also allows inspectors to consult with one another about problems they may encounter while approving an MEL.

1193. GLOBAL CHANGES. Copies of global changes can be printed or reviewed on line. Access is gained through the "MMEL Policy Book" option on the "MMEL Main Menu." AFS-260 maintains a current list of global changes and policy letters on the AFS-200 Bulletin Board Service (BBS) for access by all interested parties.

1195. PUBLIC ACCESS TO MMEL. The general public is allowed access to MMEL-related docu-

ments through FAA bulletin boards. Access to the bulletin boards requires a computer with telecommunications capability (modem). MMEL files on some bulletin boards may be compressed to allow for reduced transmission time (such bulletin boards require an IBM-compatible computer). Inspectors may obtain current bulletin board telephone numbers from the regional MEL coordinator.

1196.–1206. RESERVED.

[PAGES 4-625 THROUGH 4-636 RESERVED]

CHAPTER 4. MINIMUM EQUIPMENT LISTS (MEL) AND CONFIGURATION DEVIATION LISTS (CDL)

SECTION 6. CONFIGURATION DEVIATION LISTS

1207. GENERAL. This section contains information for aviation safety inspectors (ASI) concerning the development and approval processes of configuration deviation lists (CDL). Aircraft certificated under the provisions of Federal Aviation Regulations (FAR) Part 25 and Civil Air Regulations (CAR) 4b may be approved for operations with missing secondary airframe and engine parts. Approval for operating with these parts missing would be authorized by the appropriate aircraft directorate, under an amendment to the type certificate. Evaluation and approval of CDL's are functions of the aircraft certification office (ACO).

1209. DEVELOPMENT AND APPROVAL OF A CDL. An aircraft manufacturer develops a proposed CDL for a specific aircraft type. The proposed CDL is submitted to the responsible ACO for approval by engineering specialists. The ACO will then coordinate with the appropriate aircraft evaluation group (AEG) to resolve any problems and discrepancies prior to approving the CDL. For United States (U.S.)-certificated airplanes, the CDL, once approved, is incorporated into the limitations section of the airplane flight manual (AFM) as an appendix. For manufacturers outside the U.S., the CDL may be a stand alone document and part of the Structure Repair Manual, or another manufacturer's document. Some operators may choose to attach a copy of the CDL to their MEL for easy and ready reference by flightcrews.

1211. USE OF THE CDL. Operators must follow the CDL limitations when operating with a configuration deviation. Operators are required to observe the following:

- The limitations in the CDL when operating with certain equipment missing (except as noted in the appendix to the approved flight manual)
- The flight operations, restrictions, or limitations that are associated with each missing airframe and engine part
- Any placard(s) required by the CDL describing associated limitations, which must be affixed in the cockpit in clear view of the pilot-in-command (PIC) and other appropriate crewmembers

1213. OPERATIONAL CONTROL. The principal operations inspector (POI) must ensure that the operator has developed appropriate procedures for the PIC and, if appropriate, procedures for notifying dispatch of the CDL missing parts by an appropriate notation in the aircraft logbook or other acceptable means.

1214.–1334. RESERVED.

[PAGES 4-638 THROUGH 4-758 RESERVED]

CHAPTER 7. ROTORCRAFT AUTHORIZATIONS AND LIMITATIONS

SECTION 3. OFFSHORE INSTRUMENT APPROACH PROCEDURES

1571. GENERAL. This section contains information and guidance to be used by principal operations inspectors (POI) for the review and approval of offshore instrument approach procedures. These procedures are to be used by instrument flight rules (IFR)-approved helicopter operators in an offshore environment to conduct instrument approaches to rigs, platforms or ships that are at least 5 nautical miles (nm) offshore in uncontrolled airspace. The helicopter operator will use the airborne radar approaches (ARA) or the offshore standard approach procedures (OSAP) for conducting instrument approaches in this environment.

1573. APPROACH APPROVAL PROCEDURES. Advisory Circular (AC) 90-80, "Approval of Offshore Helicopter Approaches," contains approval guidance, procedures criteria, and a sample training program for offshore instrument approaches. ARA procedures are special instrument approach procedures approved under the provisions of Federal Aviation Administration (FAA) Order 8260.19, "Flight Procedures and Airspace," as amended, and FAA Order 8260.3,"U.S. Standards for Terminal Instrument Procedures (TERPS)," as amended.

A. ARA Approval Procedures. POI's should refer to AC 90-80, which contains one method of approval criteria and a sample training program for ARA's. POI's should also note and adhere to the following ARA approval procedures:

(1) The regional flight inspection and procedures (FIP) staff is responsible for the development and approval of ARA's.

(2) A copy of the proposed ARA procedures shall be forwarded for review to the flight inspection field office (FIFO) that maintains geographic responsibility for the area in which the ARA will be conducted.

(3) The Flight Standards District Office (FSDO) with geographic responsibility for the area in which the ARA will be conducted is responsible for the verification of controlling obstacles.

(4) The certificate-holding district office (CHDO) is responsible for approving the operator's use of the en route and instrument approach procedures based on demonstration of acceptable performance. The CHDO may need the support of the office having geographic responsibility to observe these demonstrations.

(5) ARA's are documented on FAA Form 8260-7, "Special Instrument Approach Procedures."

(6) The FIP staff should amend the ARA with a pen-and-ink change for minor changes of rig location, provided the en route egress point and procedure name remain the same and the controlling obstacle does not change; otherwise, the FIP staff shall develop a new procedure.

B. Approval Process for OSAP's. Helicopter operators that are approved for IFR offshore operations and that desire to conduct OSAP's must do the following:

(1) The operator must submit a written request to the CHDO, according to AC 90-80, as amended.

(2) The POI shall evaluate and test the procedures contained in the request for OSAP approval, according to AC 90-80. The FSDO must approve the operator's OSAP maintenance and training programs before issuing authorization.

(3) The POI shall utilize part H112 of the operations specifications (OpSpecs) to authorize Federal Aviation Regulations (FAR) Part 135 operators to conduct OSAP's. For FAR Part 91 operations, the FSDO shall issue a letter of authorization to each FAR Part 91 operator. A sample letter of authorization is contained in Appendix 5 of AC 90-80.

1574.–1682. RESERVED.

[PAGES 4-962 THROUGH 4-1060 RESERVED]

CHAPTER 8. GROUND DEICING/ANTI-ICING PROGRAMS

SECTION 1. GENERAL

1683. BACKGROUND. Section 1 of this chapter contains background information on ground deicing/anti-icing of aircraft. Section 2 provides policy, direction, and guidance to Federal Aviation Administration (FAA) inspectors for evaluation and approval of operator procedures. Volume 6, chapter 2, section 10, of this handbook covers ground deicing/anti-icing surveillance procedures. There are essential differences in the ground deicing/anti-icing requirements of Federal Aviation Regulations (FAR) Parts 121, 125, and 135. For example, FAR Part 121 requires a complete deicing/anti-icing program that includes the training and testing of all personnel involved in the ground deicing/anti-icing process. On the other hand, FAR Part 135 requires training and testing for pilots only. Additionally, if a Part 135 operator chooses to use personnel other than pilots to assist in the ground deicing/anti-icing and verification process, then those individuals must receive adequate and appropriate training. FAR Part 125 requires testing for pilots only; however, other personnel involved in the deicing/anti-icing process must receive adequate and appropriate training. FAR Part 125 and 135 operators have the option to elect to meet the deicing/anti-icing requirements of FAR § 121.629(c) and institute a full deicing/anti-icing program. Recognizing that most inspectors will be required to inspect a variety of aircraft and operators, this chapter will attempt to present the differences in a meaningful manner. The inspector should become thoroughly familiar with the differences and requirements in the FAR covering operations in icing conditions.

1685. RULE. The current regulations in FAR Parts 121, 125, and 135 are based on the "clean aircraft concept." These regulations prohibit a takeoff when frost, ice, or snow (contamination) is adhering to the wings, control surfaces, or propellers of an airplane (See FAR §§ 121.629(b), 125.221(a), and 135.227(a)). Traditionally, the pilot-in-command (PIC) has been held responsible for ensuring that critical surfaces of the aircraft are clean before takeoff. By the winter of 1991, an analysis of air carrier accidents led the FAA to conclude that many PIC's had not been provided with sufficient information to ensure that the aircraft is free of frost, ice, and snow. FAR Part 121 was amended in November 1992, and FAR Parts 125 and 135 were amended in January 1994 to provide specific rules for operating (that is, taking off) in weather conditions when frost, ice, or snow could reasonably be expected to adhere to the aircraft (ground icing conditions).

1687. FAR PART 121 GROUND DEICING/ ANTI-ICING.

A. General. Based on the "clean aircraft concept," FAR § 121.629(b) prohibits takeoff when contamination is adhering to critical surfaces of an airplane or when takeoff would not be in compliance with FAR § 121.629(c). The exception to that general rule is that the Administrator may approve takeoff with "frost under the wing in the area of the fuel tanks." FAR § 121.629(c) requires a detailed, comprehensive, deicing/anti-icing program (FAR Part 121 ground deicing program) if a certificate holder is going to operate "any time conditions are such that frost, ice, or snow may reasonably be expected to adhere to the aircraft" (ground icing conditions). FAR § 121.629(d) provides a means for a certificate holder to operate without a program as required in § 121.629(c). If the operator does not have an FAA-approved deicing/anti-icing program, FAR § 121.629(c) prohibits an air carrier from "dispatch, release, or takeoff" of an aircraft in ground icing conditions.

NOTE: Principal operations inspectors (POI) may refer to AC 120-60, "Ground Deicing and Anti-Icing Program," for a detailed description of those elements that make up the program.

B. Provisions and Exceptions. An exception to the requirements for a complete deicing/anti-icing program is contained in FAR § 121.629(d), which provides that an air carrier is not required to have an approved deicing/anti-icing program if an outside-the-aircraft check (OTAC) is completed within 5 minutes prior to beginning the takeoff. An OTAC must be performed from outside the aircraft to ensure that "wings, control surfaces, and other critical surfaces are free

of frost, ice, and snow" when the certificate holder is operating in ground icing conditions. If a certificate holder chooses to operate in accordance with FAR § 121.629(d), the requirement for an OTAC must be contained in its operations specifications (OpSpecs).

1689. FAR PART 121 DEFINITIONS.

A. Pretakeoff Check. A pretakeoff check is a check of the aircraft's wings, or representative aircraft surfaces for frost, ice, or snow within the aircraft's holdover time. This check is required when the certificate holder operates (that is, intends to takeoff) in ground icing conditions, the aircraft has been deiced/anti-iced, and a holdover time is established. This check is accomplished within the holdover time range, and is normally accomplished by the flightcrew from inside the cockpit. The pretakeoff check requires the flightcrew to check the aircraft's wings or representative aircraft surfaces for contamination as well as to assess the current weather or other situational conditions. The pretakeoff check is integral to the use of holdover times; if holdover times are used, at least one pretakeoff check must be performed.

B. Pretakeoff Contamination Check.

(1) A pretakeoff contamination check is a check that the flightcrew and ground personnel conduct after the holdover time has been exceeded to make sure that the wings, control surfaces, and other critical surfaces, as defined in the operator's program, are free of frost, ice, and snow. The pretakeoff contamination check must be completed within 5 minutes before beginning the takeoff. Operators must have aircraft-specific procedures for use by flight crewmembers and qualified ground personnel while conducting the check to ensure that the aircraft's wings, control surfaces, and other critical surfaces remain free of frost, ice, or snow when a holdover time has been exceeded.

(2) The pretakeoff contamination check must be conducted from outside the aircraft for the following:

- Hard-wing airplanes with aft, fuselage-mounted, turbine-powered engines

NOTE: The check for these airplanes must include a tactile check of selected portions of the wing leading edges and the upper wing surfaces. Alternatives to a tactile check may be approved only with concurrence of the manager of the Flight Standards Air Transportation Division, AFS-200.

- All other airplanes unless the operator shows that the check can be adequately accomplished from inside the airplane. POI's may refer to AC 120-60 for additional guidance.

C. Outside-the-Aircraft Check (OTAC). An OTAC is a check that must be accomplished from outside the aircraft. FAR § 121.629(d) requires an OTAC of a certificate holder who operates in ground icing conditions without an approved FAR Part 121 ground deicing/anti-icing program. For those operators without an approved program, any time conditions are such that frost, ice, or snow may reasonably be expected to adhere to the aircraft, an OTAC must be performed to ensure that the wings, control surfaces, and other critical surfaces are free of contamination. An OTAC must occur within 5 minutes prior to beginning the takeoff.

D. Holdover Time. Holdover time is the estimated time deicing/anti-icing fluid will prevent the formation of frost or ice, and the accumulation of snow on the treated surfaces of an aircraft. Holdover time begins when the final application of deicing/anti-icing fluid commences and expires when the deicing/anti-icing fluid applied to the aircraft loses its effectiveness.

1691. FAR PART 121 GROUND DEICING/ANTI-ICING PROGRAM. In order for the certificate holder to have an approved ground deicing/anti-icing program that complies with FAR § 121.629(c), each operator's ground deicing/anti-icing program must cover the following four areas as described in AC-120-60:

- Management plan detailing operational responsibilities and procedures
- Holdover timetables and procedures for their use
- Procedures and responsibilities for the following:
  - Aircraft ground deicing/anti-icing
  - Pretakeoff check
  - Pretakeoff contamination check procedures
- Initial and recurrent ground training and/or testing for flight crewmembers and qualification for all other affected personnel, as applicable

1693. MANAGEMENT PLAN. The operator should develop, implement, and use a management plan to ensure proper execution of its approved deicing/anti-icing program. The management plan should include operations and maintenance responsibilities and identify the management positions that are responsible for ensuring that all necessary elements of the deicing/anti-icing program are properly executed.

1695. HOLDOVER TIMETABLES AND THE PROCEDURES FOR THEIR USE.

A. Holdover Timetables. Each operator is required to develop, and have available, holdover

timetables for use by its personnel. In addition, each operator must make its holdover timetables available for use in the cockpit. These timetables are required to be supported by data acceptable to the Administrator. Currently, the only acceptable data is that developed by the Society of Automotive Engineers (SAE) and International Standards Organization (ISO). ARP 4737, "Aircraft Deicing/Anti-Icing Methods with Fluids, for Large Transport Aircraft"; and ISO 11076, "Aerospace—Aircraft De-icing/Anti-icing Methods with Fluids"; contain the tables that are currently considered acceptable for use by the operators to develop their timetables.

NOTE: POI's may refer to AC 120-60 for additional guidance regarding the development of procedures for increasing or decreasing determined holdover times.

B. Takeoff Within a Holdover Time. If takeoff is conducted within the holdover time, FAR § 121.629(c)(4) requires at least one pretakeoff check of the wings or representative surfaces to be completed by the flightcrew within the holdover time range prior to the takeoff. Operators' manuals should contain detailed procedures regarding the use of the timetables in their operations. FAR § 121.629(c)(3) requires that the operator's program contain procedures for the flight crewmembers to increase or decrease the determined holdover time in changing weather conditions.

C. Takeoff After the Holdover Time is Exceeded. Under FAR § 121.629(c), takeoff after the holdover time is exceeded is permitted only if one or more of the following actions has been taken:

- A pretakeoff contamination check is made to ensure that wings, control surfaces, and other critical surfaces, as defined in the certificate holder's program, are free of frost, ice, or snow
- It is otherwise determined by an alternative procedure, which was developed by the operator and approved by the FAA (for example, wing icing sensors) that the wings, control surfaces, and other critical surfaces as defined in the certificate holder's program, are free of frost, ice, or snow
- The wings, control surfaces, and other critical surfaces have been re-deiced and a new holdover time has been established

1697. FAR PART 135 GROUND DEICING/ ANTI-ICING TRAINING AND CHECKING RULE.

A. General. Based on the "clean aircraft concept," FAR § 135.227(a) prohibits a pilot from taking off in an aircraft that has "frost, ice, or snow adhering to any rotor blade, propeller, windshield, wing, stabilizing or control surface, to a powerplant installation, or to an airspeed, altimeter, rate of climb, or flight attitude instrument system. . . . " As evident by the use of the term rotor blade, helicopters are subject to the regulation. There are two exceptions to the regulation:

(1) FAR § 135.227(a)(1) allows that "takeoffs may be made with frost adhering to the wings, or stabilizing or control surfaces, if the frost has been polished to make it smooth."

(2) FAR § 135.227(a)(2) allows that "takeoffs may be made with frost under the wing in the area of the fuel tanks if authorized by the Administrator."

B. Provisions in Part 135 Ground Deicing/Anti-Icing Rule. FAR § 135.227(b) requires pilot training in accordance with FAR 135.341 if a certificate holder is going to operate (that is, takeoff) "any time conditions are such that frost, ice, or snow may reasonably be expected to adhere to the airplane. . . " (ground icing conditions). In addition to pilot training, FAR § 135.227 requires a pretakeoff contamination check (see paragraph 1699 of this section). Therefore, if the certificate holder is operating in ground icing conditions, it must have completed pilot training in accordance with FAR § 135.341 and must conduct a pretakeoff contamination check. Exceptions to the regulation that requires a pretakeoff contamination check when operating in ground icing conditions are the following:

(1) Alternative procedure—the Administrator may approve an alternative procedure developed by the operator to ensure the wings and control surfaces are free of contamination (for example, wing ice sensors); or

(2) The operator may comply with the FAR Part 121 ground deicing rule.

C. Important Differences Between the FAR Part 121 Ground Deicing Rule and the FAR Part 135 Ground Deicing Rule. When compared to the FAR Part 121 ground deicing regulation, the FAR Part 135 ground deicing rule differs in the following respects:

(1) Only pilot training and checking is required to be conducted in accordance with FAR § 135.345(b)(6)(iv).

(2) The use of holdover times and tables when operators use deicing/anti-icing fluids is only advisory in the FAR Part 135 ground deicing rule.

(3) A pretakeoff contamination check must be performed whenever a FAR Part 135 certificate holder is operating in ground icing conditions.

1699. PRETAKEOFF CONTAMINATION CHECK. A pretakeoff contamination check is a check to make sure the wings and control surfaces are free of frost, ice, or snow. FAR § 135.227 requires that a pretakeoff contamination check be completed within 5 minutes prior to beginning the takeoff. It may be accomplished from inside or outside the aircraft and may be visual, tactile, or a combination, as long as the check is adequate to ensure the absence of contamination. The operator's FAA POI must approve the pretakeoff contamination check procedures for each specific type of aircraft operated by the certificate holder. Also, the pretakeoff contamination check must be referenced or described within the operator's OpSpecs.

1701. APPLICABILITY OF THE PART 135 GROUND DEICING RULE.

A. Certificate Holder Who Does Not Operate in Ground Icing Conditions. The FAR Part 135 ground deicing rule does not apply to a certificate holder who does not operate in ground icing conditions. Under the regulation, ground icing conditions exist any time weather conditions are such that frost, ice, or snow may reasonably be expected to adhere to the airplane. The certificate holder who does not operate in ground icing conditions is not required to train its pilots or develop pretakeoff contamination procedures. Certificate holders who do not operate in ground icing conditions will have that limitation in Paragraph A4b of their OpSpecs.

B. Operators Who Use Only One Pilot in Their Operations. Operators who use only one pilot in their operations (single-pilot operator) are not required to comply with the manual and approved training requirements of FAR § 135.21 or FAR § 135.341. Therefore, single-pilot operators are not required to have an approved pilot training program nor the additional training required by the FAR Part 135 ground deicing rule. However, single-pilot operators must comply with all the operational requirements of the FAR Part 135 ground deicing rule. Those operational requirements include a pretakeoff contamination check or an approved alternative procedure to the pretakeoff contamination check described in its OpSpecs. The pilots of these types of operators will need to demonstrate knowledge to operate in ground icing conditions during the initial and recurrent flight checks. A single-pilot operator will have an aircraft-specific description of the pretakeoff contamination check in Paragraph A 23 of its OpSpecs.

C. Helicopter Operations. Helicopter operations conducted under FAR Part 135 are excluded from the additional training and pretakeoff contamination check requirements of the FAR Part 135 ground deicing rule. However, the regulation requires the "clean aircraft concept" for helicopters.

1703. TRAINING REQUIREMENTS OF THE FAR PART 135 GROUND DEICING RULE. For operators who are required to have an approved training program, their training program must include pilot ground training in those subject areas relating to deicing and anti-icing operations required by FAR § 135.345 for initial, transition, and upgrade training and by FAR § 135.351 for recurrent training and testing. These training requirements must include procedures for operating airplanes during ground icing conditions. The operator must provide that training to its pilots and all other participating personnel. The training must include at least the following elements:

A. Use of Holdover Times. In FAR Part 135 operations, holdover times are only advisory and serve as guidance to the pilot in making takeoff decisions. If the operator uses the deicing/anti-icing fluids, it must train its pilots in the use of holdover times.

B. Airplane Deicing/Anti-Icing Procedures. Airplane deicing/anti-icing procedures include inspections and check procedures, and responsibilities and requirements for the pretakeoff contamination check or alternative procedures, as applicable.

C. Communications. The operator must provide training for all company personnel in communicating with all agencies involved in the deicing/anti-icing process and the decision making process.

D. Contamination. Aircraft surface contamination training includes how to identify frost, ice, or snow, and how to locate critical areas. Training should include an explanation of how small amounts of surface contamination adversely affect aircraft performance and flight characteristics.

E. Deicing/Anti-icing Fluids. If the operator uses deicing/anti-icing fluids, it must train its pilots, as well as any other participating personnel, in the types and characteristics of deicing/anti-icing fluids.

> **NOTE: It is important that flightcrews do not use deicing/anti-icing fluids unless they have been trained in the characteristics and effects of these fluids on their operation.**

F. Cold Weather Preflight—Inspection Procedures. Training should include procedures for cold weather preflight inspections.

G. Contamination Recognition. This aspect of training should cover techniques for recognizing contamination on the aircraft for use during both the preflight inspection and the pretakeoff contamination check.

NOTE: All training should be aircraft specific. When an operator has different kinds of aircraft, any unique characteristics of these aircraft while operating in ground icing conditions should be covered.

NOTE: Other than FAR Part 135 single pilot operators, who must have the pretakeoff contamination check procedures described in their OpSpecs, both FAR Part 121 and 135 operators must have documentation in their general manuals (GM) or flight manuals for the procedures they intend to use to comply with their respective deicing/anti-icing rule. These procedures may include descriptions of how, and by whom the pretakeoff contamination check will be accomplished, and how the operator will comply with its approved deicing/anti-icing procedures. If an operator elects to not fly when frost, ice, or snow may reasonably be expected to adhere to the surface of an aircraft, that operator's manuals should contain specific guidance to that effect. This guidance should leave no doubt in the minds of the flight crewmembers that this operator does not have deicing/anti-icing procedures in effect and does not authorize takeoff during ground icing conditions.

NOTE: Inspectors should use this handbook section for background material when reviewing those sections of operators' manuals and procedures concerning ground deicing/anti-icing.

1705. SOURCES OF INFORMATION. The following publications may be useful to inspectors and operators for developing, reviewing, and approving a ground deicing/anti-icing program.

A. AC 120-117, "Hazards Following Ground Deicing and Operations in Conditions Conducive to Aircraft Icing": This AC contains useful background information and also contains an extensive bibliography of related FAA and private sector publications, training materials, and other deicing/anti-icing or related information.

B. Publications of the SAE:

- AMS 1424, "Deicing/Anti-Icing Fluid, Aircraft, Newtonian—SAE Type I"
- AMS 1428, "Fluid, Aircraft Deicing/Anti-Icing, Non-Newtonian, Pseudo-Plastic, SAE Type II"

C. SAE ARP4737: This publication of the SAE contains holdover tables and information on how they are developed as well as information on the inspection of aircraft.

D. ISO Publications:

- ISO 11075, "Aerospace—Aircraft Deicing/Anti-Icing Newtonian Fluids ISO type I"
- ISO 11076, "Aerospace—Aircraft Deicing/Anti-Icing Methods with Fluids"
- ISO 11077, "Aerospace—De-icing/Anti-Icing Self Propelled Vehicles—Functional Requirements"
- ISO 11078, "Aerospace—Aircraft De-icing/Anti-Icing Non-Newtonian Fluids ISO type II"

E. AC 120-60, "Ground Deicing and Anti-Icing Program": This circular contains information on how operators may develop acceptable ground deicing/anti-icing programs to comply with FAR § 121.629(c).

F. Draft AC 135-XX, "Training and Checking in Ground Icing Conditions": This AC contains information on how operators may develop acceptable ground deicing/anti-icing programs to comply with FAR § 135.227.

G. AC 120-58, "Pilot Guide—Large Aircraft Ground Deicing."

H. AC 120-XX, "Pilot Guide—Ground Deicing of Air Taxi and Commercial Aircraft."

I. Computer-Based Instruction (CBI) Programs: "Evaluating and Approving a Ground Deicing/Anti-Icing Program," a program for FAR Part 121 operations and "Part 125/135 Ground Deicing/Anti-icing Operations" course number 25007: Each Regional Flight Standards Division (RFSD) and each FSDO has been issued a copy of these CBI's.

