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Proposed Advisory Circular No. 120–53A, Crew Qualification and Pilot Type Rating Requirements; Notice

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

[Docket Number FAA–2007–28498]

Proposed Advisory Circular No. 120–53A, Crew Qualification and Pilot Type Rating Requirements for Transport Category Aircraft Operated Under 14 CFR Part 121

AGENCY: Federal Aviation Administration, DOT.

ACTION: Notice of availability of a proposed advisory circular and request for comments.

SUMMARY: This notice announces the availability of and requests comments on a proposed revision to Advisory Circular (AC) No. 120–53, Crew Qualification and Pilot Type Rating Requirements for Transport Category Aircraft Operated under 14 CFR part 121. That AC provides the Federal Aviation Administration (FAA) guidance for the evaluation and approval of flight crew qualification programs and the issuance of pilot type ratings for flight crews operating under 14 CFR part 121. The proposed AC streamlines the process described in AC 120–53 for determining the level of differences between aircraft and the credits the FAA assigns between those aircraft for the purposes of training, checking, and recency of experience requirements. The applicability of the proposed AC would be limited to operations conducted under 14 CFR part 121.

DATES: Comments must be received on or before October 29, 2007.

ADDRESSES: Send all comments on the proposed AC to Docket Number FAA–2007–28498, using any of the following methods:

- DOT Docket Web site: Go to *http://dms.dot.gov* and follow the instructions for sending your comments electronically.
- Government-wide rulemaking Web site: Go to *http://www.regulations.gov* and follow the instructions for sending your comments electronically.
- Mail: Send comments to the Docket Management Facility; U.S. Department of Transportation, 1200 New Jersey Avenue, SE., West Building Ground Floor, Room W12–140, Washington, DC 20590.
- Fax: Fax comments to the Docket Management Facility at 202–493–2251.
- Hand Delivery: Bring comments to the Docket Management Facility in Room W12–140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

FOR FURTHER INFORMATION CONTACT: Greg Kirkland, Air Transportation Division (AFS–220), Federal Aviation Administration, 800 Independence Avenue, SW., Washington, DC 20591; telephone: (202) 267–8166, e-mail *Greg.Kirkland@faa.gov*.

SUPPLEMENTARY INFORMATION:

Authority: 49 U.S.C. 106(g), 40113, 44701, 44702, 44703.

Comments Invited

The proposed AC is published at the end of this notice. You may also receive an electronic copy of the proposed AC by accessing the FAA's web page at *http://www.faa.gov/regulations_policies/rulemaking/recently_published.* Interested parties are invited to submit comments on the proposed AC to Docket No. FAA–2007–28498. All communications received on or before the closing date for comments will be considered by the FAA before issuing the final AC.

Advisory Circular (AC) NO. 120–53, ''Crew Qualification and Pilot Type Rating Requirements For Transport Category Aircraft Operated under 14 CFR part 121.''

On May 13, 1991, the FAA issued AC 120–53 to provide guidance on the process the FAA uses when determining the level of flight crew training required to operate an aircraft under 14 CFR part 121. The regulations establish requirements for training, checking, and recency of experience for flight crews operating an aircraft under part 121.

Further, the AC provides guidance for determining the level of differences between comparative aircraft when a pair of aircraft have similar handling or flight characteristics. An applicant may submit documentation requesting the FAA consider the commonality in that pair of aircraft be sufficient to allow credits for that commonality, which may then reduce the amount of duplicative training and checking requirements and may also reduce, for some aircraft, the recency of experience required by 14 CFR 121.439 (a). After completion of the comparative process, if the FAA is convinced that the two aircraft types share sufficient common characteristics, then the FAA authorizes qualified flight crews to receive training, checking, and in some cases, recency of experience credits for that commonality.

Advisory Circular 120–53 standardizes the application process for applicants and explains the training and checking credits available when the system differences between related aircraft models are from Level A through D. For example, a difference that amounts to no more than a knowledge-based difference that can be addressed in pilot training by using a computer-based course of instruction (*e.g.*, the B–757–200 and the B–767–200 hydraulic systems), would be a Level B difference. On the other hand, a difference that involves full pilot task training (*e.g.*, visual display and switch position requirements between the B–767–200 and the B–767–400) would be a Level D difference necessitating pilot training in a full task training device.