J. "Winter Operations Guidance for Air Carriers": This publication contains a number of AC's and articles relevant to the topic. Specific publications are listed here in case they need to be obtained and used separately:

- AC 91-13, "Cold Weather Operation of Aircraft"
- AC 65-9A, "Cold Weather Suggestions" (see chapter 11)
- "Winter Operations," Douglas Aircraft Company
- "Cold Weather Procedures," Air Carrier Operations Bulletin No. 7-82-2
- AC-65-15A, "Deicing/Anti-Icing Systems of Aircraft" (see chapter 7)
- AC-20-73, "Operational Factors" (see chapter 2, sections 3 and 4)
- AC-135-9, "FAR Part 135 Icing Limitations"

- AC 23.1419-1, "Certification of Small Airplanes for Flight in Icing Conditions"
- FAA-P-8740-24, "Tips on Winter Flying, General Aviation"
- "Aircraft Deicing and Anti-Icing Procedures," Air Carrier Operations Bulletin No. 7-81-1
- "Deicing of Aircraft with Engines Operating" Order 8430-1A Maintenance Bulletins
- "De-Icing/Anti-Icing Fluids Evaluation," Boeing of Canada, De Havilland Division Dash 8, all operator message No. 48
- "Icing Precautions and Procedures," Boeing of Canada, De Havilland Division Dash 8, all operator message No. 49
- "Wing Upper Surface Ice Detection MD-80," Douglas Aircraft Company, Douglas Service, First Quarter, 1990
- "Aerodynamic Effects of Deicing Fluids," Boeing Airliner, Oct.-Dec. 1989
- "Airplane Ground Deicing/Anti-Icing," Boeing Airliner, Oct.-Dec. 1989
- "Deicing/Anti-Icing," Boeing Airliner, Oct.-Dec. 1989.
- "Winter Operations—An Update," Boeing Airliner, Oct.-Dec. 1989
- AC 91-6, "Water, Slush, and Snow on the Runway"
- "Effects of Leading Edge Contamination on Aerodynamic Performance," ACOB 8-83-1
- "Turbojet Aircraft Engine Icing During Prolonged Operations in Icing Conditions," ACOB 8-83-1

NOTE: Numerous video tapes have been produced by manufacturers of deicing/anti-icing products and by aircraft operators. Access to these tapes may be available through the regional deicing/anti-icing coordinator or AFS-500.

1706.–1738. RESERVED.

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CHAPTER 8. GROUND DEICING/ANTI-ICING PROGRAMS

SECTION 2. APPROVAL OF FAR PARTS 121 AND 135 PROCEDURES

1739. GENERAL. This section contains policy, direction, and guidance to inspectors for review, evaluation, and approval of deicing/anti-icing procedures. The requirements for operations in ground icing conditions are covered in Federal Aviation Regulations (FAR) §§ 121.629, 125.221, and 135.227.

A. FAR Part 121 Regulatory Requirement. FAR § 121.629, effective on November 1, 1992, requires that an operator conducting operations when conditions are such that frost, ice, or snow may reasonably be expected to adhere to the aircraft must satisfy the following criteria:

- Have and use an approved aircraft ground deicing/anti-icing program in accordance with FAR § 121.629(c); or
- Be issued operations specifications (OpSpecs) in accordance with FAR § 121.629(d), which requires the operator to perform an outside-the-aircraft check (OTAC) within 5 minutes prior to beginning takeoff to ensure that the wings, control surfaces, and other critical surfaces are free of frost, ice, and snow.

NOTE: Operators who elect to operate in accordance with FAR § 121.629(d) must have the procedures for their OTAC in their appropriate manuals and be approved by the principal operations inspector (POI) prior to conducting operations when frost, ice, or snow may reasonably be expected to adhere to the aircraft.

NOTE: To be eligible for approval, the OTAC procedure for all aircraft must include a provision for close visual scrutiny of selected portions of all of the critical surfaces of the particular type aircraft to be checked. In addition, for hard-wing airplanes with aft, fuselage-mounted, turbine-powered engines, the OTAC procedure must also include a tactile check of selected portions of the wing leading edges and the upper wing surfaces.

B. FAR Part 125 Regulatory Requirement. Effective on January 31, 1994, FAR Part 125 operators are required to comply with the operating limitations of FAR § 125.221, and the testing requirements of FAR § 125.287. Operators must have appropriate procedures in their general manuals (GM) showing how they are complying with the FAR.

C. FAR Part 135 Regulatory Requirement. Effective on January 31, 1994, FAR § 135.227 restricts operations when an aircraft has frost, ice, or snow adhering to any rotor blade, propeller, windshield, wing, stabilizing or control surface, powerplant installation, or instrument system. In order to comply with FAR § 135.227, operators must meet the applicable training requirements of FAR §§ 135.341, 135.345, and 135.351 and comply with the following:

- Be issued OpSpecs in accordance with FAR § 135.227(f), which requires the operator to perform a pretakeoff contamination check within 5 minutes prior to beginning takeoff to ensure that the wings, control surfaces, and other critical surfaces are free of frost, ice, and snow; or
- Have a Federal Aviation Administration (FAA)-approved alternative procedure to determine that the airplane is free of frost, ice, or snow; or
- Have an FAA-approved aircraft ground deicing/anti-icing program in accordance with FAR § 121.629(c)

1741. APPROVAL PROCESS.

A. Approval Process. The approval of the FAR Part 121 operator's ground deicing/anti-icing program follows the five-step general process for approval and acceptance outlined in volume 1, chapter 4, section 6, of this handbook.

B. Requirements for FAR Part 125 Operators. The use of this procedure for FAR Part 125 operators would be helpful, but is not required unless the operator elected to develop a deicing/anti-icing program in accordance with FAR § 121.629(c).

C. Standard Procedures for Approval. FAR Part 135 deicing/anti-icing requirements are fulfilled in the completion of an approved deicing/anti-icing training program and by the issuance of OpSpecs. Standard procedures for approval of FAR Part 135 operator

training programs and the issuance of OpSpecs apply. OpSpecs must describe or reference pretakeoff contamination check procedures for each specific airplane type. These procedures must also be contained in the operator's GM.

D. OpSpecs under Paragraph A23. When an operator has met the requirements for operations in ground icing conditions under FAR Parts 121 or 135 as appropriate, the POI should issue OpSpecs under Paragraph A23. Should a certificate holder elect not to operate in ground icing conditions, a limitation should be placed in Paragraph A4b.

E. Five-Step Approval Process. Should an operator elect to develop a deicing/anti-icing program in accordance with FAR § 121.629(c), the following standard approval process would apply. For purposes of clarity and description, the five-stage process is described in this section as five separate and distinct stages. In practice, the stages may overlap, and principal inspectors are authorized to vary the process to fit the circumstances.

F. Evaluation of Operator's Program. The approval process requires the evaluation of the operator's program by a team of inspectors, which is composed of the POI, the principal maintenance inspector (PMI), and inspectors of both operations and airworthiness specialties working under their leadership. The principal avionics inspector (PAI) will become preeminent in the approval process with the advent of wing sensors, which are currently under development and which will offer an alternative means of determining that the aircraft is free of frost, ice, and snow.

G. Issuance of OpSpecs. At the successful conclusion of the process, the operator is issued OpSpecs that authorize the operator to conduct operations under the program when conditions exist such that frost, ice, or snow may reasonably be expected to adhere to the operator's aircraft. If a certificate holder elects to operate according to FAR § 121.629(d), the certificate holder must be issued an OpSpec requiring an OTAC.

NOTE: An operator who is required to conduct an OTAC may deice/anti-ice the aircraft, but may not omit the checking procedures by virtue of having done so.

1743. PHASE ONE—INITIAL DISCUSSION. Phase one begins when the operator initially approaches the FAA to obtain approval of a ground deicing/anti-icing program.

A. Become Familiar with Technical Problems and Regulatory Requirements. At this stage, both the FAA team and the operator must become familiar with the technical problems involved and the regulatory requirements. A discussion of these elements is contained in Advisory Circular (AC) 120-60, "Ground Deicing and Anti-Icing Program"; and AC 135-XX "Training and Checking in Ground Icing Conditions." Section 1 of this chapter includes a listing of documents the operator may find useful in developing a program. Principal inspectors should ensure that the operator is aware of these sources of information.

B. Outline Required Elements. The principal inspectors should outline for the operator those elements that must be contained in the operator's proposed program and the actions that will be required at each stage of the approval process. See volume 4, chapter 8, section 1.

1745. PHASE TWO—INITIAL OPERATOR SUBMISSION. Phase two begins when the operator initially submits a proposed program package. The principal inspectors' first action is to review the operator's submission to determine if each element specified in phase one is included. If the operator's initial program is incomplete, the principal inspectors must immediately inform the operator and determine what action the operator proposes to take to complete the package. If the operator's package is complete or the principal inspectors judge that it will soon be complete, the principal inspectors should distribute the elements to the appropriate inspectors for a prompt initial examination. Principal inspectors should return obviously unacceptable packages to the operator with a letter outlining the deficiencies.

A. Initial Examination. The initial examination does not include a detailed operational or technical evaluation (this analysis is conducted in phase three). The phase two examination is conducted in sufficient detail to assess the completeness of the operator's package. Inspectors assigned to complete the initial review should promptly complete the initial evaluation and inform the principal inspectors of their findings.

B. Unacceptable Elements. At this point it is appropriate for the principal inspectors to hold a meeting with the operator to discuss any obviously unacceptable elements of the program. Under unusual circumstances, the principal inspectors may need to return the operator's entire package with a written statement that explains why the submission is unacceptable.

C. Initially Acceptable Package. When the operator's package is initially acceptable, the principal inspectors should inform the operator and provide an estimate of when the operator can expect to be informed of the results of the phase three analysis.

1747. PHASE THREE—PRELIMINARY APPROVAL. Phase three consists of a detailed analysis of the operator's ground deicing/anti-icing program, training, equipment, and facilities. Throughout phase three, inspectors and the operators should expect to encounter various deficiencies. Inspectors and operators should plan to meet and work closely to agree on corrections for these deficiencies throughout phase three.

A. Document Review. The first step in phase three is a detailed review and analysis of those manual sections the operator has prepared for the ground deicing/anti-icing program.

(1) FAR § 121.135(a)(1) requires the manual to provide all categories of employees with sufficient instructions and information to allow them to perform their duties with a high degree of safety. FAR § 125.71(a) requires a current manual setting forth the operator's procedures and policies that are acceptable to the Administrator. FAR § 135.21(a) requires the certificate holder to prepare and keep current a manual setting forth the procedures and policies, which are acceptable to the Administrator, that must be used by flight, ground, and maintenance personnel.

(2) The operator's GM, including those sections concerning the ground deicing/anti-icing program, does not require approval by the FAA. The appropriate sections of the manual must, however, be reviewed and found acceptable by the appropriate principal inspectors before initial approval is granted to the operator to conduct a ground deicing/anti-icing program. The operator is granted approval by means of OpSpecs. After the operator receives initial approval of the program or procedures, the applicable principal inspectors may require the operator to further revise manual contents.

(3) See volume 3, chapter 15, of this handbook for general guidance on review and acceptance of operator manuals, procedures, and checklists. Inspectors should ensure that the content of the operator's manual meets the following criteria:

- Identifies clearly each category of employee with responsibility for program elements
- Defines the duties of each category of employee involved
- Provides adequate background information, step-by-step procedures and, when appropriate, checklists that allow each category of employee to perform to the required standard

NOTE: The experience gathered during deicing/anti-icing surveillance has shown that when holdover times have been exceeded, the most critical area of an operator's ground deicing/anti-icing program is an adequate pretakeoff contamination check. It is essential for the POI to ensure that the operator's procedures offer the means for personnel to adequately determine that the aircraft is free of contamination before a takeoff during conditions when frost, ice, or snow may reasonably be expected to adhere to the aircraft. This becomes more critical if the POI authorizes the pretakeoff contamination check to be conducted from inside the airplane.

B. Training Program Review. The requirements of FAR Parts 121 and 135 will vary to some extent. The inspector should make a careful review of the requirements of the applicable FAR Part before conducting the training program review. FAR § 121.629(c)(2) covers the initial and recurrent training requirements for operators who wish to receive approval under FAR § 121.629(c). FAR § 135.345(b)(6)(iv) covers the training requirements for operators seeking approval under FAR § 135.227(f). The operator must prepare a training/testing program to qualify each required category of employee who has responsibilities for ground deicing/anti-icing to perform their assigned duties.

(1) The training must include both general procedures and the specific requirements of each make, model, series, and variant of aircraft.

(2) The training program must include a means of testing and qualification for each category of employee who is covered under the approved program and who checks, inspects, deices, anti-ices, releases, dispatches, or operates an aircraft.

(3) The operator's training program must include flightcrew and dispatcher training.

C. Facilities and Equipment. The operator must acquire and deploy the equipment to accomplish ground deicing/anti-icing. Inspectors should plan to inspect some or all of the facilities at which this equipment is deployed (depending on the size of the operator) before granting initial approval. Some operators fulfill part of this requirement by demonstrating the knowledge of procedures and equipment during non-icing conditions prior to the deicing/anti-icing season. Inspectors must also evaluate coordination procedures between the airport operator and the air traffic control (ATC) facility at the airport.

D. OpSpecs for Operators with Ground Deicing/Anti-Icing Program Approval. When the POI and PMI are satisfied that the operator is able to begin ground deicing/anti-icing operations, they should issue the appropriate OpSpecs. The OpSpecs should ref-

erence the sections of the operator's manual that contain the operations and airworthiness portions of the operator's program.

1749. PHASE FOUR—VALIDATION TESTING. Phase four consists of a validation of the operator's procedures in actual operations. This process consists of a progressive refinement of the operator's manuals, checklists, and procedures as experience is gained and FAA surveillance reports become available.

A. Reason for Surveillance. Surveillance of the operators' ground deicing/anti-icing programs or procedures is necessary to evaluate the effectiveness of these programs as well as to provide input on the adequacy of the rule requirements. Surveillance will further identify problem areas and will facilitate corrective action. The intended result of this surveillance program is to promote a safe winter operating season.

(1) Surveillance Prerequisites. As a prerequisite to conducting surveillance, inspectors should review FAR §§ 121.629, 125.221, and 135.227; AC 120-60, "Ground Deicing and Anti-Icing Program"; AC 135-XX, "Training and Checking in Ground Icing Conditions"; AC 120-58, "Pilot Guide to Large Aircraft Ground Deicing"; AC 120-XX, "Ground Deicing of Air Taxi and Commercial Aircraft"; AC 20-117, "Hazards Following Ground Deicing and Operations in Conditions Conducive to Aircraft Icing"; and complete both the computer-based instruction (CBI) programs titled, "Evaluating and Approving a Ground Deicing/Anti-Icing Program" and "Part 125/135 Ground Deicing/Anti-icing Operations," course number 25007.

(2) Geographic Responsibility. Geographic inspectors should be familiar with the airport deicing/anti-icing plans and the ground deicing/anti-icing programs and procedures of those certificate holders that operate into airports located in their geographic area. Local surveillance requirements should be coordinated with the certificate-holding district office (CHDO).

(3) Conduct of Inspections. The only time that it may be possible to determine that the operator's ground deicing/anti-icing procedures are safe and effective is during actual icing conditions. Therefore, inspection of operator ground deicing/anti-icing procedures should be conducted during the times that winter operations and certificate holders' ground deicing/anti-icing procedures are in effect. Inspector surveillance is a sampling process. It is not intended to observe each and every deicing operation that occurs during the time that ground deicing/anti-icing operations are ongoing. Through effective sampling, the CHDO should be able to determine the operator's ability to comply with the ground deicing regulations and meet the requirements of their OpSpecs. The required number of ground deicing surveillance activities necessary to determine a particular operator's effectiveness may vary from a relatively low percentage to a very high percentage. For certain operators, 100 percent surveillance may be necessary in order to determine the operator's capability to safely operate during ground icing conditions.

(a) Inspections can be conducted in conjunction with ramp or en route inspections, or during airport site visits. Each district office should develop and coordinate a ground deicing/anti-icing surveillance plan as described in volume 6, chapter 1, section 1, of this handbook. This plan should be coordinated with the regional deicing/anti-icing coordinator.

(b) Surveillance of operators' recurrent ground deicing/anti-icing testing or training programs should also be conducted.

(c) The POI should coordinate an inspection of the ground deicing/anti-icing equipment used by the operator, with the geographic units that are responsible for each airport where the equipment is located. In some cases, one operator or contractor may deice more than one air carrier. In this case, it is necessary for the POI to ensure that the operator/contractor doing the deicing has a complete knowledge of the specific operator's approved ground deicing/anti-icing program. The POI can conduct this type of surveillance prior to the deicing/anti-icing season and should confirm that the company performing the deicing has the knowledge and the ability regarding ground deicing/anti-icing equipment.

(4) Program Tracking and Reporting Subsystem (PTRS). An operations inspector should record surveillance of ground deicing/anti-icing operations by using PTRS Activity Code 1637 with the word "ICE" in the "National Use" block. A detailed guide for preparing a PTRS entry is included in figure 4.8.2.1.

B. Conclusion of Phase Four. Phase four may be concluded when, in the judgment of the POI and PMI, surveillance of the operator's program shows that the operator is successfully conducting the program under actual ground icing conditions. There is no minimum time period for phase four, but the principal inspectors must have an adequate number of surveillance reports to form an educated opinion of the operator's performance. Normally, operators should be able to progress through phase four in one winter season or less.

C. Deficiencies. If final approval cannot be granted after an entire winter season due to deficiencies in the operator's program, the POI and PMI should consider having the operator return to phase two. Principal inspectors shall revise the OpSpecs of operators who are returned to phase two.

1751. PHASE FIVE—FINAL APPROVAL. When the principal inspectors are satisfied with the operator's performance, they should inform the operator in writing that the verification process is complete.

1753. OPSPECS ISSUANCE INSTRUCTIONS. The Operations Specifications Subsystem (OPSS) software will provide the appropriate approval paragraph A23 for FAR Part 121 operators. Until software is developed for FAR Part 135, POI's having certificate management responsibility for FAR Part 135 operators should comply with the current handbook bulletin on issuing A23 and contact the operations branch of their RFSD to obtain instructions and specific pages necessary to issue the appropriate OpSpecs paragraphs concerning operation of airplanes in ground icing conditions.

1754.–1774. RESERVED.

FIGURE 4.8.2.1.
GUIDE FOR COMPLETING PTRS DATA ENTRY

SECTION I
(REF. FAA FORM 8000-36)

1. INSPECTOR NAME CODE: Enter the identification CODE of the inspector performing the surveillance as it appears in the Aviation Safety Analysis System (ASAS) inspector ID tables. If the surveillance activity was performed as a team effort on the same individual air carrier and the same piece of equipment identified in the DESIGNATOR field below, enter the identification code of the team leader, and provide the names of the team members in SECTION II - PERSONNEL of this report.

2. ACTIVITY NUMBER: Enter the PTRS ACTIVITY CODE for SURV/OPER/DEICE, Operations 1637, Maintenance 3625, Avionics 5625, as applicable, to the individual identified in the INSPECTOR NAME CODE field above. If deicing/anti-icing of more than one aircraft make or model was observed during this surveillance, enter a separate activity code for each model of aircraft on which deicing/anti-icing surveillance was conducted.

3. FAR: Enter 121, 125, or 135, as applicable.

4. STATUS (COP): Enter the LETTER, as applicable.

5. RESULTS (ACEFISTX): Enter the LETTER, as applicable.

6. COMPLETION DATE: Enter the DATE when the surveillance was completed.

7. DESIGNATOR: Enter the DESIGNATOR code of the operator, as assigned by the Regulatory Support Division (AFS-600) for which the report is made.

8. MAKE-MODEL-SERIES: If a ground deicing/anti-icing activity was observed on an aircraft, enter the make, model, and series of that aircraft. Otherwise, leave this field blank.

9. LOC/DEPARTURE POINT: Enter the airport IDENTIFIER of the airport on which the ground deicing/anti-icing surveillance was conducted as it is listed in FAA Order 7350.6, "Location Identifiers."

10. TRACKING: Enter the TIME OF DAY that the deicing/anti-icing surveillance was conducted.

11. NATIONAL USE: Enter ICE.

12. ACTIVITY TIME: Record the cumulative TIME spent on this activity. If this surveillance activity was completed in conjunction with another activity, such as cockpit en route or ramp inspection, do not record any activity time in this field.

SECTION II - PERSONNEL

13. PERSONNEL NAME: Enter the names of surveillance team members, if appropriate.

14. POSITION: Enter the specialty of the team members identified in the PERSONNEL NAME field above, Operations, Airworthiness, or Avionics, as appropriate.

FIGURE 4.8.2.1.—Continued
GUIDE FOR COMPLETING PTRS DATA ENTRY

SECTION IV - COMMENTS

15. PRIMARY/KEY: Enter the CODES listed below to standardize the entries in the COMMENT TEXT field. However, additional PRIMARY/KEY codes may be used, as necessary, to address additional comments.

D/757	Enter the meteorological conditions that existed at the time the deicing/anti-icing surveillance was conducted. This entry should include the outside air temperature (OAT) and precipitation.
A/603	Air Carrier's Operational Control Procedures
A/609	Establishment and Use Of Holdover Times
A/507	Operator/Contractor Deicing/Anti-Icing Equipment and Procedures
H/603	Aircraft Exterior Surface Checks and Procedures
A/409	Operator Training
D/507	Airport Procedures and Deicing/Anti-Icing Locations
C/711	ATC Procedures

16. OPINION (UPIE): Enter the appropriate LETTER to address the comment provided for each entry in the COMMENT TEXT Field.

17. COMMENT TEXT: Comment on the effectiveness of procedures used by certificate holders, airport management, and ATC during ground deicing/anti-icing operations. Comments should be provided on positive findings and should provide information on methods and procedures, as well as reporting discrepancies or problem areas, and the resolution of those problem areas. Comments should be provided in each of the areas listed in paragraph 15. However, if observation in a specific area listed was not performed, insert "Not Observed" next to the PRIMARY/KEY code provided for that area.

NOTE: Following each report upload into PTRS, ERROR messages on the upload exception report must be reviewed and, if necessary, addressed to ensure that loading to the national data base will occur.

FIGURE 4.8.2.1.—Continued
GUIDE FOR COMPLETING PTRS DATA ENTRY

PROGRAM TRACKING AND REPORTING SUBSYSTEM DATA SHEET

SECTION I
Inspector Name Code: _____ Record ID: _____

Activity Number: 1637	FAR:	NPG:
Status: (COP)	Callup Date:	Start Date:
Results: (ACEFISTX)	Pass/Fail (P/F):	Completion Date:
Designator:	Airman Certificate #	
Airman Name/Other:		
Aircraft Reg #: N		
Make-Model-Series: _____ - _____ - _____		
Loc/Departure Point:	Arrival Point:	Flight #:
Investigation:		
Tracking		
Miscellaneous:		
Numeric Misc:		
Local Use:		
Regional Use:		
National Use: ICE		
Activity Time:	Travel Time:	
Travel Cost:	Geographic Activity:	
Triggers: (Activity #/ REXM/ R# (repeat))		
_____ _____ _____ _____		

SECTION II - PERSONNEL (unlimited)

Personnel Name:	Position:	Base:	Remarks (35 Characters)

SECTION III - EQUIPMENT (unlimited)

Manufacturer:	Model:	Serial#:	Remarks (23 Characters)

SECTION IV-COMMENT SECTION (unlimited)

COMMENT CODES		
Primary/Key	Opinion (UPIE)	Comment Text (unlimited length)
D507	U	THERE WAS NO COMMUNICATION
		ABILITY BETWEEN THE REMOTE
		DEICING FACILITY AND THE
		CONTRACTOR ASSIGNED TO
		TANKER DEICING FLUID TO THE
		REMOTE DEICING PAD
		This is a sample sheet turned
		in by an ops inspector.

Date: Originator: Office:
Inspector Signature: Supervisor Initials:

FIGURE 4.8.2.1.—Continued
GUIDE FOR COMPLETING PTRS DATA ENTRY

PROGRAM TRACKING AND REPORTING SUBSYSTEM DATA SHEET

SECTION I

Inspector Name Code: _____ Record ID: _____

Activity Number: 3627	FAR:	NPG:
Status: (COP)	Callup Date:	Start Date:
Results: (ACEFISTX)	Pass/Fail (P/F):	Completion Date:
Designator:	Airman Certificate #	
Airman Name/Other:		
Aircraft Reg #:N		
Make-Model-Series: _____ - _____ - _____		
Loc/Departure Point:	Arrival Point:	Flight #:
Investigation:		
Tracking		
Miscellaneous:		
Numeric Misc:		
Local Use:		
Regional Use:		
National Use: ICE		
Activity Time:	Travel Time:	
Travel Cost:	Geographic Activity:	
Triggers: (Activity #/ REXM/ R# (repeat))		
_____ _____ _____ _____ _____		

SECTION II - PERSONNEL (unlimited)

Personnel Name:	Position:	Base:	Remarks (35 Characters)

SECTION III - EQUIPMENT (unlimited)

Manufacturer:	Model:	Serial#:	Remarks (23 Characters)

SECTION IV-COMMENT SECTION (unlimited)

COMMENT CODES		
Primary/Key	Opinion (UPIE)	Comment Text (unlimited length)
H832	I	#1 TIRE WORN TO CORD
		MAINT NOTIFIED WHEEL
		ASSY REPLACED
F812	E	DURING RAMP INSPECTION
		SNOW SQUALL CROSSED
		AIRPORT DEICING EQUIP
		WAS PUT TO USE AND ALL
		PROCEDURES WERE
		FOLLOWED FOR DEICING
H810	P	#2 ENGINE ON OIL WATCH
		USING 1 QT PER HOUR OF
		FLIGHT
		This is a sample data sheet turned
		in by a maintenance inspector.
		While the inspector was performing
		a ramp inspection (3627), a
		snow squall crossed the
		airport. The inspector noted the
		deicing/anti-icing of the airplane
		as a secondary task.