The AC also explains the process for allowing full or partial credit for recency of experience that may be permitted when aircraft handling qualities are similar. For example, handling qualities for the Airbus A–320, A–330, and A–340 aircraft were found to be similar, therefore credit for recency of experience was allowed.

If an additional series of related aircraft models having similar handling qualities and commonality of systems is type certificated, the FAA uses the guidance in AC 120–53 when deciding to allow credit for training, checking, and recency of experience. When difference levels between the aircraft models do not exceed Level D, credit is usually allowed. For example, evaluation of the differences in the flight deck configuration (*e.g.*, visual displays and switch positions) of the B–767–400 determined that Level D differences existed between the B–767–400 and the B–767–200 and B–767–300 series. Therefore, the FAA allows credit for training and checking for Level A through D differences between the B–767–200/300 and the B–767–400.

These credits have been provided also within families of aircraft (same make but different models sharing commonality) with similar handling qualities and no greater than Level D system differences. Examples of programs that have taken advantage of these credits are: ''Common Pilot Type Rating'' used by Boeing and ''Cross Crew Qualification'' (CCQ) used by Airbus.

Proposed Revisions to AC No. 120–53A

In view of the success of the common pilot type rating and CCQ programs under AC 120–53, proposed AC 120–53A describes the same process as AC 120–53 for evaluating the differences between comparative aircraft and determining the training, checking, and recency of experience requirements based on a commonality determination. Proposed AC 120–53A restates certain processes to make them more easily understood and applied by the FAA and industry in view of innovations and

advancements in technology and aircraft design that were not envisioned when AC 120–53 was written.

This proposed AC:

- Updates the guidance to reflect the increasing commonality evolving in contemporary transport category aircraft design.
- Streamlines the process, with clearly defined tests, that permit an applicant to apply for, and the FAA to allow credit for demonstrating sufficient commonality between aircraft. The process is updated by incorporating elements of the T2 and T4 tests into the new T6 test.
- Shifts the emphasis from documenting the commonalities to documenting the differences between aircraft types.
- Makes definitional changes. ''Common type rating'' is replaced by ''Common pilot type rating.'' The term ''variant'' has been eliminated and its meaning has been consolidated into one term, ''related aircraft.'' It also separates the terms ''Currency'' and ''Recent experience.''
- Introduces the term ''Common Takeoff and Landing Credit'' applicable to receiving credit for recency of experience.

Updates the guidance to reflect the increasing commonality evolving in contemporary transport category aircraft design.

Aircraft manufacturers are now designing more aircraft that share similar handling and flight characteristics. The use of common flight deck designs has also become prevalent. These commonalities improve the safety of aircraft operations and provide an opportunity in the proposed AC for the FAA to recognize this improvement in safety by reducing the need for some duplicative training.

Streamlines the process, with clearly defined tests, that permit an applicant to apply for, and the FAA to allow credit for demonstrating sufficient commonality between aircraft.

This proposed AC provides a systematic means with clearly defined tests that permit an applicant to apply for, and the FAA to allow credit for successfully demonstrating commonality between aircraft. For example, the T6 test criteria are clearly defined to give applicants more standardized, specific test criteria than the current T2 and T4 tests. The T6 test requires the applicant to show a commonality within a specific weight range, center of gravity range and maximum demonstrated crosswind for takeoff and landing.

Shifts the emphasis from documenting the commonalities to documenting the differences between aircraft types.

The proposed AC shifts the emphasis from documenting the commonalities to documenting the differences between aircraft types. The applicant would continue to show commonalities and the similarities in handling and flight characteristics by demonstrating the absence of differences. Where differences do exist, those differences would be addressed by the appropriate training, checking, and recency of experience requirements. In the proposed AC the FAA would continue to allow credit for aircraft shown to have commonality as in AC 120–53.

Makes definitional changes.

''Common type rating'' is replaced by ''Common pilot type rating'' to show a clearer difference between a pilot type rating and a type certificated aircraft.