Date: Originator: Office:

Inspector Signature: Supervisor Initials:

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FIGURE 5.1.2.4.
PILOT CERTIFICATE AIRCRAFT TYPE DESIGNATIONS - AIRPLANES

MANUFACTURER	MODEL DESIGNATION	PRIOR DESIGNATION	CURRENT DESIGNATION
Aero Commander Division North America Rockwell Corp.	1121 Jet Commander	AC-1121 CJ-1123	IA-JET
Aerospatiale, France	SN 601 Corvette		SN-601
Aerospatiale/Aeritalia, France	ATR-42, ATR-72		ATR-42, ATR-72
Armstrong Whitworth Aircraft, Ltd., UK	Argosy AW 650	Armstrong Whitworth AW-650	AW-650
Avions Dassault, General Aeronautique Marcel, Dassault, France	Mystere 10 Falcon		DA-10
	Mystere 20 Falcon, Fan Jet	GAMD/SUD-20	DA-20
	Falcon 50 (Tri-jet) Falcon 900		DA-50
	Fan Jet Model 200		DA-200
Beech Aircraft Corp., USA Witchita, KS	BE-200T/200TC (restricted)		BE-200
	BE-300, BE-350, BE-300LW, BE-B300		BE-300
	BE-300FF		BE-300F
	BE1900, BE1900C, BE1900D, C-12J		BE-1900
	BE-2000 Starship		BE-2000
	BE-2000S (single pilot)		BE-2000S
	Diamond I, MU-300, MU-300-10	MU-300	MU-300, BE-400
Boeing Co., USA	B-17	Boeing B-17	B-17
	247-D	Boeing 247	B-247
	314	Boeing 314	B-314
	S-307, SA-307	Boeing 307	B-307
	377, C-97, YC-97	Boeing 377	B-377
	707, 720, C-135, E3-A, E6-A/B C-18B, EC-18B, EC-18D	Boeing 707/720	B-707, B-720
	727	Boeing 727	B-727
	737/100/200/300/400/500, T-43	Boeing 737	B-737
	747, E-4, 747SP	Boeing 747	B-747
	B-747-400		B-747-4
	757, 767		B-757, B-767
Breguet, France	Fauvette 905A		BG-905
Bristol Aircraft Ltd., UK	Britannia 305		BR-305

FIGURE 5.1.2.4.—Continued
PILOT CERTIFICATE AIRCRAFT TYPE DESIGNATIONS - AIRPLANES

MANUFACTURER	MODEL DESIGNATION	PRIOR DESIGNATION	CURRENT DESIGNATION
British Aerospace/Taiwanese Aerospace Corp.	BAE-146-70/85/100/115 Series	BAE-146	BAE-146, AVR-146
Bristish Aerospace Corporation	BAE-ATP		BAE-ATP
	HP.137, MK.1 Jetstream Series 200 Jetstream 3101 Jetstream 3201		BA-3100
	Jetstream 4100		BA-4100
	Concorde SST		CONCRD
British Aircraft Corp., UK	BAC 1-11	BAC-1-11	BA-111
Bushmaster Aircraft	Bushmaster 2000		BU-2000
Canadair, Ltd., Canada	CL-44 (Yukon)	Canadair	CL-44
	CL-215		CL-21
	(Challenger) CL-600 (Challenger) CL-601, CL-6013A		CL-600
	CL600-2B19		CL-65
Cessna Aircraft Corp., USA	Cessna 500, 501, 550, 551, 552, T-47		CE-500
	CE-525		CE-525
	CE-525 (single pilot)		CE-525S
	Citation III, Model 650 Citation VI, VII		CE-650
Chase (also Roberts Aircraft Co.), USA	YC-122	Chase YC-122	YC-122
Consolidated Vultee Aircraft	(See General Dynamics Corp.)		
Convair	(See General Dynamics Corp.)		
Constructiones Aeronauticas S.A.	CASA (Model) C-212-CB		CA-212
	C-235		CN-235
Curtiss-Wright Corp., USA	Commando CW-20	Curtis-Wright C-46	CW-46
Dart Aircraft Corp.	(See General Dynamics Corp.)		
deHavilland Aircraft of Canada Ltd., Canada	Caribou 4A USAF C-7A, Army CV-2	deHavilland Caribou DH-4	DH-4
	DHC-7		DHC-7
(See Hawker Siddeley)	DHC-8		DHC-8
Dee Howard Co., USA	Howard 500	Howard 500	HW-500
Dornier, Deutsch Aerospace, Friedrickshafen, Germany	Dornier 223-201/101/212		DO-223

FIGURE 5.1.2.4.—Continued
PILOT CERTIFICATE AIRCRAFT TYPE DESIGNATIONS - AIRPLANES

MANUFACTURER	MODEL DESIGNATION	PRIOR DESIGNATION	CURRENT DESIGNATION
Dornier, Deutsch Aerospace—Continued	Dornier 228		DO-228
	Dornier-328-100		DO-328
Empresa Brasileira de Aeronautica, Brazil	EMB-110P1, P2, P3		EMB-110
	EMB-120		EMB-120
Fairchild Aircraft Corp., USA and Fokker, The Netherlands	Friendship F-27 F-227	Fairchild F-27/227	F-27
	C-119C		FA-119C
	C-123		FA-C123
Fairchild Hiller	C-82A		C-82A
Fokker, Netherlands	Fellowship F-28 (Models 1000 & 4000)		FK-28
	Fokker 28 MK 0100 Fokker 28 MK 0070		FK-100
	F-50		FK-50
Ford Motor Corp., USA	Tri-Motor 4-AT 5-AT, FO-5	Ford 5	FO-5
Learjet Corp.	23, 24, 25, 28, 29, 31, 35, 36, 55, C21-A	LR-23, LR-24, LR-25, LR-28, LR-29, LR-35, LR-36, LR-50	LR-JET
	60		LR-60
General Dynamics Corp., USA	PB2Y, PB2Y-5	Consolidated-Vultee PB2Y	CV-PB2Y
	PB4Y-2, QP-4B	Consolidated-Vultee P4Y	CV-P4Y
	PBY-5, 28-4, 28-5	Consolidated-Vultee PBY-5	CV-PBY-5
	LB-30, C87A, RB-24	Consolidated-Vultee LB-30	CV-LB30
	240, 340, 440, T-29 C-131	Convair 240/340/440	CV-240, CV-340, CV-440
	22, 22M (880) (990)	Convair 880/990	CV-880, CV-990
	Napier-Eland Mark I, Mark II, Allison Propjet	Napier-Eland Convair Mark I/II	CV-N1, CV-N2
	Convair 340, 440, 580	Allison 340/440	CV-A340, CV-A440
	Dart Convair 240, 340, 440	Convair 600/640	CV-600, CV-640
Groupement d'Interet Economique Airbus Industrie, France	A-300B Airbus		A-300
	A-300-600R, A-310		A-310
	A-320 Airbus		A-320
	A-340 Airbus		A-340

FIGURE 5.1.2.4.—Continued
PILOT CERTIFICATE AIRCRAFT TYPE DESIGNATIONS - AIRPLANES

MANUFACTURER	MODEL DESIGNATION	PRIOR DESIGNATION	CURRENT DESIGNATION
Grumman Aircraft Engineering Corp., USA	TBF, TBM AF-2S (Ref. T.O.AR-36)	Grumman TBF	G-TBM
	G-64 Albatross, GSA16		G-111
	G-73 Turbo Mallard (Frakes Conversion)	FS-73T	G-73T
	G-73 Mallard	Grumman G-73	G-73
	S2F/C1A		G-S2
Gulfstream Aerospace Corporation, USA	G-159 Gulfstream VC-4A, TC-4C	Grumman G-159	G-159
	G-1159 Gulfstream	Grumman G-1159	G-1159
	G-1159C		G-IV
Hamburger Flugzeubau G.M.B.H., Germany	Hansa Jet 320		HF-320
Handley Page Aircraft Co., Ltd., UK	Herald 300	Handley Page 300	HP-300
Hawker Siddeley Aviation Ltd., UK	DH-106, Comet 4C	deHavilland 4C	HS-106
	DH-114 Heron	Hawker Siddeley 114	HS-114
(Also see Raytheon Hawker Corporate Jets)	Hawker Siddeley 748		HS-748
Howard Aero Corp.	(See Dee Howard Co.)		
Israel Aircraft Ltd., Israel	Westwind 1124		IA-JET
	Astra IAI-1125		IA-1125
(See Aero Commander)	ARAVA IA 101B		IA-101
Lockheed Aircraft Corp., USA	Lightning P-38	Lockheed P-38	L-P38
	B-34, PV-1, PV-2	Lockheed B-34	L-B34
	Series 14	Lockheed 14	L-14
	18, C-57, C-60, R-50, Learstar	Lockheed 18	L-18
	P2V7 (Restricted), LP2V-5F		L-P2V
	Constellation 049, 149, 649, 749, 1049, 1649	Lockheed Constellation	L-1049
	Electra 188, P-3	Lockheed 188	L-188
	Jetstar, C-140, Jetstar II, 1329-25	Lockheed 1329	L-1329
	382, C-130	Lockheed 382	L-382
	300, C-141	Lockheed 300	L-300
	L-1011 Tristar		L-1011
	T-33		T-33

FIGURE 5.1.2.4.—Continued
PILOT CERTIFICATE AIRCRAFT TYPE DESIGNATIONS - AIRPLANES

MANUFACTURER	MODEL DESIGNATION	PRIOR DESIGNATION	CURRENT DESIGNATION
Martin-Marietta Corp., USA	B-26 Marauder	Martin B-26C	M-B26
	PBM-5, C-162	Martin PBM-5	M-PBM-5
	Mariner 202/404	Martin 202/404	M-202, M-404
McDonnell Douglas Aircraft Corp., USA	AD-4N		AD-4N
	A-20	Douglas A-20	DC-A20
	A-24, SBD	Douglas A-24	DC-A24
	B-26	Douglas B-26	DC-B26
	B-18	Douglas B-18	DC-B18
	B-23, UC-67	Douglas B-23	DC-B23
	DC-2, C-32, C-34, C-39, C-42	Douglas DC-2	DC-2
	DC-3, C-47, C-117	Douglas DC-3	DC-3
	Super DC-3, C-117D	Douglas DC-3S	DC-3S
	DC-3 (Turboprop)		DC-3TP
	DC-4, C-54	Douglas DC-4	DC-4
	DC-6, DC-7, C-118	Douglas DC-6, DC-7	DC-6, DC-7
	DC-8	Douglas DC-8	DC-8
	DC-9, DC-9-50, C-9 DC-9-80, MD-80	Douglas DC-9	DC-9
	DC-10, KC-10		DC-10
	MD-11		MD-11
Mitsubishi Aircraft International, Inc.	(See Beech Aircraft)		
Morane-Saulnier, France	MS760	Morane-Saulnier MS-760	MS-760
Nihon Aeroplane Manufacturing Co., Ltd., Japan	YS-11	NAMC YS-11	YS-11
Nord Aviation	262A Super Broussard, ND262/262FM Mohawk 298	Nord 262 ND 262/262FM	ND-262
North American Rockwell Corp., USA	B-25 Mitchell	North American	N-B25
	NA-265 Sabreliner T-39	North American NA-265	N-265
Northrop Corp., USA	P-61 Black Widow	Northrop P-61	NH-P61
Piaggio, Italy	Piaggio-Douglas 808	Piaggio Douglas PD-808	P-808
Piper Aircraft, USA	PA-42-720 (Restricted)		PA-42R
Raytheon Hawker Corporate Jets	BAE-125-1000		BAE-125

FIGURE 5.1.2.4.—Continued
PILOT CERTIFICATE AIRCRAFT TYPE DESIGNATIONS - AIRPLANES

MANUFACTURER	MODEL DESIGNATION	PRIOR DESIGNATION	CURRENT DESIGNATION
Raytheon Hawker—Continued (Also see Hawker Siddeley)	DH-125, BH-125, HS-125 Series (except -1000)	Hawker Siddeley 125	HS-125
SAAB-Fairchild International, S-58188 Linkoping, Sweden	SAAB-Fairchild 340		SF-340
Short Brothers and Harland Ltd., Northern Ireland (UK)	SD3-30, SD3-60 Variant 200	SD3-30	SD-3
Sikorsky Aircraft Division of United Aircraft Corp., USA	VS-44AC-32, C-34	Sikorsky VS-44	SK-44
	S-43 Series	Sikorsky S-43	SK-43
Sud Aviation, France	SE Caravelle I, II, VIR	SUD 210	S-210
Swearingen Fairchild Aircraft Corp.	SA 226-TC, SA-227-AC, AT, TT SA-227-DC C-26A, C-26B SA-227-CC		SA-227
Vickers-Armstrong British Aircraft Corp., IJK	700 & 800 Series	Vickers Viscount	VC-700, VC-800

FIGURE 5.1.2.5.
PILOT CERTIFICATE AIRCRAFT TYPE DESIGNATIONS - ROTORCRAFT

MANUFACTURER	MODEL DESIGNATION	PRIOR DESIGNATION	CURRENT DESIGNATION
Bell USA	BH-214ST		BH-14ST
Boeing Vertol, USA	107-II, H-46 Kawasaki, KV107-II	Vertol 107 II	BV-107
	114, CH-47A, B, and C Series BV-234 (CH-47D)		BV-114 or BV-234
	BV-44, H-21	Vertol 44	BV-44
Sikorsky, USA	H-37 Series		SK-56
	S-58 Series, H-34 Series	Sikorsky S-58, S-58IT	SK-58
	S-61 Series, H-3 Series	Sikorsky S-61	SK-61
	S-64 Series, CH-54A Series	Sikorsky S-64	SK-64
	HH-53, CH-53A	Sikorsky S-65	SK-65
Sud Aviation, USA	SA321F		S-321
	SA330F, SA-332 AS-330		S-330

The following applies to helicopters weighing 12,500 pounds or less on which type ratings are issued to holders of airline transport pilot certificates only:

MANUFACTURER	MODEL DESIGNATION	PRIOR DESIGNATION	CURRENT DESIGNATION
Aerospatiale, France	SA 341/342 Gazelle SA 360		SA-341
	AS 350 Astar		AS-350
	SA 355 Twinstar		AS-355
	SA-360C Dauphine (SE)		SA-360
	SA 365 Dauphine (ME)		SA-365
	SA 365 Dolphin (HH-65)		SA-365
Bell, USA	47 Series H-13 Series	Bell 47	BH-47
	204-B, UHI-B, -D, H205B	Bell 204	BH-204
	206A, 206B	Bell 206	BH-206
	212/412 Series	Bell 212	BH-212
	214 Series (Except ST)		BH-214
	214ST		BH-214 ST

FIGURE 5.1.2.5.—Continued
PILOT CERTIFICATE AIRCRAFT TYPE DESIGNATIONS - ROTORCRAFT

MANUFACTURER	MODEL DESIGNATION	PRIOR DESIGNATION	CURRENT DESIGNATION
Bell, USA—Continued	222 Series		BH-222
	412		BH-412
Brantley, USA	B-2 (YH03BR)	Brantley B-2	BY-2
	B-305	Brantley B-305	BY-305
Construzioni Aeronautiche Giovanni Agusta, Italy	A109 Agusta		A-109
Enstrom, USA	F-28	Enstrom F-28	EN-28
Hiller, USA	UH-12 Series, H-23 Series	Hiller UH-12	HH-12
Fairchild, USA	FH-1100	FH-1100	FA-1100
Hughes, USA (Schweizer)	300, 269 Series	Hughes 269A	HU-269
	500, 369 Series	Hughes 500	HU-369
Kaman, USA	K-190A	Kaman K-190A	KM-190
	K-225	Kaman K-225	KM-225
	K-240, HTK-1	Kaman K-240	KM-240
	K-600		KM-600
Lockheed, USA	Lockheed California 286	Lockheed California 286	L-286
McDonnell Douglas	Notar MD-500 369-E, 369FF		MD-500N, HU-369
Messerschmitt Bolkow Gmbh (West Germany)	BO-105A		BO-105
	BK-117-A1		BK-117
Omega, USA	12D1A	Omega 12D1	OM-12
Piasecki, USA	HRP-1, HRP-2	Piasecki HRP	PI-HRP
Robinson Helicopter	R-22		R-22
	R-44		R-44
Scheutzow, USA	Model B		SC
Sikorsky, USA	R-4B	Sikorsky R-4B	SK-4
	R-5A, YR-6A R-6A, HOS-1	Sikorsky R-5A	SK-5
	S-51	Sikorsky S-51	SK-51
	S-52 Series	Sikorsky S-52	SK-52
	S-55, H-19 Series	Sikorsky S-55	SK-55
	S-62A, HH-52A	Sikorsky S-62	SK-62
	S-76		SK-76
Silvercraft, USA	SPA-SH4		SI-4

FIGURE 5.1.2.5.—Continued
PILOT CERTIFICATE AIRCRAFT TYPE DESIGNATIONS - ROTORCRAFT

MANUFACTURER	MODEL DESIGNATION	PRIOR DESIGNATION	CURRENT DESIGNATION
Sud Aviation (Aerospatiale)	SE 3130, SE 313B, SE 3160, SA 316B, SA 3180, SA 318B, SA 318C, SA 315B	Sud Alouette II/III	S-3130
	SO 1221	Sud Djinn	S-1221
Westland Helicopters, Inc., Yeoville, England	W-30		WH-30

FIGURE 5.2.2.1.
ATP/TYPE RATING ORAL TEST JOB AID—AIRPLANE

THE ORAL TEST

[ ] A. Knowledge of aircraft systems:

[ ]	Hydraulic	[ ]	Electrical
[ ]	Pneumatic	[ ]	Powerplants
[ ]	Flight instruments	[ ]	Flight controls
[ ]	Landing gear, wheel	[ ]	Autopilot, F/D
[ ]	EFIS, FMS	[ ]	Navigation systems
[ ]	Fuel	[ ]	Propellers
[ ]	Pressurization	[ ]	Air conditioning

[ ] B. Knowledge of and ability to compute performance data, takeoff, landing, and cruise performance

[ ] C. Knowledge of the flight engineer station

[ ] D. Weight and balance

[ ] E. Ability to perform or state immediate action items

[ ] F. Knowledge of and ability to state operating limitations

[ ] G. Knowledge of MEL

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CHAPTER 2. AIRLINE TRANSPORT PILOT CERTIFICATES

SECTION 3. CONDUCT OF FLIGHT TESTS IN AIRPLANE FLIGHT SIMULATORS AND TRAINING DEVICES

105. ACCEPTABLE METHODS FOR ACCOMPLISHING AN AIRPLANE FLIGHT TEST. There are three acceptable methods for accomplishing an airplane flight test. Flight tests may always be conducted entirely in an airplane. Under certain circumstances, flight tests may be conducted entirely in an advanced flight simulator. Flight tests may also be conducted in two segments in which certain specific events may be tested in a flight training device (FTD) or flight simulator, while other events must be tested in an airplane. The method used depends on the level of approval of the FTD or flight simulator and on the status of the applicant. Explanations of these methods are as follows:

A. Level D Flight Simulators (Previously referred to as Phase Three flight simulators): All pilots employed by an operator, regardless of training category, are eligible for the entire flight test in a level D flight simulator without a subsequent airplane segment.

B. Level C Flight Simulators (Previously referred to as Phase Two flight simulators): The method that may be used depends on the training status of the applicant.

(1) Transition Training Applicants: For those applicants who have completed transition training, the entire flight test may be conducted in either a level C or D flight simulator.

(2) Upgrade Training Applicants: Those applicants who have completed upgrade training and who meet the criteria of either 105B(2)(a) or (b) are eligible to complete the entire flight test in a level C flight simulator. When an upgrade applicant does not meet these criteria, the combination of a flight simulator and airplane flight test is required.

(a) The applicant must have been previously qualified as second-in-command (SIC) in the airplane type. The applicant must have acquired 500 hours as an SIC for that operator in the same group of airplanes. The applicant must be currently serving as an SIC for that operator in the same group of airplanes.

(b) The applicant must be currently serving as an SIC with that operator in an airplane of the same group. The applicant must have a minimum of 2,500 flight hours as an SIC in airplanes of the same group with that operator. The applicant must have served as SIC on at least two airplanes of the same group with that operator.

(3) Initial Equipment Training Applicants. Federal Aviation Regulations (FAR) Part 121, Appendix H, permits SIC's that are being trained as pilot-in-command (PIC) in an initial equipment curriculum and who meet the qualifications specified by subparagraph 105B(2)(b), to complete training and be tested in a level C flight simulator. All other applicants must be trained and tested on specific events in an airplane.

(4) Initial New-Hire Training Applicants. All applicants that are being trained in an initial new-hire curriculum using a level C flight simulator must be trained and tested in specific events in an airplane.

NOTE: Line-oriented flight training (LOFT) is required for all applicants that are to be tested entirely in a level C or D flight simulator.

C. Levels A and B Flight Simulators (Previously referred to as visual and Phase One simulators, respectively): When a level A or level B flight simulator is used for a flight test, all events may be evaluated in the flight simulator. However, the evaluation of certain specified events in a subsequent airplane flight test segment is required for all applicants.

D. Level 7 and Lower Flight Training Devices. When a level 7 or lower FTD is used for a flight test, all applicants are required to take a subsequent airplane flight test segment. If training on a particular event may be accomplished in a training device, flight testing of that event may also be conducted in that device. Before beginning a flight test in a level 7 or lower training device, inspectors or examiners must determine which events have been approved for the specific device.

107. SELECTION OF FLIGHT TEST JOB AIDS. Job aids have been prepared to assist inspec-

tors and examiners in accomplishing the specific requirements of the three methods for conducting flight tests.

A. Single-Segment Flight Tests. When a flight test is conducted entirely in an airplane or entirely in a flight simulator, inspectors and examiners should use the "ATP/Type Rating Single-Segment Flight Test Job Aid—Flight Simulator or Airplane" (see figure 5.2.3.1.).

B. Two-Segment Flight Tests. When a flight test is conducted in two segments (the first segment in a level A flight simulator or any higher level of flight simulator and the second segment in an airplane), there is a standard set of events that must be evaluated on the airplane segment. All remaining events are usually evaluated in the flight simulator segment. If an event normally evaluated in the flight simulator segment is not accomplished in that segment, it must subsequently be evaluated in the airplane segment. The events are listed on the "ATP/Type Rating Two-Segment Flight Test Job Aid—Flight Simulator and Airplane " (see figure 5.2.3.2.).

C. Level 7 or Lower Flight Training Devices. When a flight test is conducted in two segments, the first segment in a level 7 or lower FTD and the second segment in an airplane, inspectors and examiners should use the "ATP/Type Rating Two-Segment Flight Test Job Aid—Flight Training Device and Airplane " (see figure 5.2.3.3.).

109. PLANNING A FLIGHT SIMULATOR OR TRAINING DEVICE FLIGHT TEST SEGMENT. The most important factor in conducting an efficient and effective flight test is proper planning. Principal operations inspectors (POI) shall develop briefing guides for inspectors and examiners to use in planning flight tests. The events that may be accomplished in each device should be specified in the briefing guide. Also specified should be the takeoff and landing minimums the operator is authorized to use and whether training has been conducted on circling approaches. If Category (CAT) II or CAT III operations are authorized, the additional approaches required for pilot qualification in those operations should be specified. The following recommended planning sequence is presented for guidance to inspectors and examiners.

A. Determine the Method of the Flight Test. Whether a flight test may be conducted entirely in a flight simulator depends on the level of the flight simulator to be used and the category of training that the applicant has completed. If the applicant or simulator does not qualify for the complete test to be conducted in a flight simulator, the flight test must be conducted in two segments. The first segment must be conducted in a flight simulator or FTD and the second in an airplane (see paragraph 105).

B. Select the Appropriate Job Aid. A job aid has been prepared for each acceptable method of conducting a flight test (see paragraph 107). Job aids are available on the district office Job Aid Disk (see examples of job aids at the end of this section).

C. Determine Flight Simulator and Training Device Capabilities. Inspectors and examiners should familiarize themselves with capabilities of the specific flight simulator or training device to be used.

(1) Inspectors and examiners should determine what airport visual models the particular simulator is capable of generating.

(2) Inspectors and examiners should review the approaches and departures that are available at these airports. It may be necessary and desirable for inspectors or examiners to conduct the flight test at multiple airports.

(3) The problems and malfunctions to be programmed into the flight simulator should be planned before beginning the flight test.

D. Review Operations Specifications Authorizations. Inspectors shall acquaint themselves with the operator's operations specifications to determine the following:

- The types of authorized approaches
- The authorized minimums for takeoffs and landings
- Any authorized special operations

E. Determine CAT II or CAT III Approach Requirements. If CAT II or CAT III procedures are to be evaluated in conjunction with the certification, the inspector or examiner must coordinate with the POI or aircrew program manager (APM) and determine the number and type of additional approaches that must be evaluated.

F. Review the Operator's Manual. The inspector shall become acquainted with the operator's aircraft operating manual, particularly the sections on authorized minimums, flight maneuvers, crew coordination, and procedures.

G. Plan a Scenario. From the information learned in the previous steps, inspectors or examiners should be able to plan a scenario that permits efficient use of time. The scenario should present test events in a realistic sequence. The environmental conditions in which the events are presented must be planned before the flight test. It is recommended that inspectors and examiners use the job aid when planning the

flight test. For example, the sequence for which events will be presented may be numbered in the blocks provided. When planning flight tests, the events and the environmental conditions should be varied from one flight test to another flight test. This variety ensures that applicants are presented with new problems and that the flight testing includes a sampling of the operator's entire pilot training program over a period of time.

H. Determine Simulator Operation. Either the inspector or an operator's employee may operate the simulator's control panel during the flight test. Before an inspector operates a flight simulator or training device control panel, that inspector must receive instruction and a clearance from an authorized representative of the operator. When an operator's employee operates the simulator control panel, that employee must be briefed on the sequence of events and signals to be used during the flight test. The inspector shall not delegate the flight test planning function to an operator's employee but must plan the sequencing of events and the conditions under which events are to be conducted. The inspector should act as the air traffic control (ATC) controller and issue all clearances.

111. APPLICANT BRIEFING. Before beginning the flight test, the inspector or examiner shall brief an applicant on how the flight test is to be conducted and what is to be required of the applicant on the flight test. A briefing outline is included on applicable job aids. Inspectors and examiners are encouraged to develop their own expanded, individual supplements to the outline on the job aid.

113. SUPPORTING CREWMEMBERS. All crew positions required by the approved flight manual (AFM) must be occupied by qualified personnel during flight tests that are conducted in a flight simulator or training device. It is recommended that the supporting crewmember not be an applicant for a certificate or rating. These individuals do not have to be current. The inspector or examiner shall not occupy a crew position during a flight test conducted in a flight simulator or training device.

A. Inspectors and examiners shall brief supporting crewmembers that they are to perform their duties as specified by the operator's aircraft operating manual. Supporting crewmembers must provide normal crew coordination support; however, they shall not be permitted to lead the applicant when the applicant is expected to take the initiative.