The terms ''variant'' and ''related aircraft'' were used interchangeably in AC 120–53 causing some confusion. The term ''variant'' has been eliminated and its meaning has been consolidated into one term, ''related aircraft.'' For example, related aircraft would be two or more aircraft of the same make (Airbus), but not necessarily under the same type certificate (A–320, A–330 and A–340).

The AC 120–53 definitions of ''currency'' and ''recent experience'' were considered synonymous and used interchangeably. This interchangeable use ofterms has led to confusion. The proposed revision separates the terms to eliminate any further confusion.

Introduces the defined term Common Takeoff and Landing Credit applicable to receiving credit for recency of experience.

A Common Takeoff and Landing Credit (CTLC) allows recency of experience credit between related aircraft of the same make with different type certificates that can be demonstrated to have similar handling and flying characteristics. This credit is applied toward meeting the requirements of 14 CFR 121.439.

Conclusion

The concept of commonality and the use of credits can reduce unnecessary training costs while providing an acceptable method of compliance with the existing regulations. Only the FAA can make a determination of commonality; and while an applicant may ask the FAA for a finding of commonality, the FAA will only make such a finding after the FAA is satisfied that sufficient commonality exists to permit crediting.

The history of safe operation of the B–757 and B–767 with a common pilot type rating, and the successful use of similar programs (CCQ) with other aircraft models by European manufacturers demonstrates that the FAA can continue to safely allow credit for training, checking, and recency of experience between aircraft that have demonstrated commonality. The entire proposed AC is published with this Notice for the convenience of the reader as Attachment 1.

Issued in Washington, DC, on August 14, 2007.

James J. Ballough,

Director, Flight Standards Service.

Attachment 1—Advisory Circular (AC) No. 120–53, Crew Qualification and Pilot Type Rating Requirements for Transport Category Aircraft Operated Under 14 CFR Part 121

Advisory Circular

Subject: Crew Qualification and Pilot Type Rating Requirements for Transport Category Aircraft Operated Under Part 121.

Date: MM/DD/YY.

Initiated by: AFS–200.

[AC No: 120–53A]

This advisory circular (AC) provides an acceptable means, but not the only means, of compliance with the Code of Federal Aviation Regulations (CFRs) regarding qualification and type rating of flight crewmembers operating under Part 121 of the CFRs. Included are criteria for the determination and approval of training, checking, and currency necessary for the operation of aircraft. This AC also describes the process by which the Federal Aviation Administration (FAA) determines the qualification of the pilot-in-command (PIC) or second-in-command (SIC) of new or modified aircraft. Details of the systems, processes, and tests necessary to apply this AC are explained in the appendices. Provisions of this AC are intended to enhance safety by:

- Providing a common method of assessing applicant programs.
- Directly relating pilot training and qualification requirements to fleet characteristics, operating concepts, and pilot assignments.
- Permitting better planning and management of fleets, pilot assignments, and training resources by outlining what FAA requirements apply, what training resources or devices are needed, and what alternatives are possible.
- Permitting timely and consistent decisions about fleet acquisition, integration, modification, or phaseout associated with pilot qualification or pilot assignments.

- Permitting manufacturers to design aircraft that take advantage of new technology or their similarity with existing related aircraft, as appropriate to a particular operator's fleet.
- Encouraging cockpit standardization by crediting commonality and identifying necessary constraints when differences exist.
- Providing a framework for application of suitable credits or constraints to better address new technology and future safety enhancements.

1. Focus. This AC addresses aircraft manufacturers or modifiers who design, test, and certificate aircraft as well as approved 14 CFR part 142 training centers. In addition, it applies to operators whose pilots operate several related aircraft of the same manufacturer in a mixed fleet and operators seeking credit for prior pilot experience with related aircraft of the same manufacturer.

2. Cancellation. AC 120–53, Crew Qualification and Pilot Type Rating Requirements for Transport Category Aircraft Operated Under CFR Part 121, Dated May 13, 1991, Is Canceled.

3. Discussion.

a. A System for Pilot Qualification. The FAA specifies qualification criteria (minimum training, checking, and currency) for particular aircraft through Flight Standardization Board (FSB) evaluations and findings. FSB findings are described in reports for specific aircraft. The reports provide guidance to certificate-holding district offices (CHDO) for use by principal operations inspectors (POI) and other inspectors. FSB report provisions serve as a basis for the FAA to approve operators' programs and for pilot certification.

b. Changing Needs. Necessary support for the FSB process is provided by the industry. In the past, procedures varied by manufacturer, individual project, operator, and other factors including:

(1) Introduction of new and related aircraft and increases in the significance of modifications to existing aircraft, particularly with regard to engines or avionics.

(2) Integration of related fleets of aircraft following airline acquisitions or mergers.

(3) Increased dependence on leased aircraft, many of which are configured differently than an operator's basic fleet.

(4) A wider variety of equipment options available in new or retrofit aircraft.

(5) Introduction of new technology in cockpit enhancements.

4. Summary of Revisions. This AC describes necessary revisions and enhancements to the FSB process to address uniform, systematic, timely, and comprehensive application of pertinent 14 CFR parts in a changing and increasingly complex operational environment. This AC revision deletes master common requirements due to a lack of practical application. This AC recognizes the concept of reduced differences between related aircraft and defines the training, checking, currency, and recency of experience requirements.

a. This AC revision clarifies and introduces new terms and concepts. These include:

(1) Clarification of the terms ''aircraft type certificate'' and ''related aircraft''.

(2) The difference between currency and recency of experience is defined.

(3) A definition of ''common pilot type rating'' now including levels A through D for any aircraft of the same make but of different aircraft type certificates (TC).

(4) Modified checking requirements to embrace the concept of checking only at the difference levels between related aircraft.

(5) A new term, ''common takeoff and landing credit'' (CTLC).

(6) An introduction of the T6 test to provide for CTLC (recency of experience) in mixed fleet flying between separate type-certificated aircraft with common takeoff and landing characteristics. The intent of the T6 test is to provide a comparison of aircraft that have not previously been evaluated for CTLC using the T2 test.

(7) A means to identify and evaluate new technologies that may not be associated with an aircraft evaluation.

(8) A distinction between supervised line flying (SLF) and operating experience (OE).

b. Additional concepts are introduced to uniformly apply the 14 CFR parts applicable to pilot qualification and the differences. The AC's main concepts are summarized as follows.

(1) *Master Difference Requirement (MDR).* Master requirements are expressed in the form of MDRs. MDRs are requirements applicable to pilot qualification that pertain to differences between related aircraft. MDRs are specified by the FSB in terms of difference levels.

(2) *Difference Levels.* Difference levels are formally designated levels of training methods or devices, checking methods, or currency methods that satisfy difference requirements between related aircraft. Difference levels specify FAA requirements proportionate to and corresponding with increasing differences between related aircraft. A range of five difference levels in order of increasing requirements, identified as A through E, are each specified for training, checking, and currency.

(3) *Operator Difference Requirement (ODR).* Operators show compliance with the FAA MDRs through an operator's specific ODR, which lists each operator's fleet differences and compliance methods. ODRs specify requirements uniquely applicable to a particular fleet and mixed flying situation and are based on the MDRs. ODRs are those operator-specific requirements necessary to address differences between a base aircraft and one or more related aircraft, when operating in mixed fleet flying or seeking credit in transition programs. ODRs include both a description of differences and a corresponding list of minimum training, checking, and currency compliance methods that address pertinent FSB requirements.

Note: These and other concepts are more fully described in the appendices.