B. The applicant's ability to compute takeoff and approach data is evaluated on the oral test. Unless data computation is specifically the PIC's duty, it is not required during the flight test segment. Inspectors and examiners should coordinate with a supporting crewmember to provide the data required during the flight test.

115. CONDUCTING A FLIGHT TEST IN A FLIGHT SIMULATOR OR TRAINING DEVICE. Conducting a flight test in a flight simulator or training device is a skill requiring study and practice. Inspectors and examiners must endeavor to conduct flight tests in a manner that reproduces actual flight conditions as accurately as possible. Prior planning is an essential element. See paragraph 109.

A. Inspectors and examiners should avoid asking unnecessary questions, making comments, and shall discourage conversations not specifically concerning the conduct of the flight test. Inspectors and examiners should take notes during the flight test for use during debriefing.

B. When possible, the inspector or examiner should program the initial flight test parameters into the flight simulator before an applicant arrives. When this is not possible, the inspector or examiner should arrange to have someone else program the parameters into the flight simulator. The inspector's or examiner's attention should be focused on the actions of the applicant and crew during the cockpit preparation phase of the flight test.

C. Inspectors and examiners shall use correct ATC terminology. Clearances should be issued as they would be issued in actual flight.

D. Inspectors and examiners should usually avoid use of the repositioning and freeze features of the flight simulator during the flight test to ensure realism and to avoid disorienting the applicant.

E. The flight test must be paced so that the applicant is not rushed. Events should be presented in an orderly and efficient manner. Inspectors and examiners who regularly conduct flight tests usually require less time to conduct an adequate flight test than less experienced inspectors and examiners. Experience has shown that proficient inspectors and examiners can conduct a complete airline transport pilot (ATP) or type rating simulator flight test in a multiengine, transport category airplane in approximately 2 hours. A flight test lasting more than 2 ½ hours (assuming no flight simulator malfunctions) may indicate poor performance on the part of the applicant or poor technique on the part of the inspector or examiner.

(1) Waiving events can reduce the time; however, events shall not be waived for the purpose of completing a flight test within a time schedule. It is

not an acceptable practice for an operator to place a maximum on the time allotted for a certification flight test.

(2) Inspectors and examiners are required to evaluate those normal, abnormal, and emergency procedures that are published in the operator's aircraft operating manual but which are not explicitly specified as flight test events in FAR Part 61, Appendix A. It is not practical or necessary to evaluate the applicant in every event in which the applicant has received training. Two or three of these events is a reasonable number per flight test and should accomplish the purpose of ensuring that the applicant is proficient throughout the range of events in which training was conducted. The flight test is a test of proficiency and not of endurance. The inspector or examiner should not extend a flight test when the applicant's proficiency is in question. If the inspector or examiner is not convinced of the applicant's basic proficiency from observing the required events, the applicant's level of proficiency is usually not acceptable.

F. When a flight simulator malfunctions, it may appear to the applicant to be a problem with an aircraft system. When this or any other problem occurs, the applicant should not assume that the problem is a flight simulator malfunction, but should deal with it as though it has been encountered in an airplane. If a malfunction affects handling qualities, the flight test should be suspended until maintenance can be conducted. Inspectors and examiners must exercise judgment in such cases. It is undesirable to cause unnecessary delays, but it is unacceptable to conduct a flight test in a flight simulator that does not accurately represent the airplane's handling qualities. When the flight simulator's handling quality is in doubt, it is appropriate for the inspector or examiner to fly the flight simulator to assess the state of its handling qualities.

G. Occasionally, a flight test will be delayed or interrupted due to malfunctions or power failures. When such interruptions occur, the inspector or examiner should be aware of the nervous and fatigue state of the applicant. In fairness to the applicant, it may become necessary for the inspector or examiner to reschedule the remaining portion of the flight test segment.

117. DEBRIEFING. The inspector or examiner shall inform the applicant of the results of the flight test segment during the debriefing. See subparagraph 33F.

118. - 122. RESERVED.

FIGURE 5.2.3.1.
ATP/TYPE RATING SINGLE-SEGMENT FLIGHT TEST JOB AID
FLIGHT SIMULATOR OR AIRPLANE

GROUND OPERATIONS	
Preflight Inspection	[ ]
Taxiing or Sailing	[ ]
Powerplant Checks	[ ]
TAKEOFFS	
Normal	[ ]
Instrument	[ ]
Crosswind	[ ]
With Powerplant Failure	[ ]
Rejected Takeoff	[ ]
INSTRUMENT PROCEDURES	
Area Departure	[ ]* 1, but not both,
Area Arrival	[ ]* may be waived
Holding	[ ]*
Normal Instrument Landing System (ILS) Approach	[ ] With F/D
Autopilot Coupled ILS	[ ] If equipped
Engine-Out ILS	[ ]
Nonprecision Approach	[ ]
Second Nonprecision Approach	[ ]* If done
Circling Approach (Not required if the operator does not train for the event.)	[ ] in training
Missed Approach from an ILS	[ ]
Engine-Out Missed Approach	[ ]
IN-FLIGHT MANEUVERS	
Steep Turns	[ ]*
Approaches to Stalls	[ ]* 2 may be waived
Specific Flight Characteristics	[ ]* If required
Powerplant Failure	[ ]
VISUAL APPROACHES	
No-Flap/Partial-Flap Approach	[ ] If required
With 50 % Powerplants Inoperative	[ ]
LANDINGS	
(Landings may be combined - minimum of 3 required)	
Normal Landing	[ ]
Landing from an ILS	[ ]
Crosswind Landing	[ ]
Landing with 50 % Powerplants Inoperative	[ ]
From Circling Approach	[ ] If required
Rejected Landing	[ ]
Accuracy Landings, single-engine only (3)	[ ] If no commercial

Events annotated with * may be waived, if appropriate conditions are met.

FIGURE 5.2.3.1.—Continued
ATP/TYPE RATING SINGLE-SEGMENT FLIGHT TEST JOB AID
FLIGHT SIMULATOR OR AIRPLANE

NORMAL, ABNORMAL, AND EMERGENCY PROCEDURES—SAMPLE

[ ] Anti-Icing and Deicing; Hydraulic, Electrical, Pneumatic, and Other Systems Failures; Gear, Flaps, Control Systems; Navigation and Communications Equipment; Fire in Flight, Smoke Control; Decompression, Emergency Descent, Emergency Landing, and Evacuation.

NOTE: Inspectors should refer to the appropriate section of "Airline Transport Pilot and Type Rating Practical Test Standards" (FAA-S-8081-5), as amended, for maneuver tolerances.

BRIEFINGS

[ ] A. Brief Applicant:
1. Departure point, destination, route, weather,
2. Aircraft weight and fuel load
3. Role of inspector
4. Use of crewmembers and autopilot (Applicant is in command and must perform command duties successfully.)
5. Review minimums to be used on test

[ ] B. Brief Supporting Crewmembers:
1. Crew will perform normal duties of their positions
2. Will act in support role and not initiate - may be asked to delete calls, altitude alerts, etc.
3. Duties of safety pilot

[ ] C. Safety Pilot Briefing:
1. Touch-and-go procedures
2. Use of hood
3. Transfer of controls
4. Simulated emergencies
5. Response to an actual emergency
6. V_1 cut
7. Other specific events

FIGURE 5.2.3.2.
ATP/TYPE RATING TWO-SEGMENT FLIGHT TEST JOB AID
FLIGHT SIMULATOR AND AIRPLANE

APPLICANT NAME: _____

	SIMULATOR	AIRPLANE
INSPECTOR OR EXAMINER NAME:	_____	_____
OFFICE:	_____	_____
DATE:	_____	_____

Events annotated with * may be waived, if appropriate conditions are met. Indicate those events not evaluated in the simulator with an "NE" in the [ ] for the event.

	SIMULATOR	AIRPLANE
GROUND OPERATIONS		
Preflight Inspection	[ ]<cockpit	[ ]*<exterior
Taxiing or Sailing		[ ]
Powerplant Checks	[ ]	
TAKEOFFS		
Normal		[ ]
Instrument	[ ]	
Crosswind	[ ]	[ ]
With Powerplant Failure	[ ]	
Rejected Takeoff	[ ]	
INSTRUMENT PROCEDURES		
Area Departure	[ ]* 1, but not both,	
Area Arrival	[ ]* may be waived	
Holding	[ ]*	
Normal Instrument Landing System (ILS) Approach	[ ] With F/D	
Autopilot Coupled ILS	[ ] If equipped	
Engine-Out ILS	[ ]	
Nonprecision Approach	[ ]	
Second Nonprecision Approach	[ ]* If done in training	
Circling Approach (Not required if the operator does not train for the event.)	[ ]	
Missed Approach from an ILS	[ ]	
Engine-Out Missed Approach	[ ]	
Missed Approach in Airplane		[ ]
IN-FLIGHT MANEUVERS		
Steep Turns	[ ]*	
Approaches to Stalls	[ ]* 2 may be waived	
Specific Flight Characteristics	[ ]* If required by FSB	
Powerplant Failure	[ ]	
VISUAL APPROACHES		
No-Flap	[ ] If required	
With 2 Engines Inoperative	[ ] 3- & 4-engine airplanes	

FIGURE 5.2.3.2.—Continued
ATP/TYPE RATING TWO-SEGMENT FLIGHT TEST JOB AID
FLIGHT SIMULATOR AND AIRPLANE

LANDINGS	SIMULATOR	AIRPLANE
Normal Landing		[ ]
Landing from an ILS	[ ]	
Crosswind Landing	[ ]	[ ]
Landing with 2 Engines Inoperative	[ ]3- & 4-engine airplanes	
Engine-Out Landing		[ ]
From Circling Approach	[ ]	[ ] If required
Rejected Landing	[ ]	
Accuracy Landings (3) Single Engine only		[ ] If no commercial

NOTE: Landings may be combined. A minimum of 3 must be accomplished in the airplane; however, if the landing from an ILS is completed in the simulator, only two landings need to be accomplished in the airplane.

NORMAL, ABNORMAL, AND EMERGENCY PROCEDURES—SAMPLE

[ ] Anti-Icing and Deicing; Hydraulic, Electrical, Pneumatic, and Other Systems Failures; Gear, Flaps, Control Systems; Navigation and Communications Equipment; Fire in Flight, Smoke Control; Decompression, Emergency Descent, Emergency Landing, and Evacuation.

NOTE: Inspectors should refer to the appropriate section of "Airline Transport Pilot and Type Rating Practical Test Standards" (FAA-S-8081-5), as amended, for maneuver tolerances.

BRIEFINGS

[ ] A. Brief Applicant:
1. Departure point, destination, route, weather
2. Aircraft weight and fuel load
3. Role of inspector
4. Use of crewmembers and autopilot (Applicant is in command and must perform command duties successfully.)
5. Review minimums to be used on test

[ ] B. Brief Supporting Crewmembers:
1. Crew will perform normal duties of their positions
2. Will act in support role and not initiate - may be asked to delete calls, altitude alerts, etc.
3. Duties of safety pilot

[ ] C. Safety Pilot Briefing:
1. Touch-and-go procedures
2. Use of hood
3. Transfer of controls
4. Simulated emergencies
5. Response to an actual emergency
6. V_1 cut
7. Other specific events

FIGURE 5.2.3.3.
ATP/TYPE RATING TWO-SEGMENT FLIGHT TEST JOB AID
FLIGHT TRAINING DEVICE AND AIRPLANE

APPLICANT NAME: _____

	TRAINING DEVICE	AIRPLANE
INSPECTOR OR EXAMINER NAME:	_____	_____
OFFICE:	_____	_____
DATE:	_____	_____

Events annotated with * may be waived, if appropriate conditions are met. Indicate those events not evaluated in the simulator with an "NE" in the [ ] for the event.

GROUND OPERATIONS	**SIMULATOR**	**AIRPLANE**
Preflight Inspection	[ ]<cockpit	[ ]*<exterior
Taxiing or Sailing		[ ]
Powerplant Checks	[ ]	[ ]
TAKEOFFS		
Normal		[ ]
Instrument		[ ]
Crosswind		[ ]
With Powerplant Failure		[ ]
Rejected Takeoff		[ ]
INSTRUMENT PROCEDURES		
Area Departure	[ ]*	[ ]*One, but not both,
Area Arrival	[ ]*	[ ]*may be waived
Holding	[ ]*	[ ]*
Normal Instrument Landing System (ILS) Approach		[ ] With F/D
Autopilot Coupled ILS	[ ]	[ ] If equipped
Engine-Out ILS	[ ]	[ ]
Nonprecision Approach	[ ]	[ ]
Second Nonprecision Approach	[ ]*	[ ]* If done in training
Circling Approach (Not required if the operator does not train for the event.)	[ ]	
Missed Approach from an ILS	[ ]	[ ]
Engine-Out Missed Approach	[ ]	[ ]
Missed Approach in Airplane		[ ]
IN-FLIGHT MANEUVERS		
Steep Turns	[ ]*	[ ]*
Approaches to Stalls	[ ]*	[ ]* 2 may be waived
Specific Flight Characteristics	[ ]*	[ ]* If required by FSB
Powerplant Failure	[ ]	
VISUAL APPROACHES		
No-Flap		[ ] If required
With 2 Engines Inoperative		[ ] 3- & 4-engine airplanes

FIGURE 5.2.3.3.—Continued
ATP/TYPE RATING TWO-SEGMENT FLIGHT TEST JOB AID
FLIGHT TRAINING DEVICE AND AIRPLANE

LANDINGS	AIRPLANE
Normal Landing	[ ]
Landing from an ILS	[ ]
Crosswind Landing	[ ]
Landing with 50% Powerplants Inoperative	[ ]
From Circling Approach	[ ] If required
Rejected Landing	[ ]
Accuracy Landings (3) Single Engine Only	[ ] If no commercial

NOTE: Landings may be combined; however, a minimum of 3 must be accomplished.

NORMAL, ABNORMAL, AND EMERGENCY PROCEDURES - SAMPLE

[ ] Anti-icing and Deicing; Hydraulic, Electrical, Pneumatic, and Other Systems Failures; Gear, Flap, Control Systems; Navigation and Communications equipment; Fire in Flight, Smoke Control; Decompression, Emergency Descent, Emergency Landing, and Evacuation.

NOTE: Inspectors should refer to the appropriate section of "Airline Transport Pilot and Type Rating Practical Test Standards" (FAA-S-8081-5), as amended, for maneuver tolerances.

BRIEFINGS

[ ] A. Brief Applicant:
1. Departure point, destination, route, weather
2. Aircraft weight and fuel load
3. Role of inspector
4. Use of crewmembers and autopilot (Applicant is in command and must perform command duties successfully.)
5. Review minimums to be used on test

[ ] B. Brief Supporting Crewmembers:
1. Crew will perform normal duties of their positions
2. Will act in support role and not initiate - may be asked to delete calls, altitude alerts, etc.
3. Duties of safety pilot

[ ] C. Safety Pilot Briefing:
1. Touch-and-go procedures
2. Use of hood
3. Transfer of controls
4. Simulated emergencies
5. Response to an actual emergency
6. V_1 cut
7. Other specific events

[PAGES 5-79 THROUGH 5-86 RESERVED]

CHAPTER 2. AIRLINE TRANSPORT PILOT CERTIFICATES

SECTION 4. CONDUCT OF FLIGHT TESTS IN AN AIRPLANE

123. AIRPLANE TRAINING BEFORE AIRPLANE FLIGHT TESTS. Before conducting a flight test segment in an airplane, the inspector or examiner must review the applicant's training records or a statement from a company official to ensure that the required training has been completed. When the flight test is conducted in two segments, training on certain events must be accomplished in the airplane before the airplane segment of the flight test can be conducted. When training has been conducted in a level 7 or lower flight training device (FTD), there will be certain events that have not been approved for flight training in that particular device. In this case, training on those events must be conducted in the airplane. When training is conducted in a level A or B flight simulator, the category of training determines which events the applicant must be trained in, in an airplane, before the airplane segment of the flight test is conducted. Table 5.2.4.1., at the end of this section, specifies the events in which the applicant must receive training in the airplane. Applicants trained in a level C simulator in a transition curriculum and certain applicants trained in an upgrade curriculum as specified in Federal Aviation Regulations (FAR) Part 121, Appendix H, may not be required to receive the training indicated in table 5.2.4.1. in an airplane (see paragraph 105). It is a common practice for operators to conduct airplane flight training immediately before a flight test on the same flight. In these cases, it is acceptable for the instructor to make oral certification that required training is completed and that the applicant is ready for the test. The training records, however, must be completed with the written certification after the flight test.

125. PLANNING THE FLIGHT. Planning is essential to the efficient and effective conduct of an airplane flight test. When an instructor or a check airman acts as the safety pilot (and pilot-in-command (PIC)), the inspector must coordinate closely with the instructor or check airman in the planning. Ideally, inspectors and examiners should plan to conduct the flight test at a location that provides for visual meteorological flight conditions, an uncongested air traffic environment, a non-noise-sensitive environment, and an airport with a number of navigational aids (NAVAID) and runways that provide flexibility. Since these ideal conditions are usually not available, the flight test may have to be conducted under less than ideal circumstances. Inspectors and examiners are encouraged to coordinate with the air traffic control (ATC) facility serving the location selected for the flight test to ensure that the test can be conducted in an acceptable manner. If the flight test cannot be conducted under acceptable conditions, the inspector or examiner must reschedule the flight test at a time and location where more satisfactory conditions prevail.

127. EVENTS REQUIRED IN AN AIRPLANE FLIGHT TEST. There are three methods of conducting a flight test in an airplane: (1) a flight test conducted entirely in an airplane; (2) a two-segment flight test conducted in a flight simulator and an airplane; and (3) a two-segment flight test conducted in an FTD and an airplane. Job aids have been prepared for each method of conducting a flight test in an airplane (see figures 5.2.3.1. through 5.2.3.3. at the end of section 3). Inspectors and examiners are encouraged to use the job aids to plan the flight test. For example, if the operator's aircraft operating manual does not allow circling approaches in less than visual flight rules (VFR) conditions, testing of the event is not required, and it may be marked off the job aid. Events not required for the class of airplane may also be marked off. For example, accuracy landings are not required in a multiengine airplane. These job aids are available on the district office Job Aid Disk.

A. Entire Flight Test in an Airplane. When an operator does not have access to a flight simulator or FTD, the flight test must be completed entirely in the airplane. All events required by FAR Part 61, Appendix A, must be accomplished during the flight test. Figure 5.2.3.1., the "ATP/Type Rating Single-Segment Flight Test Job Aid—Flight Simulator or Airplane," contains the events that are required for all classes of airplanes.

B. Airplane Segment of a Two-Segment Airplane/ Flight Simulator Flight Test. All events that are required by Far Part 61, Appendix A, are specified

in figure 5.2.3.2., the "ATP/Type Rating Two-Segment Flight Test Job Aid—Flight Simulator and Airplane." The events are separated into flight simulator and airplane segments, according to which specific events must be evaluated in the airplane segment. This job aid should be used for all flight tests in which the first segment is conducted in a level A or higher level of flight simulator.

C. Airplane Segment of a Two-Segment Airplane/ Flight Training Device Flight Test. All events that are required by FAR Part 61, Appendix A, are printed in figure 5.2.3.3., the "ATP/Type Rating Two-Segment Flight Test Job Aid—Flight Training Device and Airplane." The events are separated into an FTD segment and an airplane segment. Any event in which the applicant is not tested in the training device segment must be tested in the airplane. The inspector or examiner conducting the airplane segment of the flight test must determine the events in which the applicant was evaluated during the training device segment. The job aid may be used to transmit this information from the inspector or examiner conducting the training device segment of the flight test to the inspector or examiner who conducts the airplane segment of the flight test. The job aid must be signed and dated by the inspector or examiner conducting the training device segment of the test, and the events in which the applicant was not tested must be clearly marked.

129. PREFLIGHT BRIEFING. The inspector or examiner conducting the flight test shall ensure that everyone participating in the flight test is adequately briefed.

A. Supporting Crewmembers. The individual conducting the flight test shall brief the safety pilot and, if applicable, the flight engineer (FE), on the conduct of the flight. If an operator's instructor or check airman is the safety pilot, that individual must conduct the flight in accordance with the instructions given by the inspector. The safety pilot and, if applicable, the FE must provide normal crew coordination support, but must not be permitted to lead the applicant when the applicant is expected to take the initiative.

B. Applicant. Before beginning the flight test, the inspector or examiner shall brief the applicant on the use of other crewmembers and aircraft equipment, including the autopilot. The applicant must perform the functions of the PIC. The applicant must be briefed to immediately relinquish control and assume second-in-command (SIC) duties if a hazardous condition arises and the safety pilot takes control of the aircraft.

C. Safety Pilot. The safety pilot shall conduct a briefing on procedures to be used. The safety pilot briefing must cover, but is not limited to, the following:

- Transfer of aircraft control
- Touch-and-go procedures
- Procedures for simulating an inoperative engine
- Simulated abnormal and emergency procedures
- Response to an actual emergency
- Use of vision restriction devices

131. CREW QUALIFICATIONS. The crew, with the exception of the applicant, must be qualified and current. The safety pilot must have completed the operator's approved instructor or check airman training program and be familiar with the procedures for blocking the controls against incorrect applicant responses.

133. VISION RESTRICTION DEVICES. For instrument flight maneuvers, a vision restriction device acceptable to the inspector must be provided by the operator or applicant. The device must not limit the vision of the safety pilot or other crewmembers, including the inspector. An inspector or examiner shall not accept pillows, charts taped to windows, or other vision restriction devices that could jeopardize flight safety.

135. CONDUCT OF THE FLIGHT TEST IN AN AIRPLANE. Standard procedures, as specified in the operator's aircraft operating manual, must be followed in the performance of all maneuvers. All emergencies and abnormalities conducted in an airplane shall be simulated. An engine may be shut down and restarted in flight, provided the minimum altitude specified in the operator's aircraft operating manual is observed. Before a problem is introduced, the safety pilot shall announce to the crew that a simulated problem is being introduced.

A. Procedures for introducing simulated, abnormal, and emergency problems must be in accordance with the operator's aircraft operating manual, training manual, and other appropriate operator directives. Safety pilots may introduce problems by sounding a warning horn, a fire bell, or by illuminating a warning light, provided the warning can be produced with a test switch that does not activate a system. Circuit breakers will not be opened to introduce problems. When the emergency or abnormal checklist required by a simulated problem specifies that a circuit breaker be opened, the circuit breaker will only be opened if the action cannot be simulated, and the effect of opening the circuit breaker is to enhance

safety. For example, it is permissible to disable the ground proximity warning according to the checklist, on a no-flap approach, because the warning would continue to sound throughout the approach. It would not be permissible, however, to pull a circuit breaker on an electrically driven hydraulic pump that could be turned off by a switch. Deactivated systems shall be fully reactivated immediately after the need for deactivation has been met. For example, in some airplanes a hydraulic system must be depressurized before an alternate landing gear extension can be performed. In this case, the hydraulic system should be repressurized immediately after the landing gear is extended. It is appropriate to use streamers or other devices as reminders that systems have been deactivated.

B. On flight tests conducted entirely in an airplane, inspectors and examiners shall not limit the problems given to applicants to the required engine failures only. Problems should be realistic. The selection of such problems in an airplane is more limited than in a flight simulator, due to both safety and operational limitations. Certain problems, however, can be practically and safely conducted in an airplane. Examples include a simulated instrument failure that leads to the selection of alternate switching, a simulated hydraulic failure requiring a diversion to a takeoff alternate, or a simulated electrical fault requiring alternate landing gear or flap extension.

C. Should an actual malfunction occur while an emergency is being simulated, the flight test shall be immediately suspended, all systems restored to normal, and the problem resolved before the flight test is restarted. If a throttle has been retarded when an actual malfunction occurs, the safety pilot shall immediately restore engine thrust to normal on all engines.

137. SAFETY. Safety is the specific responsibility of the safety pilot. The safety pilot must ensure that a testing event is not allowed to deteriorate to the point where flying safety is compromised. The safety pilot must take early and positive measures to prevent hazardous situations from arising. If the safety pilot takes control of the airplane due to no fault of the applicant, or before it was clear whether the applicant could or could not have recovered successfully, the event shall be repeated. If, however, the safety pilot believes there is a need to instruct, give directions, or take control of the airplane due to the lack of proficiency of an applicant, the event and the entire flight test must be considered unsatisfactory.

139. MODIFICATION OF EVENTS. Inspectors and examiners are authorized by FAR § 61.157 to modify events when the performance characteristics of an airplane used for a flight test make an event unsafe or unpractical. For example, the airplane certification regulations for light twin-engine airplanes may not require that the airplane be capable of climbing with a failed engine. In such airplanes, an engine-out missed approach may not be possible, or may be unsafe. Inspectors and examiners may also modify events to accomplish a flight test when weather, ATC, or traffic requirements make accomplishing a specific event in the conventional manner impossible. For example, if traffic flow prevents flying the published missed approach procedure, the inspector or examiner may (in visual conditions and with ATC concurrence) construct an alternate procedure. The authority to modify events does not extend to modifying aircraft operating procedures.

141. DEBRIEFING. The inspector or examiner shall inform the applicant of the results of the flight test and conduct a debriefing. See subparagraph 33F.

142.–144. RESERVED.

TABLE 5.2.4.1.
TRAINING IN AN AIRPLANE REQUIRED BEFORE THE AIRPLANE SEGMENT OF A TWO-SEGMENT FLIGHT TEST

TRAINING EVENT	CATEGORY OF TRAINING			
	INITIAL	TRANSI-TION	UPGRADE	
Normal Takeoff	X	X	X	
Normal Landing	X	X	X	
Crosswind Takeoff & Landing	X	X	X	
Normal Instrument Landing System (ILS)	X	X	X	
Night Landing—Can Be Done on Operating Experience (OE)	X	X	X	
Landing from an ILS	X			
Engine-Out ILS	X			
Engine-Out Landing (To a Full Stop)	X			
Missed Approach	X			
Rejected Landing	X			
Approach and Landing with 50% Powerplants Inoperative	X			
Circling Maneuver (If Required For Carrier)	X			
WHEN REQUIRED BY FSB				
Landing, Stab Out of Trim	X			
Missed Approach with Stab Out of Trim	X			
No-Flap Approach	X			
Partial-Flap Approach	X			
Any Other Required Event	X			

[PAGES 5-91 THROUGH 5-96 RESERVED]

CHAPTER 2. AIRLINE TRANSPORT PILOT CERTIFICATES

SECTION 5. ORAL AND FLIGHT TEST EVENTS IN HELICOPTERS

145. DESCRIPTION OF SPECIFIC EVENTS. Inspectors and examiners should use the "ATP/Type Rating Oral Test Job Aid—Helicopter" and the "ATP/Type Rating Flight Test Job Aid—Helicopter" when conducting oral and flight tests (see figures 5.2.5.1. and 5.2.5.2.). The events required on these tests are listed on the job aids. In the paragraphs that follow, the conditions and techniques for presenting selected events are provided for the purpose of increasing standardization, reliability, and validity of the flight test process for helicopters.

147. WAIVER OR MODIFICATION OF FLIGHT TEST EVENTS. Federal Aviation Regulations (FAR) § 61.163(a) authorizes inspectors and examiners to modify or waive the events specified by FAR Part 61, Appendix B, to ensure reasonable and safe use of the helicopter during flight. Inspectors and examiners should not waive an event for convenience, but shall not hesitate to use the waiver authority for the purpose of safety.

149. PREPARATION AND SURFACE OPERATION EVENTS. An applicant shall be observed performing the inspection of the helicopter interior, exterior, and emergency equipment while performing engine-start, taxi, and powerplant checks in accordance with the operator's aircraft operating manual.

A. Exterior Inspection. The exterior inspection is not an extension of the oral phase in which systems knowledge is examined, but is a demonstration of an applicant's ability to perform a safety check. Inspectors and examiners shall limit questions to those necessary for determining whether an applicant can recognize components that are in an unsafe condition. The inspector or examiner shall determine whether the applicant inspects these items in accordance with the procedures in the operator's aircraft operating manual.

B. Cockpit Preflight Inspection. An applicant shall be required to complete the cockpit preflight check following the procedures in the operator's aircraft operating manual while using the appropriate checklist. An applicant should be asked to demonstrate the use of the minimum equipment list (MEL) and to conduct a passenger briefing. In helicopters requiring more than one pilot, the proper challenges and responses to the checklist must be used.

C. Engine-Start and Rotor Engagement. The applicant shall be required to perform an engine-start and rotor engagement using the correct procedures. Simulated problems may be introduced and should be carried through to the expected conclusion in line operations for the purpose of evaluating crew coordination and the applicant's proficiency.

D. Taxiing or Surface Hover. The inspector or examiner shall evaluate the applicant's ability to safely maneuver the helicopter in proximity to the surface while managing outside vigilance and accomplishing cockpit procedures. The applicant must ensure that the taxi path is clear of obstructions, comply with local taxi rules and control tower instructions, make proper use of checklists, and maintain control of the helicopter and crew.

E. Powerplant Checks. Powerplant checks must be accomplished before takeoff in accordance with the operator's aircraft operating manual.

151. TAKEOFF EVENTS. The applicant must accomplish each of the following takeoff events. These events may be combined when convenient and practical.

A. Normal Takeoff. A normal takeoff is defined as a takeoff beginning from a standing position on the surface or from a stabilized hover and not accompanied by an engine failure or malfunction during the takeoff or initial climb phase.

B. Instrument Takeoff. An instrument takeoff is defined as one in which instrument conditions are encountered or simulated at or before reaching an altitude of 100 feet above the airport elevation. The applicant shall be evaluated on control of the helicopter including transition to instruments as visual cues deteriorate. The applicant must also be evaluated on planning for the transition to an instrument navigation environment. This event may be conveniently combined with an area departure.

C. Engine Failure on Takeoff. The applicant must demonstrate the ability to maintain control of

the helicopter with the simulated failure of a powerplant.

(1) In single-engine helicopters, this event shall consist of a simulated power loss at a point (no lower than 500 feet above ground level (AGL)) requiring a descent to a location other than the departure point. This event need only be continued to a point where the inspector or examiner can make a determination of the applicant's proficiency. The event shall be terminated in a power recovery. This is a potentially hazardous event and shall be presented in a realistic manner that is consistent with safety. Inspectors shall exercise care when introducing the simulated engine failure at a reasonable airspeed and altitude, and give ample consideration to the helicopter's characteristics, length of landing area, surface conditions, wind direction and velocity, and any other pertinent factors that may adversely affect safety. Inspectors and examiners shall not introduce a simulated power failure in a single-engine helicopter in an area where an actual touchdown could not be completed safely, should it become necessary.

(2) In multiengine helicopters, the applicant shall demonstrate the ability to safely continue a takeoff with simulated failure of a powerplant at an airspeed that permits continued climb in forward flight.

(3) Helicopter configuration, airspeed, and operational procedures shall be as recommended in the operator's aircraft operating manual.

D. Rejected Takeoff. A rejected takeoff is a potentially hazardous event. It should be presented in a realistic manner; however, it must be consistent with safety.

(1) In single-engine helicopters, inspectors and examiners shall introduce a simulated problem so that a quick stop is required. Inspectors and examiners shall not introduce a simulated powerplant failure when testing this event in a single-engine helicopter. Instead, this event might be introduced by requesting the applicant to climb over a simulated obstacle on takeoff. Once the takeoff is in progress, the inspector or examiner can then inform the applicant that the climb will not clear the simulated obstacle.

(2) In multiengine helicopters, inspectors and examiners shall introduce a problem requiring an abort before the helicopter reaches a speed at which the helicopter is committed to takeoff.

(3) Inspectors and examiners shall take precautions to introduce the simulated failure at a reasonable airspeed and altitude, giving due consideration to the helicopter's characteristics, length of landing area, surface conditions, wind direction and velocity, and any other pertinent factors that may adversely affect safety.

NOTE: The performance characteristics of some nontransport helicopters may make the introduction of a simulated engine failure on takeoff a potentially hazardous situation. When conducting a flight test in such helicopters, inspectors and examiners should use their authority to waive or modify this event.

E. Crosswind Takeoff. A crosswind takeoff from a standing position on the surface or a stabilized hover must be evaluated on all flight tests. When appropriate, a crosswind takeoff may be evaluated simultaneously with other types of takeoffs.

153. CLIMB, EN ROUTE, AND DESCENT EVENTS.

A. Area Departures and Arrivals. The area departure and arrival events include intercepting radials, tracking, and climbs or descents with restrictions. When practical, a standard instrument departure or standard arrival should be used; however, many published procedures are not suitable for testing an applicant's abilities. For example, common radar departures are essentially initial climb instructions for a radar hand-off. If a suitable published procedure is not available and circumstances permit, the inspector or examiner shall give a clearance that presents the desired tasks. Inspectors and examiners should allow applicants full use of all installed equipment. The applicant's use of navigation equipment, use of other crewmembers, and adherence to air traffic control (ATC) clearances and restrictions shall be evaluated.

B. Holding. Inspectors and examiners should give holding clearances with adequate time available for the applicant to identify the holding fix, select the appropriate speed, and plan the entry. Applicants should be allowed the use of all aids normally available in the cockpit (such as wind drift readouts). At least the initial entry and one complete turn in the holding pattern should be completed before another clearance is issued. The applicant's performance shall be evaluated on the basis of compliance with the holding procedures outlined in the operator's aircraft operating manual, compliance with instructions issued by ATC, and the published holding criteria. Holding airspeed must be as specified by the operator's aircraft operating manual.

C. Steep Turns. This event consists of a level turn in each direction with a bank of 30 degrees, continuing for at least 180 degrees, but not more than 360 degrees. Airspeed, altitude, and bank angle must be controlled within the tolerances specified in the "Airline Transport Pilot and Type Rating Practical

Test Standards'' (FAA-S-8081-5), as amended. Inspectors and examiners shall direct special attention to an applicant's smoothness, coordination, and orientation.

D. Unusual Attitude Recovery. An unusual attitude recovery shall be given at an altitude consistent with a safe recovery by the safety pilot, if the applicant is unable to make a proper recovery. The applicant must recognize the helicopter's attitude and respond correctly. Inspectors and examiners shall observe the minimum altitudes specified for this event in the operator's aircraft operating manual.

E. Settling with Power. The applicant must recognize and initiate immediate recovery from a critical rapid descent with power. For purposes of this maneuver, settling is reached when a perceptible buffet is felt or an indication of immediate settling is detected. If this event is prohibited in the operator's aircraft operating manual, it shall not be conducted in flight, but shall be tested orally.

F. Specific Flight Characteristics. This event consists of recovery from flight characteristics that are specific to the helicopter type. These specific flight characteristics, when applicable, are specified in the Flight Standardization Board (FSB) report for the particular helicopter type. The inspector or examiner shall evaluate the applicant on recognition and recovery from the specific flight characteristic, when applicable. The procedures used for recovery must be those specified in the operator's aircraft operating manual.

155. APPROACHES TO LANDINGS. The approaches described below are required on all flight tests but may be combined, when appropriate.

A. Instrument Landing System (ILS) or Microwave Landing System (MLS) Approaches. Inspectors and examiners shall require applicants to fly a minimum of one normal, all engines operative, ILS or MLS. In addition, when multiengine helicopters are used, one manually controlled ILS or MLS with an accompanying powerplant failure is also required.

(1) When the operator's aircraft operating manual requires the use of a flight director, the flight director must be used during the manually controlled ILS or MLS approaches. If the manually controlled ILS or MLS approach is flown using a flight director, a raw data approach is not required to complete the flight test. When the flight director is used on an ILS or MLS approach, the applicant shall be required to use a decision height (DH) of 100 feet above the touchdown zone (TDZ). The DH shall be determined by the barometric altimeter. Inspectors and examiners shall ensure that the applicant is aware that this DH is for flight test purposes only and does not correlate to any minimums used in actual operations.

(2) If the operator's aircraft operating manual permits the conduct of raw data ILS approaches, the operator must train applicants on the use of raw data for controlling the aircraft during the approach. In this case, the flight director must be used on at least one manually controlled ILS approach. While a raw data approach is not required to complete the flight test, inspectors and examiners should occasionally require a raw data approach to determine whether the operator's training program is adequately preparing applicants. For raw data ILS approaches, the inspector or examiner shall require the applicant to use a DH of 200 feet above the TDZ. The inspector or examiner shall ensure that the applicant is aware that this DH is for flight test purposes only and does not correlate to any minimums used in actual operations.

(3) When the operator's helicopters are equipped with autopilot couplers, at least one coupled autopilot ILS or MLS approach shall be flown. If the autopilot has the capability and the operator is authorized by operations specifications to conduct automatic landings, the coupled approach shall terminate in either an autolanding or a coupled-missed approach. When the flight test is conducted in a multiengine helicopter, the autopilot-coupled approach may be combined with the normal ILS (all engines operative) approach. This combination is permitted because the applicant's ability to manually control an ILS approach is evaluated on the ILS with an engine out.

(4) The vision restriction device must remain in use until just before the helicopter arrives at the DH used for the flight test.

(5) Flightcrew procedures, helicopter configuration, and airspeeds must be as specified by the operator's aircraft operating manual. During each phase of the approach, the airspeed must not deviate from the target speed by more than the tolerances specified in the Practical Test Standards (PTS). The inspector or examiner shall ensure that the applicant is aware that this DH is for flight test purposes only and does not correlate to any minimums used in actual operations. If the flight test is being conducted in actual weather conditions, the DH shall be the published DH.

B. Nonprecision Approaches. The inspector or examiner shall require the applicant to demonstrate two different types of manually controlled nonprecision instrument approaches authorized by the operator's operations specifications.

(1) The inspector or examiner shall allow the applicant to use any aid usually available in the cock-

pit, such as flight director, drift, and ground speed readouts. Some operators train their pilots to perform nonprecision approaches using the autopilot. While this training should be encouraged, at least one nonprecision approach must be manually flown on the flight test.

(2) The vision restriction device shall remain in place until the helicopter arrives at minimum descent altitude (MDA) and a distance from the runway approximating the required visibility for the approach.

(3) Applicants must remain within the tolerance established for terrain clearance. Also, at the visual descent point or its equivalent, the aircraft must be in a position that it can be aligned with the runway without excessive maneuvering.

C. Circling Approach Maneuver. To qualify as a circling approach for flight test purposes, the procedure to be flown must require a change in heading from the final approach course to the runway heading of at least 90 degrees. This event may be waived if local conditions, beyond the control of the applicant (traffic or available approaches), prevent it from being conducted in a realistic manner.

(1) The inspector or examiner may modify the event. For example, with the tower's approval, the visual maneuver portion of the event could be entered from a modified visual flight rules (VFR) traffic pattern at a point downwind and abeam the touchdown point.

(2) The angle of bank for a circling maneuver should not exceed 30 degrees. Altitude and airspeed must not exceed the tolerances specified in the PTS. The helicopter shall not descend below MDA until the runway environment is clearly visible to the applicant, and the helicopter is in a position for a normal descent to the touchdown point.

157. LANDING EVENTS. The following landings are required but may be combined when appropriate:

A. Normal Landing. A normal landing is defined as an approach to a stabilized hover or a touchdown, with normal power available. A normal landing can be accomplished from either a visual pattern or from a nonprecision approach.

B. Landing in Sequence from an ILS or MLS Approach. On the landing from an ILS or MLS approach, the runway environment should become visible to the applicant as close as possible to the DH being used for flight test purposes. An applicant must complete the approach to a landing or stabilized hover without excessive maneuvering and within the runway TDZ. The approach angle must not be erratic, excessively steep, or shallow in the visual segment.

C. Crosswind Landing. Crosswind landings will normally be performed from a VFR traffic pattern, but may be combined from a nonprecision approach.

D. Maneuver and Landing with a Powerplant Inoperative—Multiengine Helicopters. Inspectors and examiners should introduce this event in a realistic manner. Consideration should be given to the helicopter weight, atmospheric conditions, and helicopter position. The helicopter position at the onset of the engine failure should allow enough room for the applicant to maneuver the helicopter and to exercise judgment.

E. Autorotation (Single-Engine Only). An autorotation is required for single-engine helicopters. Inspectors are cautioned to ensure that the landing area is appropriate for such operations. All autorotation approaches to off airport sites will be terminated in power recoveries.

159. MISSED APPROACH EVENTS. Missed approaches from two separate instrument approaches are required to complete the flight test. At least one missed approach shall be flown through the entire missed approach procedure, unless traffic or ATC restrictions prevent completing the entire procedure. One missed approach is required from an ILS or MLS. When the flight test is conducted in a multiengine helicopter, one missed approach is required with the most critical powerplant inoperative. The engine-out and ILS/MLS missed approaches may be combined; however, to complete the flight test a minimum of two missed approaches are still required.

A. Inspectors and examiners must exercise good judgment concerning the performance characteristics of the helicopter involved when performing a missed approach with the critical powerplant inoperative. When helicopter performance is critical, inspectors and examiners should use their authority to modify the event. For example, a go-around may be combined with a simulated powerplant failure at a safe altitude.

B. The applicant must promptly execute the missed approach procedure if the runway environment is not acquired at DH on an ILS or MLS approach. If the runway environment is not in sight on a nonprecision approach, or if the aircraft is not in a position to land at the missed approach point, the applicant must initiate a missed approach. If conditions on any type of approach prevent continuation of the approach, the applicant must initiate a missed approach. For example, a missed approach above DH might be required when an instrument failure flag appears. A missed approach is required if the helicopter is below

DH or MDA and cannot be properly aligned with the runway, or if the applicant loses sight of the runway environment. The applicant must adhere to the published missed approach or the instructions given by ATC and observe the procedures and limitations in the operator's aircraft operating manual. An applicant must properly use the available aids and other crewmembers when making the transition back to the instrument navigation environment.

161. NORMAL AND ABNORMAL PROCEDURE EVENTS. The inspector or examiner shall require the applicant to demonstrate the proper use of as many of the helicopter's systems and devices as necessary to determine if the applicant has a practical knowledge of the use of such systems. Evaluation of normal and abnormal procedures can usually be accomplished in conjunction with other required events and does not normally require a specific event to test the applicant's use of these systems and devices. The applicant's performance must be evaluated on the maintenance of helicopter control, the ability to recognize and analyze abnormal indications, and the ability to apply corrective procedures in a timely manner. Systems to be evaluated include, but are not limited to, the following:

- Anti-icing and deicing systems
- Autopilot and stability augmentation systems
- Navigation and airborne radar systems
- Any other available systems, devices, or aids available (such as flight management systems)

163. EMERGENCY PROCEDURE EVENTS. The applicant must be able to competently operate all installed emergency equipment and to correctly apply the procedures specified in the operator's aircraft operating manual.

A. Powerplant Failures. Inspectors and examiners may introduce malfunctions requiring an engine shutdown during the flight test. This provision is not intended as authority to require an unrealistic number of failures, but to permit such failures at times when they are most appropriate. Powerplant failures should be limited to those necessary for determining an applicant's proficiency. If a multiengine helicopter is not capable of maintaining altitude with an engine inoperative, applicants are expected to maintain the best engine-out climb speed while descending. The applicant must promptly identify the inoperative engine and initiate correct action while maneuvering the helicopter safely. Smooth application of flight controls and proper trim is required.

B. Other Emergency Procedures. Inspectors and examiners should sample as many of the following events as necessary for determining whether an applicant is proficient in identifying and responding to emergency situations:

- Fire in flight
- Smoke control
- Hydraulic and electrical system failure or malfunctions (if safe and appropriate)
- Navigation or communications equipment failure
- Any other emergency procedures outlined in the operator's aircraft operating manual or training program

165. STANDARDS OF ACCEPTABLE PERFORMANCE. The highest grade of pilot certificate issued is the Airline Transport Pilot (ATP) Certificate. An applicant for this certificate must possess the highest degree of piloting skills and be the master of the helicopter, the crew, and the situation throughout the aircraft's operational envelope. In addition to the guidance of subparagraph 31D, the following guidance applies to the ATP certificate.

A. Manipulative Skills. The manipulative skill standards for the ATP certificate are the most rigorous of all pilot certificates issued. The skills requirement for the ATP certificate and for other certificates differs not in the tolerances allowed but in the degree of mastery required. The applicant for an ATP certificate must demonstrate the ability to operate the aircraft smoothly under a complex set of circumstances. The applicant's performance must be such that the inspector or examiner is never seriously in doubt of the successful outcome of each event of the flight test. The determination of whether an applicant's performance is acceptable or not is derived from the experience and judgment of the inspector or examiner. It is imperative that inspectors and examiners be fair and consistent when making their determinations. For example, weather, helicopter responsiveness, traffic, and other factors beyond an applicant's control may cause the applicant to deviate briefly during the accomplishment of a maneuver. In the case of turbulence, the applicant is expected to adhere to the procedures for adjusting the target speed as specified in the operator's helicopter operating manual. In such a situation, an applicant who makes a determined effort, who is generally successful in maintaining close control, and who does not deviate to the extent safety is compromised, should be considered to have met the standard.

B. Flight Management Skills. The term "pilot-in-command" (PIC) implies that the pilot is the leader of a crew and bears the final responsibility for the

safe conduct of the flight. This standard, more than any other, distinguishes the successful applicant for an ATP certificate from those holding other grades of certificates. The ATP flight test must not be limited to a simple demonstration of a series of events. An ATP applicant must demonstrate a mastery of complex problems, good judgment, situational awareness, cockpit management, and leadership skills.

166.–170. RESERVED.

FIGURE 5.2.5.1.
ATP/TYPE RATING ORAL TEST JOB AID—HELICOPTER

I. APPLICATION PHASE. The applicant must present:

[ ] FAA Form 8410-2 (application) completed and signed
[ ] Current medical certificate:

1. For original ATP: First class
2. For additional class or type rating: Third class

[ ] Pilot Certificate:

1. For original ATP: Commercial or equivalent
2. For additional class or type rating: ATP

[ ] Current or validated AC Form 8080-2, "Airman Written Test Report," for ATP or additional class rating. If validity date of oral extended, add the following comment to AC Form 8080-2: "The period of validity of this form has been extended in accordance with the applicable provisions of FAR § 61.39(b)," and date, and sign.
[ ] FAA Form 8060-5, "Notice of Disapproval of Application" (if applicable)
[ ] Training records showing applicant has successfully completed all ground training events including integration training

II. THE ORAL TEST

[ ] A. Knowledge of Aircraft Systems

[ ] Hydraulic
[ ] Pneumatic
[ ] Flight instruments
[ ] Landing gear, wheel
[ ] FMS, EFIS
[ ] Fuel
[ ] Electrical
[ ] Powerplants
[ ] Flight controls
[ ] Autopilot, F/D
[ ] Navigation systems
[ ] Rotor system

[ ] B. Knowledge of and ability to compute performance data, takeoff, landing, and cruise performance
[ ] C. Weight and balance
[ ] D. Ability to perform or state "Immediate Action" items
[ ] E. Knowledge of and ability to state operating limitations
[ ] F. Knowledge of related items (such as MEL)

FIGURE 5.2.5.2.
ATP/TYPE RATING FLIGHT TEST JOB AID—HELICOPTER

GROUND OPERATIONS		
Preflight Inspection	[ ]	
Taxiing and Ground Hover	[ ]	
Powerplant Checks, Rotor Engagement	[ ]	
TAKEOFFS		
Normal	[ ]	
Instrument	[ ]	
Crosswind	[ ]	
With Powerplant Failure	[ ]	
Rejected Takeoff	[ ]	
INSTRUMENT PROCEDURES		
Area Departure	[ ]	
Area Arrival	[ ]	
Holding	[ ]	
Normal ILS Approach	[ ]	With F/D
Autopilot-Coupled ILS	[ ]	If equipped
Engine-Out ILS	[ ]	
Nonprecision Approach	[ ]	
Second Nonprecision Approach	[ ]	
Circling Approach	[ ]	
Missed Approach from an ILS	[ ]	
Engine-Out Missed Approach	[ ]	
IN-FLIGHT MANEUVERS		
Steep Turns	[ ]	
Settling with Power	[ ]	
Specific Flight Characteristics	[ ]	
Powerplant Failure	[ ]	
LANDINGS		
Normal Landing	[ ]	
Landing from an ILS	[ ]	
Crosswind Landing	[ ]	
Autorotation (Single-Engine)	[ ]	
From Circling Approach	[ ]	

NORMAL, ABNORMAL, AND EMERGENCY PROCEDURES—SAMPLE

[ ] Anti-Icing and Deicing; Hydraulic, Electrical, Pneumatic, and Other System Failures; Gear, Flaps, Control Systems; Navigation and Communications Equipment; Fire in Flight, Smoke Control; Decompression, Emergency Descent, Emergency Landing, and Evacuation

NOTE: Inspectors should refer to the appropriate section of "Airline Transport Pilot and Type Rating Practical Test Standards" (FAA-S-8081-5), as amended, for maneuver tolerances.

FIGURE 5.2.5.2.—Continued
ATP/TYPE RATING FLIGHT TEST JOB AID—HELICOPTER

BRIEFINGS

[ ] A. Brief Applicant:
1. Departure point, destination, route, weather
2. Aircraft weight and fuel load
3. Role of inspector
4. Use of crewmembers and autopilot (Applicant is in command and must perform command duties successfully.)
5. Review minimums to be used on test

[ ] B. Brief Supporting Crewmembers:
1. Crew will perform normal duties of their positions
2. Will act in support role and not initiate. May be asked to delete calls, altitude alerts, etc.
3. Duties of safety pilot

[ ] C. Safety Pilot Briefing:
1. Use of hood
2. Transfer of controls
3. Simulated emergencies
4. Response to an actual emergency
5. Autorotations
6. Other specific events

[PAGES 5-106 THROUGH 5-112 RESERVED]

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 in the assigned aircraft.

A. Minimum Required Training for APM's. An APM candidate must complete, to the satisfaction of both the POI and the operator, at least the following segments of the operator's approved training curriculums:

(1) Basic indoctrination training must be completed.

(2) Pilot-in-command (PIC) initial equipment training must be completed, including type certification, when appropriate. If the operator does not have an initial equipment training curriculum for the aircraft, APM's must complete the PIC transition curriculum for the aircraft. APM's shall complete the flight engineer initial equipment 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, must be completed.

(4) The operator's check airman training for the pilot duty position or for the flight engineer duty position, when applicable, must be completed.

(5) Instead of receiving operating experience (OE), as the operator's flight crewmembers do, the APM candidate will observe at least three on-line flights that are representative of the use of the aircraft in operations.

(6) 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, flight simulator.

B. APM Duties During Training. During the period in which APM candidates are in training with the assigned operator, they shall not be assigned normal inspector duties and shall not perform normal inspector duties.

C. APM Qualification on a New or Additional Aircraft. Under limited conditions, an inspector may be assigned as an APM on more than one aircraft. Inspectors should be knowledgeable of the following guidance:

(1) Dual qualification of inspectors assigned to FAR Part 121 aircraft is discouraged. An inspector may not be dual-qualified on a FAR Part 121 airplane without the written permission of the responsible division manager.

(2) An APM assigned to FAR Part 135 turbojet or other aircraft requiring a type rating may only be assigned to two aircraft types.

(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, paragraph 285, 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 on a new aircraft or a second type of aircraft, the APM must complete all of the 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. Responsibility for Training. The operator is responsible for providing all required training except 2 hours of flight training in the airplane provided at FAA expense. The FAA shall bear the cost of any lodging and per diem incurred by the APM.

443. MAINTENANCE OF 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. Recurrent training for an APM shall consist of the same ground and flight training curriculum segments used by the operator, including the proficiency check requirements for a PIC and flight engineer, when applicable. APM's should also complete the FAA air carrier operations inspector job function recurrent training, a minimum of every 24 calendar months (course number 21621). Proficiency checks of APM's shall be conducted by an inspector designated by the POI or by an APD being observed by another inspector. A company-qualified check airman will occupy the co-pilot's position as a safety pilot during all APM proficiency checks conducted in the aircraft.

NOTE:FAR § 121.453 specifies the currency requirements for a flight engineer. The POI and the operator should include a proviso in the memorandum of understanding to allow the APM to maintain currency. One method would be to provide simulator periods every 6 months for training and checking.