5. Setting FAA Requirements. The FSB process is made up of proposal development, testing, draft requirement formulation, FSB final determinations and FAA approval.

a. Applicants' Proposals. Aircraft manufacturers or modifiers usually initiate proposals for formulation or amendment of FSB requirements. This is done in conjunction with application for aircraft type certification or supplemental type certification of an aircraft or system. The FAA, operators, and, in certain instances, other organizations or individuals, may initiate proposals or amendments.

b. Standardized Tests. A main element of the requirements formulation process is the use of standardized testing to determine pilot qualification requirements. One or more of six tests are applied depending on the proposal's degree of differences between related aircraft, difference levels sought, and the outcome of any previous tests. Only the necessary tests are used. Tests may be waived or difference levels may be assigned based on operational experience.

c. FAA Formulation and Implementation of Requirements. Following testing and formulation of draft requirements, FSB requirement determinations are then made specifying MDRs and any necessary supporting information. Supporting information may pertain to operator certification, airmen certification, approval of devices and simulators, and other items necessary for proper application of MDRs. FSB reports will be used in the evaluation, certification, and approval of operators' programs.

d. Revision of Requirements. FSB reports are periodically updated when new or modified aircraft are introduced, when requested by an applicant based on OE, or when the FAA determines it is necessary for safety reasons.

e. Pilot Type Ratings. A new pilot type rating is typically assigned when level E training differences are determined between the candidate aircraft and the base aircraft. The pilot type rating determination and any training, checking, and currency specifications established under the testing process of this AC are determined by evaluating the handling qualities and core pilot skills related to the candidate aircraft. Systems such as heads-up display (HUD), Enhanced Vision Systems (EVS), or Synthetic Visions Systems (SVS) may require Level E training without requiring a new pilot type rating. The FSB, with the concurrence of the Air Transportation Division, AFS–200, will make this determination.

f. Common Pilot Type Rating. A common pilot type rating is assigned when no greater than level D training differences are determined between aircraft of the same type with different aircraft TCs.

g. Same Pilot Type Rating. A same pilot type rating is assigned when no greater than level D training differences are determined between aircraft with the same aircraft TCs (series).

6. Operator Compliance with FAA Requirements.

a. Obtaining FSB Information. Operators are advised of pertinent FSB information through FAA CHDOs and POIs. Operators may also obtain FSB information from aircraft manufacturers or modifiers, other operators, or other aviation organizations that maintain awareness of FAA policies, and the Web site *http://www.opspecs.com.*

b. Certificated Operator Compliance with Mixed Fleet Flying. When aircraft are flown in mixed fleets, certificated operators will comply with MDRs and other FSB difference provisions. Certificated operators accomplish this by identifying a base aircraft, describing differences that exist between their base aircraft and the candidate aircraft, and by specifying particular means of compliance to satisfy MDRs. Sample FSB ODRs provide guidance for the approval of an operator's mixed fleet flying program and specify necessary constraints or permissible credits. The description of specific differences and compliance methods are identified in the operator's ODRs. Constraints or credits may relate to knowledge, skills, devices, simulators, maneuvers, checks, currency, or any other factors necessary for safe operations. Constraints or credits may be applied generally or only to specific aircraft or pilot positions. Once approved, the operator's program must be conducted in accordance with (IAW) these approved ODRs. ODR proposals are provided to the FAA CHDO in a standard tabular format and are approved by POIs only if they meet MDRs and other pertinent FSB requirements. The operator must apply to amend the ODRs when changes occur in the base aircraft, comparison aircraft, and/or training devices that affect the approval basis of the ODRs.

c. Credit between Programs. In addition to mixed fleet flying, ODRs may be used to permit credit between related aircraft in differences or transition training and checking programs, consistent with FSB provisions.

7. FAA Approval of Operator Programs.

a. POI Approval. FAA POIs approve operator programs when those programs comply with FSB provisions. If less restrictive programs are proposed, POIs advise the applicant that:

(1) A request for change of the MDRs must be initiated;

(2) The differences between related aircraft must be reduced or eliminated; or

(3) An alternate approval must be sought.

Note: An example of such a request is an exemption to the applicable requirement of the training section of the operational rule under which the operation is conducted.

b. Limitations of POI Authority. When applicable, POIs may approve programs within provisions of the FSB report and this AC. AC provisions apply because other general constraints are identified such as a limitation on the number of different related aircraft that can be used in mixed fleet flying. POIs shall not approve programs outside the bounds of FSB or AC provisions without the authorization of AFS–200. Deviation from FSB or AC provisions will be approved by AFS–200, only when an equivalent level of safety can be demonstrated.