B. Check Airman Qualification. APM's shall attend the recurrent check airman training that the operator provides for check airmen.

C. LandingCurrency. APM's shall maintain landing currency (3 landings every 90 days) for each assigned aircraft for which a type rating is required as an APM. Operators are responsible for providing APM's with the opportunity to accomplish and maintain this landing currency by making available a minimum of 2 hours of flight simulator time each quarter. If an operator is unable to provide the APM with the required flight simulator time, the operator must provide an aircraft, at the operator's expense, to accomplish the required currency. For other aircraft, the APM shall maintain currency for the assigned category, class, and equivalent grouping of aircraft.

D. Maintenance of Dual Qualification. APM's assigned to two aircraft types must be trained and qualified on both aircraft in accordance with the guidance in this handbook and with the operator's approved training program.

E. Failure to Maintain Qualification and Currency. APM's who fail to maintain qualification in accordance with this paragraph shall not perform inspector duties until the delinquent training has been accomplished.

(1) Training completed in the month before or the month after it is due is considered to have been accomplished in the month due.

(2) POI's shall not designate APD's when the operator has not provided the APM with the opportunity to remain qualified and current. The POI and district office management must take positive action to ensure that the FAA responsibilities for keeping APM's qualified and current are fulfilled. When an APM is transferred 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 supervision of the APD's cannot be maintained, the POI shall take action to withdraw the APD designations.

445. TRANSITION UPON REASSIGNMENT OF APM'S. When an APM is reassigned, POI's, office managers, and Regional Flight Standards Divisions (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 it is practical. Outgoing APM's shall complete the renewal requirements for those APD's whose designations will expire within 90 days of the date of reassignment from APM status. If an APM position is vacant for any substantial period of time, the office manager, POI, and RFSD shall detail a qualified inspector to monitor the program. If the APM position remains unfilled for 6 months, the office manager shall consider withdrawing the ADE program for that aircraft.

447. REMOTE TRAINING FACILITIES. Operators with ADE programs may have training facilities located outside the certificate-holding district office (CHDO) area of geographic responsibility. APM's working in these programs shall be assigned to the CHDO. These APM's 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 CHDO. The POI and CHDO manager shall evaluate the specific circumstances, particularly the time and means of commuting to the remote site. If the travel time between the CHDO and the training facility is too lengthy for an APM to travel to the training site 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 assigned aircraft during travel to and from the training location. When the CHDO and training facility are in the same region, the recommendation for an APM's remote placement shall be forwarded to the RFSD. When the CHDO and training facility are in different regions, the recommendation shall be forwarded through the RFSD to AFS-500 for approval. If AFS-500 concurs with the recommendation, AFS-500 shall ensure that the necessary support for the remote APM is provided by the region in which the APM is to be located.

449. OPERATOR RESPONSIBILITIES. The operator under an ADE program must assume additional responsibilities. Each operator participating in the program must be willing to undertake and fulfill the responsibilities that follow:

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 be willing 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 and is advantageous to both the operator and the FAA. When

an operator is no longer willing to maintain an open relationship, the ADE program must be terminated.

B. APM Support. The operator is obligated under the ADE program to assume the responsibility and costs for qualifying and maintaining the APM's currency in the assigned aircraft. 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. CHDO MANAGER RESPONSIBILITIES. Managers of CHDO are responsible for establishing effective administrative systems to support ADE programs. This support shall include, but is not limited to, the following:

A. Certification Paperwork. Office managers are responsible for establishing administrative procedures for the expedient and efficient processing of certification paperwork within the CHDO. As much of the processing as possible should be accomplished by trained administrative personnel and not by inspectors, APM's, or POI's. This does not relieve APM's from the responsibility of ensuring that APD's accurately and punctually complete certification paperwork. Flight Standards offices are 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 is responsible for establishing the administrative procedures for entering APM and APD data into the PTRS. At the close of each quarter, the POI and office managers shall have three reports prepared. These reports are needed by APM's for management of their work programs. These reports are designed to be 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 address the following subjects:

- Operator
- Aircraft type and name of each APD assigned to that aircraft
- Name of each APD
- 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 5.7.2.1. for format).

453. RFSD RESPONSIBILITIES.

A. Program Approval. RFSD managers are responsible for the approval of the initial establishment of ADE programs for operators located within their regions. The RFSD should give written notification of any such action to AFS-200 and AFS-500.

B. Resources. RFSD managers are responsible for ensuring that ADE programs are allocated adequate personnel and budget resources to function effectively.

(1) Sufficient resources must be allotted for administrative support and for the training of APM's, in accordance with the requirements of this handbook.

(2) An adequate number of APM's, assistant APM's, assistant POI's, ASI's, and clerical personnel must be provided to accomplish the certificate management and APM functions described in this handbook, in an effective and timely manner.

(3) Personnel and budget forecasts for a 3-year period shall be prepared and revised annually. Adequate provisions for personnel turnover because of promotions and retirements must be made. In addition, the need for additional positions due to growth in operator programs must be forecast.

C. Components of the 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 5.7.3.2.

(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 that 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 complied with 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 that could adversely affect safety and which have gone undetected, unreported, or for which the operator has failed to implement effective corrective action
- Deficiencies in the management of the ADE program that, in the opinion of the assessment team, have a major impact on the effectiveness of the program

(4) Minor Findings. The minor findings contained in the assessment report are those deficiencies that APM's or POI's have recognized and are either in the process of being corrected or are ones that can readily be corrected. Minor findings should be brought to the attention of the appropriate individual and resolved as they are found.

(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, AFS-200, and AFS-500. 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. Either 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, limitations, and authorizations should be completely understood by the operator. When an operator decides to participate in an ADE program, a "memorandum of understanding" (MOU) shall be used as the basis of agreement for negotiations and shall be mutually prepared by the POI and the operator. A sample MOU is provided in figure 5.2.5.3. This sample is provided only as an example. Since each operator has different training programs and requirements, each MOU will be unique according to the needs of the operator and the FAA. The MOU must be signed by an appropriate official for the operator and by the POI. The MOU should contain the reasons for establishing the ADE program and 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 pro-

gram shall be indicated by the RFSD stamping or typing the word, "APPROVED," on the MOU. The RFSD manager shall sign and date the MOU and return it to the CHDO files for retention in the ADE program files. When an ADE program is approved, the Flight Standards division shall forward a copy of the MOU to AFS-200 and AFS-500. If the RFSD manager determines that the ADE program should not be established, the manager shall forward a letter to the appropriate office manager and return the MOU. The letter must contain an explanation of the reasons for not establishing the ADE program.

457. PROGRAM REVISIONS. Revisions to approved ADE programs are required for a variety of reasons, such as mergers and equipment changes. The POI is responsible for analyzing the effects of such changes and for taking appropriate action, including negotiating a revised MOU. 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	AIRCRAFT ATP/TR 1510/1514	ORAL ATP/TR 1511/1515	SIMULATOR ATP/TR 1512/1516
Conducted By: APM	_____	_____	_____
ASI	_____	_____	_____
APD	_____	_____	_____
Totals:	_____	_____	_____

F/E CERTIFICATION	AIRCRAFT ATP/TR 1510/1518	ORAL ATP/TR 1511/1519	SIMULATOR ATP/TR 1512/1520
Conducted By: APM	_____	_____	_____
ASI	_____	_____	_____
APD	_____	_____	_____
Totals:	_____	_____	_____

CHECK AIRMAN SURVEILLANCE - PTRS ACTIVITY CODE 1631

No. Conducted By APM _____ No. Conducted By ASI _____ Total: _____

PROFICIENCY CHECK AIRMAN SURVEILLANCE - PTRS ACTIVITY CODE 1632

No. Conducted By APM _____ No. Conducted By ASI _____ Total: _____

LINE CHECK AIRMAN SURVEILLANCE - PTRS ACTIVITY CODE 1633

No. Conducted By APM _____ No. Conducted By ASI _____ Total: _____

APD SURVEILLANCE - PTRS ACTIVITY CODE 1672

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?

AREA II. APD AND CHECK AIRMAN PERFORMANCE. An assessment of the APD'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 three certification actions (oral tests or flight tests) each quarter?

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
- Four proficiency checks

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?

F. Are APM's reviewing training programs for their assigned aircraft, including conducting direct surveillance and monitoring operators' actions when students either 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?
(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?
(6) Completing at least 2 hours of flight training in the aircraft?

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
_____ AIRLINES, INC. & THE FEDERAL AVIATION ADMINISTRATION

This Memorandum of Understanding is based upon guidance found in FAA Order 8400.10, "Air Transportation Operations Inspector's Handbook," volume 5, chapter 6. The parties involved are _____ Airlines, Inc. and the Federal Aviation Administration (FAA) Certificate Management Office (CMO) or Unit (CMU), _____. The object of this memorandum is to establish a working agreement for an Aircrew Designated Examiner (ADE) program.

1. The FAA ADE program has been established under the provisions of Federal Aviation Regulations (FAR) Part 183 for the delegation of certification authority and responsibility to selected employees of complex FAR Part 121 operators. The ADE program is comprised of employee(s) of _____ Airlines known as Aircrew Program Designees (APD) 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 a specific aircraft. All APM's report directly to the Principal Operations Inspector (POI) on all matters pertaining to the ADE program.

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 the APM's.

3. The ADE program is based upon the requirement that _____ Airlines and the CMO or CMU maintain an open relationship. _____ Airlines agrees to allow the APM's unrestricted access to facilities, working level personnel and managers. _____ agrees to accept input from the POI and the APM's concerning procedures, manuals, and training programs and to seek mutually acceptable solutions for deficiencies at the working level.

A. _____ agrees to actively and continuously measure the effectiveness of its policies and procedures, manuals, and training programs. Through the POI and APM's, the FAA will share its surveillance findings so that _____ is provided an independent assessment to measure the effectiveness of the program.

B. It is mutually understood that in the management of a complex organization such as an airline, technical deviations from the regulations occur, and good operating policies, FAA-approved manuals, checklists, procedures, and training programs become outdated. In accordance with the Administrator's policy on compliance and enforcement, and with the guidance contained in Advisory Circular 120-56, "Air Carrier Voluntary Disclosure Reporting Procedures," the CMO or CMU,_____, agrees to record but defer any enforcement or other action (such as withdrawing approval) on VOLUNTARY DISCLOSED deficiencies until an attempt to find a mutually acceptable solution is made. Should a mutually acceptable corrective action be found and successfully implemented, no further action on the part of the FAA will be taken.

C. _____ 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 individuals who violate the FAR and pose an actual threat to passengers or other employees. In order to be fair, however, the CMO or CMU, _____, agrees to delay, and to recommend a sanction in such cases until it determines what action _____ 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 to function effectively in the ADE program, they require an expert knowledge of the operator's program. _____ agrees to extend privileges to APM's beyond those afforded to aviation safety inspectors (ASI) not assigned as APM's. These privileges include all privileges that the operator

FIGURE 5.6.2.3.—Continued
SAMPLE MEMORANDUM OF UNDERSTANDING

grants to its own check airmen (except that of acting as pilot-in-command (PIC) of an aircraft in flight). For example, APM'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.

4. _____ Airlines will provide the APM designee with the training that _____ Airlines provides to its flight crewmembers and check airmen for initial qualification as well as recurrent training requirements. The APM's must complete this training to the mutual satisfaction of _____ Airlines and the POI. Should an APM fail to progress through training satisfactorily, _____ Airlines will provide the same remedial training provided to its own crewmembers. Should the APM 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 I (CAT I) or Category II (CAT II) procedures, if required)
- Check airman training for the pilot and flight engineer position, if required)

5. The APM candidate (in lieu of operating experience (OE)) must observe, from the cockpit, a minimum of three _____ Airlines 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 remain with the aircrew throughout the trip pattern to become familiar with a cross-section of line operations. The APM will not grade the performance of the _____ crewmembers during this line observation. The FAA PTRS Data Sheet completed for these flights will show in the comments section, "Participating in Aircrew Program Manager Training with _____ Airlines in the _____ (specified) aircraft."

6. The APM is eligible for advanced simulation provisions of FAR Part 121, Appendix H, and may receive the certification check in a simulator; however, initial training must include 2 hours as PIC in the actual aircraft, and if applicable, actual aircraft training and checking as flight engineer. The cost of aircraft training will be an FAA expense.

7. The APM will complete aircraft currency, annual recurrent training, and proficiency checks on the same basis as that administered to the airline's PIC and check airman (all checks) as follows:

A. Two hours of flight simulator time as PIC each calendar quarter. This simulator training time will be provided by _____ Airlines at their expense and may be provided in a "dry" or "wet" status. If an operator is unable to provide the APM with the required simulator time, the operator must provide an aircraft, at the operator's expense, to accomplish the required currency. For other aircraft, the APM shall maintain currency for the assigned category, class, and equivalent grouping of aircraft. Coordination for scheduling this training will be made with the respective FAA APM and _____ Airlines.

B. Two hours of flight simulator time annually for warm-up practice as PIC and 4 hours of flight simulator time annually for warm-up practice as PIC and flight engineer in three-crewmember aircraft. This warm-up simulator time is required prior to the APM's receiving the annual proficiency check administered by the FAA. This simulator warm-up period will be provided by _____ Airlines 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 annual PIC proficiency check, completion of recurrent training, and if appropriate, an annual flight engineer. The FAA will provide an Airman Certification Examiner to administer the required proficiency check, and _____ Airlines will provide qualified crewmembers to fill other required crew positions, as appropriate. This simulator time will be provided by _____ Airlines at their expense.

FIGURE 5.6.2.3.—Continued
SAMPLE MEMORANDUM OF UNDERSTANDING

D. Each APM will receive annual recurrent ground training on the same basis as that administered to _____ Airlines' pilots. This training will be provided by _____ Airlines at their expense.

8. APD candidates must be nominated by _____ Airlines. An individual who has been designated as an APD will be removed if that individual becomes unacceptable to the POI or _____ Airlines. An APD candidate must possess the following minimum qualifications:

- Be employed by _____ Airlines, Inc.
- Possess the appropriate airman certificate, class rating and type rating
- Qualify as an FAA-Approved Pilot or Flight Engineer Proficiency Check Airman in the aircraft in which the APD candidate is to perform the necessary duties
- Service as a Check Airman for a minimum of 1 year before designation as an APD, subject to reduction at the discretion of the POI and the APM (check airman experience in other types of aircraft and with other operators may be credited)
- Possess an above average of knowledge, ability, and experience
- A good record of compliance with the FAR (isolated and unrelated violations or incidents not disqualifying)

9. The APD candidate will submit a complete statement of professional qualifications on FAA Form 8710-6, "Examiner Designation and Qualification Record." The APM shall review the qualifications and, if found eligible, will recommend to the POI that the candidate be designated as an APD. An APD selection must be mutually agreed upon by the APD, the APM, and _____ Airlines.

10. The APD's will be authorized to perform airman certification on only one type of aircraft. This authority is limited to the certification of graduates of _____ Airlines' FAA-Approved Training Program.

11. All certification conducted by the APD shall be limited to the privileges of the APD's airman certificate and the APD's Certificate of Authority in the assigned aircraft. The APD may conduct pilot oral examinations and flight tests for airline transport pilot (ATP) certificates, and for category, class, and type ratings to be added to an ATP certificate. Flight engineer APD's may conduct oral examinations and flight tests for flight engineer certificates and for the addition of a class rating to a flight engineer certificate.

A. An APD may not conduct an evaluation of any applicant that the APD has instructed for the certificate or rating to be issued unless specifically authorized by either the POI or the APM. In addition, an APD may not conduct FAA written tests, special medical evaluations, test for waivers, or any test for competency under § 44709 of Title 49, United States Code (U.S.C.) (formerly § 609(a) of the Federal Aviation 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 on APD 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 ratings
- The procedures, methods, and techniques associated with administering the required certification tests
- The responsibilities, authority, and limitations under the FAR and FAA Order 8400.10
- 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 _____ Airlines' policies, economics, union affiliation and seniority with _____ Airlines are not relevant issues when determining the qualification of an airman

FIGURE 5.6.2.3—Continued
SAMPLE MEMORANDUM OF UNDERSTANDING

- After formal training, the APD must observe the APM conduct a complete oral test, flight test, and the necessary briefings, as well as the completion of the certificate paperwork
- The APM shall conduct regular meetings with the APD's for the purpose of maintaining an effective working relationship and clarifying any problem areas, and shall attend crewmember safety meetings held by _____ Airlines. (The APM shall ensure that required supplies and materials are available to the APD.)

The following signatures signify agreement to this memorandum of understanding and its contents:

_____

_____

_____

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SECTION 3. CABIN EN ROUTE INSPECTIONS

141. OBJECTIVE. This chapter provides guidance for conducting a cabin en route inspection to ensure that an operator's cabin safety procedures adhere to the Federal Aviation Regulations (FAR) and safe operating practices. For purposes of this section, aviation safety inspector (ASI) includes cabin safety specialist.

143. GENERAL. Cabin en route inspections provide the Federal Aviation Administration (FAA) with information concerning flight attendant (F/A) training programs, operator procedures, and the condition and maintenance of aircraft emergency equipment and furnishings.

A. Inspector Qualifications.

(1) Since ASI's do not receive system training on all aircraft, it is important that inspectors become familiar with the operator's procedures and equipment before performing the inspection.

(2) The FAA does not permit an inspector to provide on-the-job training (OJT) to another inspector concerning the conduct of en route inspections on the same flight. Therefore, each inspector must be familiar with the cabin en route inspection procedures before performing this task and must be authorized through his or her unit supervisor.

(3) Inspectors possess various degrees and types of expertise and experience. When additional information or guidance is needed, the inspector should coordinate with personnel experienced in that particular specialty.

B. Inspectors' Conduct.

(1) In performing this job task, the actions of the inspectors are subject to the close scrutiny of airline employees and the general flying public. The inspector must be alert for leading questions from crewmembers and passengers regarding destinations, technical information, and other operators.

(2) Inspectors involved in cabin en route inspections will not enter the cockpit during the flight, unless requested by the captain or another crewmember, or unless emergency circumstances indicate that it would be the proper course of action.

NOTE: Inspectors must comply with all regulatory requirements and approved operator procedures.

145. CABIN EN ROUTE INSPECTION AREAS. Three general areas have been identified for inspectors to observe and evaluate during cabin en route inspections. Each area should be considered to be of equal importance. The three inspection areas are as follows:

A. Cabin (Interior). The interior inspection area applies to the airworthiness of the aircraft cabin and the condition and availability of aircraft cabin emergency equipment and furnishings. Figure 6.2.3.2., "Cabin En Route Interior Inspection Reference Chart," contains a table listing these items and when they should be inspected. Although these items are not all inclusive, they represent the types of aircraft items that should be evaluated during the inspection.

B. Crewmember. The crewmember inspection area applies to F/A's who perform assigned safety duties during the flight. Inspectors should evaluate such items as crewmember knowledge, ability, and proficiency by directly observing F/A's performing their assigned safety duties and functions.

NOTE: F/A trainees who are receiving operating experience should not be evaluated on the same basis as the fully qualified crewmembers.

C. Flight Conduct. The flight conduct inspection area relates to the specific phases of the flight that can be observed during the cabin en route inspection. This includes a wide range of items, including F/A and flight crewmember coordination of the performance of duties. These types of areas can often be observed before beginning a flight, at en route stops, or at the termination of a flight.

147. INITIATION AND PLANNING.

A. Initiation. This task is normally scheduled as part of the National Work Program. Additional inspec-

tions can be initiated by national, regional, or district office special requirements.

B. Planning.

(1) Inspectors conducting cabin en route inspections should make arrangements for the inspection as far in advance of the flight as possible. Inspectors who have not provided the operator with the appropriate advance notice should not insist on a seat if the flight is full. Operators should not attempt to displace the inspector in favor of a passenger when notification has been provided to a FAR Part 135 operator. However, bumping a revenue passenger should only be done when there is no acceptable, alternative means of accomplishing the inspection. Inspectors are expected to exercise sound judgment in these matters.

NOTE: Inspectors will not occupy the F/A jumpseats. Only qualified crewmembers, as determined by the operator, are authorized to occupy these seats.

NOTE: Inspectors conducting a cabin en route inspection on FAR Part 121 operators must never displace a revenue passenger.

(2) When it is necessary to board a flight at an intermediate stop, the inspector will make every effort to advise the pilot-in-command (PIC), prior to boarding the flight, that a cabin en route inspection will be conducted.

(3) The inspector must conform to the operator's approved carry-on baggage program. If there is any concern that the inspector's carry-on baggage will exceed operator limitations, the baggage should be checked. The inspector's identification, FAA Form 110A, "Aviation Safety Inspector Credentials," and FAA Form 8430-13, "Request for Access To Aircraft," is adequate documentation for the operator to check the baggage.

149. FAA FORM 8430-13, "REQUEST FOR ACCESS TO AIRCRAFT." The inspector to whom FAA Form 8430-13 is issued is personally responsible for its proper use and safekeeping, to include the following:

- Recording on the inside cover every request issued, canceled, or otherwise voided
- Returning it to the issuing office when the inspector transfers, retires, or has no further use for this book
- Returning the cover containing the Record of Requests Issued and the yellow copies to the issuing office when all requests have been used
- Immediately reporting to the issuing office the full set of circumstances concerning any loss of requests

151. PERFORMING THE CABIN EN ROUTE INSPECTION. The attention of the F/A's must not be diverted from assigned duties including passenger boarding, deplaning, and in-flight service. Surveillance of F/A awareness and the following of safety-related procedures should continue during the flight.

A. Interior Inspection.

(1) This inspection should be performed without disturbing the boarding or deplaning of the passengers. Any discrepancies noted should be brought immediately to the attention of the lead F/A or the PIC.

(2) Crewmembers should initially be briefed to continue their assigned duties as if the inspector were not present. The inspector should then request that a crewmember provide an F/A manual and be available for a discussion relating to the crewmember's duties, at the crewmember's earliest convenience.

(3) Some operators require F/A's to accomplish a preflight inspection of at least some of the emergency and safety equipment in the cabin. In such a case, the inspector should observe the F/A inspect the equipment and then perform an additional inspection of selected equipment.

NOTE: An inspector can determine whether the operator requires an F/A to conduct preflight by examining the F/A manual.

(4) When an F/A preflight equipment inspection is not required by the operator or has already been performed, the inspector should inspect the equipment. If there is not enough time to inspect the emergency equipment before the flight, the inspector may choose to inspect it after the flight.

(5) Inspectors should avoid impeding the flow of passenger traffic or in any way interfering with crewmembers conducting their respective duties. Since passengers are naturally curious about an inspector's activities, it is recommended that reasonable passenger inquiries be answered in a brief, factual, and courteous manner.

B. In-Flight Monitoring. This phase of the inspection includes the activities associated with boarding, pre-departure, in-flight, and landing. During this part of the inspection, the inspector will have the opportunity to do the following:

- Evaluate operator procedures
- Determine adherence to company policy, FAA regulations, and safe operating practices

- Monitor passenger safety

C. Required Flight Attendants. When regulations require F/A's for the operation of a flight, the number of F/A's required is based on the number of passenger seats and/or the emergency evacuation demonstration. The number of required F/A's for each make, model and series aircraft used by the operator is listed in the operations specifications (OpSpecs).

(1) There must always be a full complement of F/A's at originating and terminating points when passengers are on board. FAR Part 121 operations only, at intermediate stops, may reduce the number of required F/A's by dividing the number of F/A's by two and rounding down. Regulations permit an operator to substitute personnel, qualified in emergency evacuation procedures for that specific aircraft, at intermediate stops. Substitute personnel must be easily identified.

(2) Additional, non-required, F/A's may be used by the operator.

153. DEFERRED MAINTENANCE.

A. Minimum Equipment List (MEL), Deferred Maintenance. The operator's approved MEL allows the operator to continue a flight or series of flights with certain inoperative equipment. The continued operation must meet the requirements of the MEL deferral classification and the requirements for the equipment loss.

B. Other Deferred Maintenance.

(1) Operators frequently use a system to monitor items that have previously been inspected and found to be within serviceable limits. These items are still airworthy yet warrant repair at a later time or when items no longer meet serviceable limits. This method of deferral may require repetitive inspections to ensure the continuing airworthiness of the items. Examples of items that are commonly deferred in this manner are overhead storage bins, seat-belts, and interim airworthy repairs.

(2) Passenger convenience item deferrals that are not safety- or airworthiness-related should be handled per the guidelines of the operator's program. This may include a cabin log.

155. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. Inspector prerequisites include the following:

- Knowledge of the regulatory requirements of FAR Parts 121, 125, and/or 135
- Successful completion of Inspector's Indoctrination Course or previous equivalent, or the En Route Course

NOTE: The En Route Course is a mandatory Flight Standards course. Inspectors who were previously authorized to conduct en route inspections may continue to do so, but must attend the En Route Course at the earliest possible opportunity.

B. Coordination. This task requires coordination with the principal inspectors assigned to the operator and may involve the regional office, the certificate-holding district office (CHDO), and FAA Security.

157. REFERENCES, FAA FORMS, AND JOB AIDS.

A. References.

- Advisory Circular 121-24, "Passenger Safety Information and Briefing Cards," as amended
- Applicable FAA guidance material
- Operator's manual

B. FAA Forms.

- FAA Form 110A, "Aviation Safety Inspector Credentials"
- FAA Form 8430-13, "Request for Access To Aircraft"

C. Job Aids.

- Figure 6.2.3.1., "Air Carrier Cabin En Route Inspection Job Aid"
- Figure 6.2.3.2., "Cabin En Route Interior Inspection Reference Chart"

158. PROCEDURES.

A. Initiate the Cabin En Route Inspection. The inspector should initiate the cabin en route inspection according to the district office work program.

B. Prepare for the Inspection. The inspector should prepare for the inspection by doing the following:

(1) Contact the operator to reserve the cockpit jumpseat.

(2) Complete FAA Form 8430-13 in duplicate. The white copy is presented to the operator, and the yellow copy is kept for FAA records.

C. Coordinate With the Operator. The inspector should coordinate with the operator at least 1 hour prior to the flight. While coordinating, the inspector should do the following:

(1) Identify himself or herself to the operator representative, and state that he or she is performing a cabin en route inspection on a specific flight.

(2) Present FAA credentials, FAA Form 110A, and a completed FAA Form 8430-13 to the operator representative.

(3) Obtain applicable operator boarding authorization per the airline procedures.

(4) Request access to the aircraft as soon as practical (for example, after passengers have deplaned) to meet the flight and cabin crews and perform the interior pre-departure inspection, as time permits.

(5) If aircraft access is denied, the following steps should be taken by the inspector:

- Apprise the operator representative of the regulation authorizing inspector access to aircraft
- Request to see the appropriate supervisor if the representative still refuses access
- Make it very clear to the operator that the denial of access is contrary to regulations and that enforcement action may be initiated
- Report the occurrence to the immediate supervisor upon return to the district office, if access was not granted

D. Coordinate With the Crew. Before boarding the aircraft or performing any inspection, the inspector should coordinate with the crew as follows:

- Identify himself or herself to the captain and to the lead F/A as an FAA inspector
- State the purpose of the inspection

E. Perform the Interior Inspection. The inspector should inspect the following, as applicable:

(1) Cabin placarding, markings, and signs (for example, exits, no-smoking signs, and emergency equipment), to ensure marking legibility and the correct location.

(2) Fire extinguishers for the following:

- To verify the quantity and location
- To ensure that they are properly serviced, tagged, and stowed

(3) Portable oxygen bottles for the following:

- To verify the quantity and location
- To ensure that they are properly serviced, tagged, and stowed
- To determine the condition of the mask, tubing, and connectors

NOTE: There is no requirement that the mask/hose must be connected to the first aid oxygen bottles.

(4) Protective breathing equipment (PBE) for correct location, proper number of units, and proper stowage.

(5) First aid kits and emergency medical kits for correct number, location, and stowage.

NOTE: The FAA does not require first aid and medical kits to be sealed.

(6) Megaphones for correct number, location, general condition, and proper stowage.

(7) Overwater equipment as applicable.

(8) Passenger briefing cards, to ensure the following:

- That they are available for each passenger
- That they are appropriate to the aircraft
- That they contain the required information, to include the following:
  - Emergency exit location and operation
  - Slide use and location
  - Oxygen use
  - Seat-belt use
  - Flotation device use and location
  - Appropriate pictorials for extended overwater operations, including ditching exits, life preservers, and liferaft or slideraft in-flight location
  - Exit seating information

NOTE: In FAR Part 135 operations, additional information concerning safety equipment may also be included, as required.

(9) Passenger seats, to ensure the following:

- That a reclined seat does not block emergency exits
- That the seat cushions are intact
- That the tray table latching mechanisms are operable
- That the self-contained and removable ashtrays are in serviceable condition and are available when smoking is authorized

- That each seat has a complete restraint system
- That seat-belts are operational and not frayed or twisted

(10) Passenger oxygen service units to ensure that they are closed and latched, without any extended red service indicators or pins.

(11) F/A station, to ensure the following:

- That the seat retraction/restraint system is operational and is properly secured
- That the seat-belts are operational and not frayed or twisted
- That the seat cushions are intact
- That the seat headrest is in the correct position
- That the public address (PA) system and interphone are operable
- That aircraft-installed flashlight holders are indeed installed

NOTE: Flashlights are not required to be in the holders; however, when they are, they must be charged and operable.

(12) Galleys, to ensure that the following items are operable:

- The latching mechanisms (primary and secondary)
- The tie-downs
- Other galley restraints

(13) Galleys, to ensure the following:

- That the hot liquid restraint systems is operable
- That the circuit breakers and water shut-off valves are accessible and properly identified
- That the cover and lining of trash receptacles fit properly
- That the non-skid floor is serviceable
- That the girt bar is clean and serviceable
- That the stationary cart tie-downs (mushrooms) are clean
- That the galley carts are in serviceable condition and properly stowed
- That, if applicable, the lower lobe galley emergency cabin floor exits are passable and not covered by carpeting

(14) Galley personnel lift (if applicable) to ensure that it does not move up or down with the doors open and that the activation switches operate properly.

(15) Lavatories, to ensure the following:

- That the placards are present and that the smoke alarm and ashtrays are present and operational
- That the trash receptacle cover and lining fit properly
- That the automatic fire extinguisher system is serviceable

(16) Stowage compartments, to ensure the following:

- That the weight restriction placards are displayed
- That the restraints and secondary latching mechanisms are operable
- That the compartments comply with stowage requirements for accessibility to emergency equipment

(17) Crew baggage, to ensure that it is properly stowed.

(18) Emergency lighting system, to ensure that all emergency lighting, including the floor proximity escape path system, is in serviceable condition (for example, no light covers should be cracked or missing).

(19) Availability of cockpit key to each crewmember.

F. Pre-Departure. The inspector should perform the following during pre-departure:

(1) Ensure that each F/A has an operable flashlight readily available and has the appropriate up-to-date parts of a manual accessible when performing assigned duties.

(2) Ensure that any discrepancies noted during pre-departure are addressed per the operator's manual.

(3) Ensure that the required number of F/A's are aboard.

(4) Observe the F/A's and ground personnel coordinating and supervising the boarding of passengers and properly stowing carry-on baggage.

NOTE: Ensure that the passenger-loading door is not closed until a required crewmember verifies that each piece of carry-on baggage is properly stowed. Proper stowage includes ensuring that the overhead bins are

closed. Items that cannot be stowed must be processed as checked baggage.

(5) Ensure that items such as carry-on baggage and galley supplies do not cover or in any way interfere with aircraft emergency equipment in the overhead compartments.

(6) Ensure that a required crewmember verifies that passengers seated at the emergency exit seats meet the regulatory requirements.

NOTE: At some time prior to takeoff, the F/A must brief the passengers seated in the emergency exit seats on the selection criteria and their willingness and ability to perform the functions, according to the operator's approved program.

(7) Ensure that all passengers are seated prior to any ground movements.

(8) Ensure that the F/A's have sufficient time to take their assigned positions and to secure their restraint systems after giving the passenger briefing.

(9) Ensure that the F/A pre-departure briefing is audible to all passengers and covers the following subjects:

(a) Smoking: When, where, and under what conditions smoking is prohibited, including a statement that federal law prohibits tampering with, disabling, or destroying any smoke detector in an airplane lavatory.

(b) Exit Locations: The preferred method is to physically point out exits.

(c) Seat-belt Use: Instructions on how to fasten, unfasten, and adjust seat-belts.

(d) Flotation Devices: Instructions on the location and use of required individual flotation devices.

(e) Oxygen Use: Instructions on the location of and a demonstration on the use of the oxygen mask. For FAR Parts 125 and 135 operations, this briefing item must only be conducted when the flight will exceed 12,000 feet mean sea level (MSL). When this occurs, the briefing must be given prior to takeoff. For FAR Part 121 operations, the briefing must be given prior to exceeding 25,000 feet MSL.

(f) Extended Over-Water Operations: Instructions on the location, donning, and use of life preservers, liferafts (or sliderafts) and other means of flotation including a demonstration of the methods of donning and inflating a life preserver.

NOTE: The method of donning and inflating infant life preservers is usually substantially different from the method used for an adult life preserver.

(g) Special Passenger Briefings (when applicable): For persons who are handicapped or warrant some other special kind of attention, and for the individuals assisting them.

NOTE: FAR Parts 125 and 135 operators must include in their general briefing the location of survival equipment, when applicable, and the location and use of fire extinguishers.

G. Movement on the Surface. During movement on the surface, the inspector should do the following:

(1) Ensure that all F/A's remain seated during the taxi unless performing safety-related functions. Safety-related activities can include the following:

- Passenger preparedness
- Baggage/cargo/galley stowage
- Exit readiness

(2) Ensure that each exit is closed and locked with the girt bars properly attached (if applicable).

(3) Ensure that the following items or activities are accomplished prior to takeoff:

(a) All stowage compartments are properly secured and latched.

(b) The galley is prepared as follows:

- Loose items are secured
- All serving carts are properly restrained

(c) The cockpit door is closed in accordance with the operator's manual.

(d) Passenger seat-belts are secured.

(e) Any unoccupied F/A seat restraint is properly secured for takeoff.

(f) Any other equipment is properly stowed and secured.

(4) Ensure that crewmembers observe the sterile cockpit rules.

H. In-Flight Operations. During in-flight operations, the inspector should do the following:

(1) Monitor the crewmembers' performance during in-flight operations, to ensure the following:

(a) That during takeoff each F/A remains seated with restraint systems properly fastened.

(b) That after takeoff, before or immediately after the seat-belt illumination is shut off, an announcement is made that passengers should keep

their seat-belts fastened, even when the seat-belt sign is turned off.

(c) That, if the flight is to be a smoking flight, an announcement is made that smoking is only permitted in specific rows and prohibited in the aisles and lavatories when the no-smoking sign is turned off.

(2) Ensure that the following are accomplished, as applicable:

(a) Passenger compliance with seat-belt and no-smoking signs.

(b) Effective crew coordination for flightcrew and cabin crewmember communications—routine and/or emergency.

(c) Turbulent air procedures are followed, including the proper restraint of serving carts, galley equipment, and compliance with instructions from the cockpit and coordination with flight crewmembers.

(d) Crewmember handling of the passengers, to include the following:

- Intoxicated passengers (not serving alcoholic beverages to them)
- Abusive or disruptive passengers
- Handicapped or ill passengers
- Passengers requiring special attention

(3) Ensure that crewmembers, during the approach and landing phases of flight, prepare the cabin for arrival by performing at least the following actions:

(a) Ensuring that carry-on baggage is stowed and that all seat backs and tray tables are upright and stowed, respectively.

(b) Removing all food, beverages, and galley service items from each passenger seat location.

(c) Ensuring that all stowage compartments are latched and secured.

(d) Ensuring that the galley is prepared as follows:

- Loose items are secured
- All serving carts are properly restrained

(e) Ensuring that the cockpit door is closed and locked in accordance with the operator's manual.

(f) Verifying that passenger seat-belts and shoulder harnesses, if installed, are secured.

(g) Properly stowing and securing any other equipment.

(4) Ensure that crewmembers observe sterile cockpit rules.

(5) Ensure that crewmembers are seated in assigned seats before landing, with appropriate restraint systems fastened.

I. Flight Arrival. During flight arrival the inspector should do the following:

(1) Ensure that after landing, the F/A's prepare the aircraft for arrival by performing the following duties:

- Before the captain has turned off the seat-belt sign, ensuring that passengers remain in their seats with seat-belts fastened
- Upon arrival at the gate and after the seat-belt sign has been turned off, preparing the exits for deplaning

NOTE: The girt bar must stay engaged during movement on the surface.

(2) Ensure that the appropriate complement of flight attendants remain on board the aircraft at en route stops (when passengers remain on board the aircraft to proceed to another destination).

(3) Debrief the captain and lead F/A of any procedural problems or discrepancies/malfunctions noted during the flight.

159. TASK OUTCOMES.

A. File Report. The inspector should file FAA Form 8000-36, "Program Tracking and Reporting Subsystem Data Sheet."

B. Results of Completion. Completion of this task can result in either of the following:

- A satisfactory inspection
- The requirement for a followup inspection for a particular discrepancy

C. Document Task. The inspector should file all supporting paperwork in the operator's office file.

160. FUTURE ACTIVITIES. The inspector may schedule a followup inspection, as applicable.

FIGURE 6.2.3.1.
AIR CARRIER EN ROUTE INSPECTION JOB AID

PTRS ACTIVITY:1625 DATE:	AIR CARRIER	FLT NO.	A/C REG NO.	MAKE	MODEL/SERIES

PIC NAME:	BASE	LEAD F/A NAME:	BASE	FROM	TO	RESULTS	HB REF VA.2.4.

U = UNACCEPTABLE; P = POTENTIAL; I = INFORMATION; E = EXCEEDS

AIRCRAFT/EQUIPMENT	
REQ. CERT/PLACARDS	809
LOGBOOKS	804
* Open Items	- -
• Carryovers	- -
* Cabin Items	- -
MEGAPHONES	825
* Location	- -
* Placarded	- -
FIRE EXTINGUISHERS	826
• Correct Type	- -
• Number	- -
* Serviced	- -
• Location	- -
PORTABLE 02 BOTTLES	835
* Number	- -
* Serviced	- -
• Location	- -
• Masks/Hoses	- -
PBE	835
* Properly Stowed	- -
• Placarded	- -
* Sealed	- -
ADDITIONAL EMER. EQUIP.	825
* Life Vests	- -
* Life Rafts	- -
* Emergency radios	- -
* Other	- -
PAX BRIEFING CARDS	825
* At Each Seat	- -
• Reg. Information	- -
PAX SEATS	825
* Emergency Exits	- -
* Condition	- -
* Ash Trays	- -
* Seat Belts/Trays	- -
PAX 02 SERVICE UNIT	835
* Operational	- -
• Service Pins	- -
F/A STATION	825
* Retracts	- -
• Condition	- -
* P/A & Interphone	- -
GALLEYS	825
* Latch Mechanisms	- -
* Restraints/Tiedns/Covers	- -
• Debris/Corrosion	- -
LAVATORIES	825
* Smoke Alarm	- -
* Signs/Lights	- -
* Extinguishers	- -
STOWAGE AREAS	825
• Latch Mechanisms	- -
* Access to Equipment	- -

EMERGENCY LIGHTING	833
* Operable	- -
* Floor System	- -
EXITS	852
* Controls/Seals	- -
• Girt Bar and Brackets	- -
* Signs/Symbols	- -
* Rafts/Lanyards	- -
OTHER REMARKS	889
F/A CREWMEMBERS	
CREW COMPLEMENT	601
* Initial Boarding	- -
* En Route Stops	- -
CREW COORDINATION	737
* With Cockpit	- -
MANUAL AVAILABLE	209
MANUAL CURRENCY	203
PASSENGER HANDLING	637
STERILE COCKPIT	623
* Procedures	- -
* Cockpit Signals	- -
COMPANY DIRECTIVES	631
KNOWLEDGE (ABOUT)	101
• PIC Authority	- -
* Cabin Logbook	- -
• Hijacking	- -
* Decompression	- -
• Cabin Fires	- -
* Turbulent Air Operations	- -
* Unruly Pax	- -
• Emergency Comm. with Cockpit	- -
• Location of all Emergency Equipment	- -
• Contents of Manual	- -
ABILITY/PROFICIENCY	103
* Remove/Demonstrate Use of 02 Bottle and Fire Bottle (Simulated)	- -
* Explain How to Deploy a PSU Manually	- -
• Demonstrate Emergency Exit Procedures	- -

• Demonstrate "Brace for Impact" Position	- -
* Demo Donning of Life Vests (If applicable)	- -
REQUIRED EQUIPMENT	- -
• Manual	- -
* Cockpit Key	- -
• Flashlight	- -
OTHER REMARKS	199
FLIGHT CONDUCT	
PRE-DEPARTURE	723
* Pax Boarding	- -
* Carry-On Bags	627
* Pax Count	- -
* Girt Bars	- -
* Door Preparation	- -
BRIEFINGS	111
* Smoking	- -
• Exit Locations	- -
* Seat Belt Use	- -
* Flotation Means	- -
* Table/Seat Back	- -
* Bags Stowed	- -
* Oxygen Use (If applicable)	- -
* Over-Water Use (If applicable)	- -
* Special Pax (If applicable)	- -
* After T/O and Before Landing Briefings	- -
TAXI/TAKEOFF	725
* Items Secured	- -
* F/A's Seated	- -
* T/O Signal	- -
CRUISE	729
* In-Flight Svc	- -
• Turbulence	- -
LANDING/TAXI	735
* Items Secured	- -
* F/A's Seated	- -
OTHER REMARKS	749

FIGURE 6.2.3.2.
CABIN EN ROUTE INTERIOR INSPECTION REFERENCE CHART

ITEM	AIRCRAFT	CREWMEMBER	FLIGHT CONDUCT	OPERATIONS
Approved Infant or Child Restraint System	Placement and Approved Type	Knowledge of Location, Placement, and Approved Use	Proper Use and Placement	
Carry-on Baggage	Proper Restrains and Placards for Cargo Compartments	Knowledge of Approved Program	Properly Stowed Ensure Compliance	Screened by Ground Personnel Number or Size Allowance
Cockpit Key	Accessible to All Crewmembers	Knowledge of Location	Use of Key	
Emergency Lights Proximity Lighting	Condition	Knowledge of Activation		
Emergency Medical Kit	Proper Number Installed and Secured	Knowledge of Location and Authorized Use		
Evacuation Slides/Rafts	Proper PSI Condition of Floor Brackets	Knowledge of Location and Operation		
Exit Seating	Briefing Card on Each Affected Seat	Knowledge of Procedures Verify Occupant's Eligibility	Compliance with operator's approved program	Ground Support
Exits/Cabin Doors	General condition (Seals, Handles, etc.)	Knowledge of Normal and Emergency Use	Doors Armed During Aircraft Movement	
F/A Crew Complement	Number of Passenger (Pax) Seats	Knowledge of Required Number of Crewmembers	Evenly Distributed	Ground Personnel and F/A Coordination Prior to Boarding
Fire Extinguishers	Number Installed Type Inspection Date	Knowledge of Use		
First Aid Kits	Number Installed and Properly Secured	Knowledge of Location and Use	Proper Use	
Fixed Oxygen System	Components Closed - No Extension of Red Tags	Knowledge of System and Locations of Additional Drop-Down Masks		
Flashlights	Number Equal to Number of Crewmembers	Knowledge of Locations		
Galley Lifts	Safety Interlock Mechanism Operational	Knowledge of Operation	Proper Use, No More Than One Occupant	
Handicapped Passenger Briefing		Knowledge of Handicapped Briefing	Briefing Stowage of Assistance Devices	

FIGURE 6.2.3.2.—Continued
CABIN EN ROUTE INTERIOR INSPECTION REFERENCE CHART

ITEM	AIRCRAFT	CREWMEMBER	FLIGHT CONDUCT	OPERATIONS
Jumpseats	Automatic Retract/Locking Harness/Seat Belt Condition of Seat Harness and Belt	Knowledge of Use	Use During Takeoff and Landing	
Lavatories	Placards Trash Receptacle Smoke Detectors Ashtrays	Preflight Check Knowlege of Operations	Responsive to Smoke Detector, if Activated	
Life Vests	Accessible to All Pax (If Installed)	Knowledge of Use and Location		
Life Rafts (If Installed)	Proper Number and Location (Capacity to Accommodate All Pax)	Knowledge of Location, Operation, and Use of Accessory Kits		
Manual	Includes Information Specific to Aircraft	Knowledge of Content	Accessible Current	
Megaphones	Correct Number Installed	Knowledge of Use and Removal From Bracket		
Passenger Info/Safety Briefing	PA or Video - Clarity	Demonstration and Verbal Briefing Content	Performed Prior To Takeoff	
Pax Seat Belts	Installed General Condition	Knowledge of Use		Pax Seat Belt Discipline When Sign is Illuminated
PBE	Properly Installed Secured	Knowledge of Location and Procedures for Use		
Placards	Installation	Preflight Check		
Portable Oxygen	Number Installed Stowed PSI	Knowledge of Use	Proper Use Execution of Administrative Procedures	
Safety Briefing Cards	Conveniently Located Applicable to Aircraft	Knowledge (Presence and Location)		Technically Correct
Seatback/Tray Table	Latching Mechanism	Knowledge of Securing Procedures	Check to Ensure Full Upright Position During Takeoff and Landing	

FIGURE 6.2.3.2.—Continued
CABIN EN ROUTE INTERIOR INSPECTION REFERENCE CHART

ITEM	AIRCRAFT	CREWMEMBER	FLIGHT CONDUCT	OPERATIONS
Service Carts	Condition Properly Secured	Knowledge of Use	Proper Use/Not Left Unattended Without Securing	
Sterile Cockpit	Signals	Knowledge of Procedures	Compliance	

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CHAPTER 2. SPECIFIC TYPES OF INSPECTIONS

SECTION 9. CREW AND DISPATCHER RECORDS INSPECTIONS (PTRS CODE 1627)

275. GENERAL. This section provides direction and guidance to operations inspectors for the inspection of crew and dispatcher qualification, training, and currency records of Federal Aviation Regulations (FAR) Part 121 or FAR Part 135 operators. The objective of a crew and dispatcher records inspection is to determine whether or not the operator's records provide documentation that the operator has complied with regulatory training and qualification requirements. The inspection shall establish whether or not the operator is keeping the required records and whether or not the required training and qualification events are being conducted. Before conducting a records inspection, inspectors must be thoroughly familiar with volume 3, chapter 11, of this handbook; FAR § 121.401(c) and FAR § 121.683 or FAR § 135.63 as applicable; and this section.

277. PROCEDURES FOR CONDUCTING A RECORDS INSPECTION. This paragraph contains a general description of the procedures inspectors will use when conducting records inspections. Inspectors may modify these guidelines to meet local conditions.

A. Location. Inspectors normally conduct a records inspection at the place where the operator maintains the records. The inspection process does not require that the operator surrender records, even temporarily, and records may not be removed from the operator's premises without the operator's permission. Should an agreement be reached for inspectors to remove records, the operator must be given an itemized receipt for all records.

B. Preparation and Initial Briefing. Normally, advance notice, to the operator, of a planned records inspection is appropriate.

(1) An introduction and initial briefing should be given to the operator. The briefing should describe the purpose of the inspection, what records will be required, and that a debriefing will take place at the conclusion of the inspection.

(2) Prior to conducting any records inspections, inspectors must become familiar with the operator's system of recordkeeping and become familiar with which specific records are available at the facility. This familiarization is particularly important when the operator is using a computer-based recordkeeping system as detailed in volume 3, chapter 11, section 4, of this handbook.

(3) Prior to their arrival, inspectors should prepare a list of records to be inspected since a records inspection uses the operator's work space and usually takes time away from an employee's assigned duties. Pre-planning and preparation for a records inspection reflect positively on the professionalism of the Federal Aviation Administration (FAA) and should result in as little disruption to the operator's work routine as possible.

NOTE: Information from previous records inspections that are contained in the Program Tracking and Reporting Subsystem (PTRS) should be accessed to aid the inspector in determining the strategy and scope of the inspection.

C. Records Selection. Before conducting a records inspection, inspectors must determine the number of records to be examined, which categories of the records that will be inspected, and to what depth records will be scrutinized.

(1) Chapter 1, section 1, of this volume provides general guidance to inspectors for determining the actual number of records to examine.

(2) Inspectors may obtain information on crewmember and dispatcher population from the Vital Information Subsystem (VIS).

D. Records Handling. Care should be taken to keep records as intact as the operator presents them. The preferred procedure is for inspectors to take only a few records at a time, examine them, then return that batch to the operator before starting on another batch. If it is necessary or desirable to obtain a copy of a record, the operator may not be willing or able to provide it. In this case, inspectors must make arrangements for copies.

E. Errors or Omissions in Records. A records inspection is not an investigation, yet inspectors may find errors or omissions in an operator's records.

Minor errors and omissions may not constitute a lack of compliance on the part of the operator and may not require the inspector to initiate enforcement action. Some errors or omissions, though, may require further action. For example, a crewmember training record may be found that does not indicate that required recurrent training was accomplished.

(1) Further investigation may produce evidence that the training actually was completed. This omission may easily be corrected on the spot by the operator and may preclude the need for the inspector to initiate enforcement action. In this case, the inspector should record in the PTRS that the problem occurred, was brought to the operator's attention, and was corrected on the spot by the operator. The inspector should discuss, with the operator, methods for preventing a repetition of the problem and should record, in the PTRS, the operator's intended fix.

(2) If the operator cannot produce evidence that the training was conducted, the inspector shall record the facts so that an investigation according to FAA Order 2150.3, "Compliance and Enforcement," can later be opened. The inspector who discovers the discrepancy is responsible for recording the finding in the PTRS and initiating an investigation.

279. CATEGORIES OF RECORDS. This paragraph lists the airman and dispatcher records required by FAR §§ 135.63 and 121.683. Some or all of the categories are required for pilots, flight engineers, flight navigators, flight attendants, flight and ground instructors, designated examiners, check airmen and aircraft dispatchers. Volume 3, chapter 11, section 3, of this handbook gives guidance as to the retention period for each of these categories of records.

A. Airman Training and Qualification Records. The operator's recordkeeping procedures should be reviewed to ensure that the training and qualification required for the individual's present duty assignment is documented. Individual records should be reviewed according to the sampling plan to verify that the operator is correctly managing the training and qualification program.

(1) The training and qualification requirements of FAR Part 121 and FAR Part 135 can be complex (see volume 3, chapter 2, section 7, of this handbook).

(2) FAR § 121.401(c) and FAR § 135.323(c) require that the documentation of ground, flight, or qualification segments contain a certification by the instructor, supervisor, or check airman that the crewmember or dispatcher is knowledgeable and proficient. In an electronic recordkeeping system, the certification does not have to be made by means of a signature.

B. Medical Qualification Records. Inspectors should observe that any required medical certificates are current and appropriate to the applicable airman certificate.

C. Route, Special Airport, Area Qualification Records. Inspectors must ensure that operators have documented that the pilot-in-command (PIC) has met the special currency requirements of FAR § 121.443, FAR § 121.445 or FAR § 135.229. Inspectors must also ensure that operators with the authority to conduct flights requiring Class II navigation or to operate in special-use airspace (such as minimum navigation performance specification (MNPS), North Pacific (NOPAC), or Central East Pacific (CEPAC)) document the successful completion of required training and qualification for each flight crewmember.

D. Operating Experience or Operating Familiarization Records. Documentation should verify that operating experience or operating familiarization has been accomplished.

(1) All FAR Part 121 crewmembers and FAR Part 135 PIC's in commuter operations must have completed the required operating experience prior to being assigned unsupervised duty in revenue service.

(2) FAR Part 121 PIC's who have completed initial upgrade training for an operator that uses approved simulator training under FAR § 121.409(c) must have been observed by an FAA inspector during operating experience.

(3) Aircraft dispatchers must have completed operating familiarization.

E. Recency-of-Experience Records. This category refers to events, other than required checks, that operators must accomplish within a specified time period to remain qualified to serve in revenue operations.

(1) Pilots must complete 3 takeoffs and landings each 90 days. FAR § 121.439 requires that the landings be made in type. FAR § 135.247 requires that the landings be made in category and class and, if a type rating is required, in type. FAR § 135.247 also requires that a pilot complete 3 night landings within the previous 90 days to be eligible to serve at night. Training in night landings is required by Appendix E of FAR Part 121.

(2) Flight engineers must have acquired 50 hours or a proficiency check within the past 6 months.

F. Check Airman, Aircrew Program Designee (APD), and Designated Examiner Records. Operator records should verify that check airmen have completed appropriate training, have maintained currency

in the crew position they are evaluating, and that letters of authorization or designation have been maintained. The inspector should observe that operators record the number of qualification functions being performed by check airmen.

G. Special Training and Testing Requirements. The inspector should observe that operators that conduct such operations as air ambulance operations keep records of specialized training.

H. Employment History. Inspectors should ensure that the operator's flight crewmember records document action taken concerning an individual's release from employment for physical or professional disqualification as required by FAR § 121.683(a)(2) or FAR § 135.63(a)(4)(ix).

281. PTRS INPUT. The inspector must record any inspection of airman records or any category of the records in the PTRS by using activity code 1627.

282.–292. RESERVED.

[PAGES 6-252 THROUGH 6-262 RESERVED]

CHAPTER 2. SPECIFIC TYPES OF INSPECTIONS

SECTION 10. GROUND DEICING/ANTI-ICING INSPECTIONS

293. OBJECTIVE. Federal Aviation Regulations (FAR) §§ 121.629, 125.221, and 135.227 state that no pilot may take off an airplane when frost, ice, or snow is adhering to its wings, control surfaces, engines, or propellers. The primary objective of ground deicing/anti-icing inspections is to determine if the operator has practices and procedures in place that will meet the requirements of the applicable FAR on ground deicing/anti-icing. To fully determine that the operator has such procedures in place and is effectively using these procedures, the aviation safety inspector (ASI) will inspect specific areas of the ground deicing/anti-icing procedures. The areas required to be inspected will depend on applicable FAR and operations specifications (OpSpecs).

295. GENERAL GROUND DEICING/ANTI-ICING INSPECTION PRACTICES AND PROCEDURES. Prior to the beginning of the deicing/anti-icing season, inspectors should become familiar with the FAR Parts 121, 125, and 135 operators' ground deicing/anti-icing plans and the airports' ground deicing/anti-icing plans. Volume 4, chapter 8, section 1, of this handbook provides background information on ground deicing/anti-icing, and the differences between FAR Part 121 and 135 procedures. Section 2 contains policy, direction, and guidance on the approval of ground deicing/anti-icing procedures for FAR Parts 121 and 135. Paragraph 1749A(1) of section 2 gives the prerequisites to conducting ground deicing/anti-icing surveillance. Inspectors should follow the instructions in that paragraph and familiarize themselves with the rest of the information in these sections prior to the ground deicing/anti-icing season. It is essential that inspectors complete the two computer-based instruction (CBI) programs specifically prepared to cover ground deicing/anti-icing. These programs are "Evaluating and Approving a Ground Deicing/Anti-Icing Program," a CBI program for FAR Part 121 operations; and "Part 125/135 Ground Deicing/Anti-icing Operations" course number 25007. Each Regional Flight Standards Division and each Flight Standards District Office has been issued a copy of these CBI's.

297. GROUND DEICING/ANTI-ICING INSPECTION AREAS. The POI should observe the following general inspection areas to determine an operator's compliance with the ground deicing/anti-icing rules.

- Flightcrew
- Maintenance and ground personnel
- Training program
- Airport deicing/anti-icing plan and secondary deicing/anti-icing areas
- Equipment
- Fluids

A. Flightcrew. Inspectors should ensure that the flightcrew is familiar with the operator's deicing/anti-icing procedures, has been trained and/or tested in the operator's procedures, and is familiar with the airport ground deicing/anti-icing plan and any remote deicing/anti-icing capabilities. Procedural areas include the following:

(1) Holdover time (when appropriate):

- Specific weather conditions
- Temperature
- Type of fluid used

(2) Procedures for communication:

- Deicing/anti-icing start time
- Documentation
- ATC coordination
- Current weather information
- Verification of deicing/anti-icing

(3) Procedures for pretakeoff check, pretakeoff contamination check, or outside-the-aircraft check (OTAC):

(4) Computation of latest takeoff time.

B. Maintenance and Ground Personnel. Inspectors should ensure that the maintenance and ground

personnel are familiar with the operator's deicing/anti-icing program and have been trained and/or tested in the operator's procedures. Procedural areas include the following:

(1) Knowledge of aircraft manufacturer's ground deicing/anti-icing procedures:

- Knowledge of deicing/anti-icing methods and equipment
- Knowledge of pretakeoff check, pretakeoff contamination check, or OTAC

(2) Holdover time (when appropriate):

- Specific weather conditions
- Temperature
- Type of fluid used

(3) Cockpit Communications:

- Type of fluid being used
- Deicing/anti-icing start time
- Confirmation that deicing/anti-icing is complete and the airplane is clean

C. Operator's Ground Deicing/Anti-Icing Training Program. Inspectors should ensure that the operator has approved training procedures in place that have met the training and/or testing requirements of the applicable FAR. These procedures should ensure that all personnel involved in airplane ground deicing/anti-icing are knowledgeable of their duties and responsibilities.

(1) Records. Inspectors must ensure that the operator has a recordkeeping system in place to verify that all personnel have been properly trained in the operator's procedures. Records should include the following:

- Types of training (including initial and recurrent)
- Dates of training received

(2) Training for pretakeoff check, pretakeoff contamination check, and/or OTAC.

D. Airport Deicing/Anti-Icing Plan and Secondary Deicing/Anti-Icing Areas. If an airport deicing/anti-icing plan has been developed, then the inspectors should have a general knowledge of this plan and any secondary deicing/anti-icing areas.

(1) Deicing/Anti-Icing Control Center. Many airports have developed command centers that control the movement of aircraft, the allocation of slot times, the location of remote deicing/anti-icing, and runway snow removal. The inspector should become familiar with the planned procedures prior to the deicing/anti-icing season.

E. Equipment. Inspectors should have a general level of knowledge of the deicing/anti-icing equipment.

F. Fluids. Inspectors should be familiar with the types of fluids used for deicing/anti-icing.

(1) Type I Applications:

- Performance characteristics
- Mix ratio
- Temperature

(2) Type II Applications:

- Performance characteristics
- Mix ratio
- Temperature
- Airplane rotation speed

(3) Storage Requirements.

299. SPECIFIC GROUND DEICING/ANTI-ICING INSPECTION PRACTICES AND PROCEDURES.

A. Operator Procedures. Surveillance of the operator's procedures should clearly show the FAR Part that is being used to meet the ground deicing/anti-icing rule. Recall that an operator may have several options under FAR Parts 121, 125, or 135, as applicable, to meet the requirements of the rule. These options are discussed in volume 4, chapter 8, sections 1 and 2, of this handbook.

(1) Crewmember Training. Crewmember training must meet the requirements of the rule and the approval process discussed in volume 4, chapter 8, section 2.

(2) Inclusions in Crewmember Training. Crewmember Training should include at least the following information:

- The use of holdover times and tables when using deicing/anti-icing fluids (These holdover times are only advisory in FAR Part 135 operations and will only guide the pilot as to what contamination to expect when conducting the pretakeoff contamination check.)
- Airplane deicing/anti-icing procedures; inspection and check procedures, to include responsibilities and requirements for the pretakeoff contamination check, the OTAC, or the alternative procedures as applicable

- Communications with all personnel or agencies involved in the deicing/anti-icing process and the decision making process
- Airplane surface contamination, to include adherence of frost, ice, or snow and critical area location and identification; knowledge of how small amounts of surface contamination adversely affects airplane performance and flight characteristics
- Types and characteristics of deicing/anti-icing fluids, if fluids are used by the certificate holder

NOTE: It is important that flightcrews do not use deicing/anti-icing fluids unless they have been trained in characteristics and effects of these fluids on their operation.

- Cold weather preflight inspection procedures
- Techniques for recognizing contamination on the airplane (This aspect of training should cover both preflight inspection and pretakeoff contamination check.)

NOTE: All training should be airplane specific. When an operator has different kinds of airplanes, any unique characteristics of these airplanes while operating in ground icing conditions should be covered.

B. Program Tracking and Reporting Subsystem (PTRS). Several examples of the correct entries to use on the PTRS Data Sheet are included in the CBI training course, "Part 125/135 Ground Deicing/Anti-Icing Operations," course number 25007.

(1) Correct PTRS entries for deicing/anti-icing surveillance are as follows:

Operations	1637
Maintenance	3625
Avionics	5625

(2) All deicing/anti-icing surveillance activities require that the word "ICE" be written in the "National Use" block. This is especially important in a surveillance situation when an inspector is conducting a separate activity and observes deicing/anti-icing during that surveillance. The example given in the CBI and in sample 4.8.2.1. shows a maintenance inspector conducting a ramp inspection when a snow squall develops. In this case the inspector continues to use the original activity number for a ramp inspection 3627, and places "ICE" in the "National Use" block. The additional deicing/anti-icing information should be placed in the comment section as the example shows. The inspector has the option of using a separate data sheet for each activity if there is no conflict in the work time recorded for each activity.

300.–314. RESERVED.

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CHAPTER 3. TECHNICAL GROUPS, BOARDS, AND NATIONAL RESOURCES

SECTION 2. AIRCRAFT EVALUATION GROUPS (AEG)

211. GENERAL. This section contains information and guidance for operations inspectors on the services that an AEG can provide to inspectors and on the purposes and functions of the boards managed by AEG's. As a member of the Flight Standards Service, an AEG serves as a liaison with the aircraft certification office (ACO), which begins during the initial certification of an aircraft and continues throughout the service life of the aircraft. In addition, the AEG is responsible for providing guidance to Flight Standards field offices on flight crewmember qualification requirements, requirements for dispatching aircraft with equipment inoperative, and for required operational and maintenance procedures for such a dispatch.

A. AEG Inspector Role. AEG specialists are fully qualified Flight Standards aviation safety inspectors (ASI) for either the operations, airworthiness, or avionics specialties, with extensive experience in their fields. These inspectors work directly with the ACO during the certification process. An AEG is responsible for providing technical expertise during certification activities to ensure that an aircraft design may be operated in compliance with the Federal Aviation Regulations (FAR). The AEG inspectors advise manufacturers during the design and certification process of operational requirements, minimum flightcrew complement, recommended flight crewmember training, and other procedural requirements. The inspectors participate in engineering activities by evaluating items such as flight characteristic differences from the base aircraft, the operational impact of new aircraft equipment, and proposed master minimum equipment list (PMMEL) items.

B. AEG Liaison Role. An AEG serves as a liaison between Flight Standards and the ACO. For example, if an operator requests a procedure that changes the airplane's takeoff performance, the AEG acts as liaison between the principal operations inspector (POI) and the ACO.

213. AEG RESPONSIBILITIES. An AEG has a variety of responsibilities, which include the following:

- Providing operational input to FAA engineering offices and to the manufacturer during the aircraft design and type certification process
- Evaluating the aircraft, its systems, and the manufacturer's recommended procedures for unique operational characteristics
- Determining recommended minimum flight crewmember training, checking, and currency requirements
- Establishing pilot type rating needs and requirements
- Participating in crew complement determinations
- Establishing special training requirements (such as dutch roll training in a B-727)
- Developing and revising master minimum equipment lists (MMEL)
- Developing maintenance program requirements and reviewing maintenance programs to determine whether there are adequate instructions for the procedures being used
- Providing operational guidance for airworthiness directives (AD), service difficulty reports (SDR), and supplemental type certificates (STC)
- Convening and providing a chairperson to flight standardization boards (FSB), flight operations evaluation boards (FOEB), and maintenance review boards (MRB)
- Conducting initial flight checks of Flight Standards operations inspectors, the aircraft manufacturer's initial pilot cadre, initial operator pilots, and Federal Aviation Administration (FAA) engineering flight test pilots, if necessary, for a new aircraft type
- Coordinating with the National Simulator Team on the evaluation of data packages for flight simulator acceptance

215. ACCIDENT OR INCIDENT INVESTIGATION SUPPORT. When accidents or incidents

involving AEG-assigned aircraft occur, investigating Flight Standards District Offices (FSDO) may use the experience of AEG inspectors to support the investigation or to develop corrective actions. These AEG inspectors are assigned to aircraft types and are able to address operational safety concerns such as crew procedures, flight operations, maintenance, and, to a limited extent, human factors.

217. BOARDS CONDUCTED BY THE AEG. The AEG provides many of its technical services through the FOEB's, FSB's, and MRB's. Operations inspectors may be invited to participate as members of the FOEB and the FSB. Membership on MRB's, however, is restricted to airworthiness and avionics inspectors.

219. DUTIES OF THE AEG OPERATIONS SPECIALISTS. The duties of an AEG operations specialist vary according to the complexity of the aircraft and the regulations under which the aircraft is certified. They work directly with ACO personnel to provide operational guidance during the certification process. Participation in engineering test flights allows these inspectors to become familiar with the aircraft.

221. POI ASSIGNED TO A SPECIFIC MANUFACTURER (RESERVED).

223. LOCATIONS. The locations of AEG's are as follows:

A. MKC-AEG, Kansas City, Missouri, is responsible for those airplanes certified under FAR Part 23, including commuter category airplanes and Special Federal Aviation Regulation (SFAR) 41 airplanes, and some small airplanes certificated under FAR Part 25, also gliders and blimps.

B. FTW-AEG, Fort Worth, Texas, is responsible for rotorcraft certificated under FAR Parts 27 and 29, and vertical lift.

C. BOS-AEG, Burlington, Massachusetts, is responsible for aircraft engines and propellers certificated under FAR Parts 33 and 35.

D. SEA-AEG, Seattle, Washington, is responsible for FAR Part 25 airplanes; for example, Boeing and Airbus.

E. LGB-AEG, Long Beach, California, is responsible for FAR Part 25 airplanes; for example, Douglas and Lockheed.

F. AFS-60, Aircraft Evaluation Program Staff, Washington Headquarters, is responsible for oversight of the administrative and technical programs within the AEG.

NOTE: FAA certification of foreign-built aircraft is handled by the AEG responsible for that particular aircraft (for example, ASW-270 for foreign-built helicopters).

224.–234. RESERVED.

[PAGES 8-93 THROUGH 8-100 RESERVED]

CHAPTER 3. TECHNICAL GROUPS, BOARDS, AND NATIONAL RESOURCES

SECTION 3. FLIGHT OPERATIONS EVALUATION BOARDS (FOEB)

235. GENERAL. This section contains a description of the purpose, composition, and responsibilities of an FOEB. This section also contains guidance to be used by operations inspectors for using the resources available from an FOEB and for serving as a member of an FOEB.

237. RESPONSIBILITIES OF THE FOEB. An FOEB is established through its assigned aircraft evaluation group (AEG) as discussed in volume 8, chapter 3, section 2. The primary tasks of an FOEB are the development and revision of master minimum equipment lists (MMEL). The FOEB also has responsibility for coordinating with organizations such as aircraft certification offices (ACO), aircraft and engine manufacturers, operators, and private sector groups such as the Air Transport Association of America (ATA), the Regional Airline Association (RAA), and the Air Line Pilot Association (ALPA). An FOEB is responsible for coordinating with both the ACO and the aircraft manufacturer to develop an MMEL prior to the certification of an aircraft. An FOEB is also responsible for sending a copy of meeting minutes, the proposed MMEL, and any subsequent revisions, to AFS-200 for review and coordination by the AEG manager prior to approval.

239. COMPOSITION OF AN FOEB. An FOEB is usually comprised of a chairperson from an AEG, Flight Standards District Office (FSDO) aviation safety inspectors (ASI), and ACO engineering personnel, as follows:

A. Chairperson. The FOEB chairperson is an AEG operations specialist who is normally the chairman of the applicable flight standardization board (FSB).

B. FOEB Members. Members of an FOEB are usually selected from the following specialties:

- An operations inspector
- An engineering representative, normally a flight test pilot
- A maintenance inspector assigned to the maintenance review board (MRB) for the aircraft
- An avionics inspector assigned to the MRB for the aircraft
- A representative from Flight Standards Service Headquarters, if available

241. RESPONSIBILITIES OF FOEB MEMBERS. The FOEB chairman, members, and other participants have the following responsibilities:

A. FOEB Chairperson. The chairperson's primary tasks are to plan board functions, serve as a board member, and to prepare the meeting agenda. The chairperson also prepares minutes of each meeting.

B. FOEB Members. Members review documents, contribute technical expertise, and respond to private sector comments and questions. Members participate in all meetings, as requested by the chairperson.

C. Other Participants. When invited by the chairperson, private sector participants (primarily manufacturers, operators, vendors, and representatives from other groups such as ATA, ALPA, and RAA) may attend and provide information at FOEB meetings. The chairperson may also invite other FAA personnel to attend.

243. MASTER MINIMUM EQUIPMENT LIST DEVELOPMENT. The process of MMEL development is described in detail in volume 4, chapter 4, section 2, of this handbook. Within this process, the FOEB has the following responsibilities for the initial MMEL development and MMEL revisions:

A. Meetings with the Private Sector. The MMEL is developed during meetings between the FOEB, private sector groups, and other FAA participants. At these meetings there are opportunities for all participants to comment on specific items, using the proposed master minimum equipment list (PMMEL) as a worksheet. Items are either approved,

denied, or tabled as open items, pending further data or justification.

B. MMEL Approval and Distribution. The FOEB chairperson sends the recommended MMEL to AFS-200 for concurrence, after which it is approved and released to Flight Standards Service and the public.

C. Revisions to the MMEL. A request to revise the MMEL may be initiated by an operator. Requests for revisions to the MMEL are submitted with operations and maintenance procedures ("O" and "M" procedures) and engineering data to substantiate the requested change, through the appropriate Flight Standards principal inspector (either the principal operations (POI), maintenance (PMI), or avionics inspector (PAI)) assigned to the operator. The principal inspector coordinates with the FOEB through the responsible AEG to ensure that MMEL revision proposals are submitted in the proper format and that the proposals include all required information (see volume 4, chapter 4, section 2, for a description of the MEL revision process). Those revisions that affect the safety of flight will be considered by the FOEB immediately. Foreign operators and organizations such as ATA and ALPA can submit revisions going to the manufacturer directly to the FOEB chairman.

244.–254. RESERVED.

[PAGES 8-103 THROUGH 8-110 RESERVED]

CHAPTER 3. TECHNICAL GROUPS, BOARDS, AND NATIONAL RESOURCES

SECTION 4. FLIGHT STANDARDIZATION BOARDS (FSB)

255. GENERAL. This section contains information for inspectors about the purpose, composition, and responsibilities of FSB's and about resources available to inspectors through the FSB. This section also contains guidance for inspectors who may be invited to serve as members of an FSB.

257. ESTABLISHMENT OF AN FSB. An aircraft evaluation group (AEG) decides when to establish an FSB. FSB's are usually established for large turbojet and turbopropeller aircraft, Special Federal Aviation Regulation (SFAR) 41 airplanes, and Federal Aviation Regulation (FAR) Part 23 commuter category airplanes. FSB's are not usually established for FAR Parts 23 and 27 aircraft, unless the aircraft have unique design, flight, or handling characteristics.

259. COMPOSITION OF AN FSB. An FSB is usually composed of a chairperson from an AEG, Flight Standards operations inspectors, a Washington Headquarters representative, and various technical advisors, as follows:

A. Chairperson. The chairperson is usually an AEG operations specialist assigned to the aircraft certification project.

B. Operations Inspectors. FSB members are usually operations inspectors who will be involved with the initial operational approval of the aircraft.

C. Washington Headquarters Representative. FSB membership may also include a representative from either AFS-200, AFS-400, or AFS-800, as appropriate. This representative helps ensure that Federal Aviation Administration (FAA) policy is considered by the FSB.

D. Technical Advisors. At the discretion of the chairperson, technical advisors from other AEG boards may be invited to attend.

261. RESPONSIBILITIES OF THE FSB. The FSB's primary responsibilities are to determine the requirements for pilot type ratings, to develop minimum training recommendations, and to ensure initial flight crewmember competency in accordance with AC 120-53, "Crew Qualification and Pilot Type Rating Requirements for Transport Category Aircraft Operated Under FAR Part 121." This information is published in a report that is sent to AFS-200 for coordination. After approval, it is to be used by the principal operations inspector (POI) as guidance in approving operator training, checking, and currency programs. The report is distributed to field offices through the master minimum equipment list subsystem (MMEL Subsystem) of the Aviation Safety Analysis System (ASAS) data base. Specific functions of the FSB are as follows:

A. Determination of Pilot Type Ratings. The FSB determines the requirement for a pilot type rating for new aircraft usually during certification flight tests. The FSB also evaluates differences in follow-on aircraft to determine if a new pilot type rating is required.

B. Development of Training Objectives. The FSB develops training objectives for normal and emergency procedures and maneuvers and reviews training device requirements.

C. Training Recommendations. The FSB publishes recommendations for use by POI's during approval of an operator's training program. In developing training objectives and procedures, the FSB considers unique requirements of an aircraft such as the fly-by-wire electronic flight control system and the side-stick controller of the Airbus 320.

D. Initial Training/Checking. Board members usually conduct initial training and checking of the manufacturer's pilots and FAA operations inspectors.

E. Review of Existing Training Programs. When required, the FSB may review training programs for existing aircraft to evaluate the effectiveness of the training.

F. Accidents. In case of an accident, FSB members may be consulted on training or crewmember competency issues involving aircraft assigned to the board.

263. RESPONSIBILITIES OF FSB MEMBERS. The FSB chairperson and members have the following responsibilities:

A. FSB Chairperson. The chairperson is required to attend the pre-type certification board meeting, and is responsible for scheduling meetings during the certification process.

B. FSB Members. Members attend scheduled meetings and participate in formulating the FSB report.

265. FSB REPORT. After concurrence by AFS-200, the FSB report is approved by the AEG office manager. FSB reports are entered into the ASAS data base where they are available to FAA field offices. The FSB report should contain the recommended minimum training requirements that operations inspectors may use when evaluating operator training programs.

A. Report Considerations. FSB reports are based on a variety of factors, including private sector comments, flight test evaluation, and operating experience.

B. Final Determinations and Findings. The FSB may hold public meetings and invite private sector groups to attend, after which the FSB will make a final determination and issue recommendations.

C. Contents of the FSB Report. The FSB report should contain the following:

- The assignment of type ratings
- A recommendation of minimum training, checking, and currency requirements
- Any special training requirements

NOTE: The FSB report contains only recommended minimum training requirements. Further guidance on training program approval is found in AC 120-53 and in volume 3 of this handbook.

267. TRAINING REQUIREMENTS FOR FOLLOW-ON AIRCRAFT. In determining the need for different training requirements for follow-on aircraft, the FSB requests a revised training program from the manufacturer and evaluates differences between the base aircraft and its variant, based on factors such as design and operational or procedural differences. Advancements in technology that affect flight deck automation and aircraft systems are also considered. In addition, the FSB may collect and review background materials such as the original training programs and the aircraft's operating history, including accidents or incidents. If the FSB determines that additional training is required for the follow-on aircraft, the operator shall usually modify training programs for the base aircraft and establish a differences training program to address the variant aircraft.

269. USE OF FLIGHT SIMULATORS OR TRAINING DEVICES. When new equipment is installed on the aircraft, flight simulators or training devices should be updated to reflect the correct configuration. The FSB, in coordination with the National Simulator Team, shall determine whether training devices are adequate for meeting regulatory and training requirements.

270.–280. RESERVED.

[PAGES 8-113 THROUGH 8-120 RESERVED]

CHAPTER 3. TECHNICAL GROUPS, BOARDS, AND NATIONAL RESOURCES

SECTION 5. MAINTENANCE REVIEW BOARDS (MRB)

281. GENERAL. This section contains limited, general information for operations inspectors on the purpose of MRB. Since the function of an MRB is strictly maintenance, it requires no operational input; therefore, operations inspectors do not participate as members of an MRB. For a more detailed discussion, inspectors should refer to Federal Aviation Administration (FAA) Order 8300.10, "Airworthiness Inspector's Handbook."

283. BACKGROUND. The MRB process was developed as a result of the introduction of wide-body aircraft (for example, the Douglas DC-10, the Lockheed L-1011, and the Boeing 747). The increasing complexity of these aircraft required that a methodical assessment be made of the individual aircraft maintenance requirements to ensure the highest level of aircraft safety and reliability. The FAA, aircraft operators, and aircraft manufacturers jointly formulate initial maintenance and inspection requirements for newly certificated aircraft and powerplants. The FAA, operators, and manufacturers have developed a method of decision logic that establishes more efficient scheduled maintenance programs for these new aircraft.

285. FUNCTIONS OF AN MRB. Through the chairperson, an MRB performs the following functions:

- Establishes the FAA minimum maintenance and inspection requirements for transport category aircraft, engines, propellers, and auxiliary power units
- Participates in industry steering committee (ISC) meetings to review the MSG-3 analysis as presented by working groups
- Accepts the MRB report after AFS-300 concurrence (The manufacturer is responsible for publishing and distributing initial and revised MRB reports.)

287. COMPOSITION OF AN MRB. An MRB is comprised of a chairperson from the appropriate aircraft evaluation group (AEG). The chairperson invites qualified aviation safety inspectors (ASI) from the field to participate as FAA working group advisors. The MRB chairperson is an advisor to the ISC. FAA Order 8300.10 and Advisory Circular (AC) 121.22, "Maintenance Review Board (MRB)" as amended, provide detailed guidance on the MRB process.

288.–300. RESERVED.

[PAGES 8-122 THROUGH 8-130 RESERVED]

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*(TBD)=TO BE DEVELOPED

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