8. Application of FSB Requirements to Airmen Certification. The evaluation items that FSB reports specify include the following:

- Knowledge;
- Skills;
- Abilities;
- Maneuvers;
- Performance criteria; and
- Other relevant items for proficiency checking or other checks/tests may be identified. This is appropriate to address any aircraft-specific factors affecting the safe operation of that aircraft operated under 14 CFR.

9. Training Device and Simulator Approvals.

a. Standard Devices or Simulators. Standardized training methods, devices, or simulators are associated with each of the training difference levels. Devices or simulators are approved for particular operators by their POIs, consistent with National Simulator Program (NSP) qualification and FSB master requirements.

b. Special Criteria. In some instances, standard device or simulator criteria may not be appropriate for new technology. The FSB may specify additional criteria in FSB reports in these instances.

10. Review and Approval. This is a process for review of FSB evaluations and approval of FSB reports.

11. Appeal of FAA Decisions. The Director, Flight Standards Service, AFS–1, assigns responsibility to resolve appeals of the FSB findings.

James Ballough,

Director, Flight Standards Service.

APPENDIX 1.—DEFINITIONS AND REFERENCES

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1. Definitions
2. References (current editions)

Appendix 1.—Definitions and References

1. Definitions.

Note: Definitions provided in Appendix 1 apply exclusively to this advisory circular (AC).

Aircraft Evaluation Group (AEG). FAA organization that sets training, checking, currency, pilot type rating, Master Minimum Equipment List (MMEL), and maintenance standards Maintenance Review Board (MRB) for assigned certificated aircraft types. AEGs also address operational aspects of aircraft type certification and resolution of service difficulties.

Applicant. For the purposes of this AC, an applicant may be a manufacturer, modifier, or operator.

Base Aircraft. An aircraft designated by the applicant used as a reference to compare differences with another aircraft.

Candidate Aircraft. The aircraft that will be subjected to the FSB evaluation process outlined in this AC for comparison purposes.

Common Pilot Type Rating. A pilot license endorsement between separate type-certificated aircraft for the purposes of pilot type rating that passes the testing criteria of the T1 (equivalence) or the T2 (handling characteristics) and T3 (core pilot skills with no greater than level D differences). A common pilot type rating endorsement is issued after a pilot has received differences training and checking, where required, on the type-certificated aircraft for which there is a common pilot type rating designation. The pilot who is receiving the additional endorsement must be current and qualified in the base aircraft; since, the check is not a ''full'' proficiency check as defined by Title 14 of the Code of Federal Regulations (14 CFR), but an abbreviated differences check

on the differences from the base to the candidate aircraft. The differences check, unless it includes the requirements for a recurrent check, cannot reset the ''recurrent clock'' (a pilot's base month for checking purposes).

Common Takeoff and Landing Credit (CTLC). CTLC is a program/process that allows recency of experience credit between related aircraft (same make) with different type certificate data sheets (TCDS) that can be demonstrated to have the same handling and flying characteristics during the following:

- Takeoff and initial climb; and
- Approach and landing, including the establishment of final landing configuration.

Note: The T6 test is used for aircraft that were not tested (T2) during the initial aircraft evaluation for pilot type rating designation.

Configuration. Aircraft physical features, which are distinguishable by pilots, with respect to differences in systems, cockpit geometry, visual cutoff angles, controls, displays, aircraft geometry, and/or number of required pilots.

Currency. Currency is the recent experience necessary for the safe operation of aircraft, equipment, and systems as designated by the Flight Standardization Board (FSB).

Difference Levels. Difference levels are formally designated levels of training methods or devices, checking methods, or currency methods that satisfy differences requirements between related aircraft. A range of five difference levels in order of increasing requirements, identified as A through E, are specified for training, checking, and currency purposes.

Differences Training. Training required before any person may serve as a required crewmember on an aircraft of a type for which differences training is included in the certificate holder's approved training program.

Differences Check. A partial proficiency check of the qualification of a pilot at the difference levels between related aircraft. A differences check can be between series of the same aircraft type certificate (TC) or between aircraft of separate aircraft TCs of the same manufacturer.

Flight Characteristics. Flight characteristics are handling characteristics or performance characteristics perceivable by a pilot. Flight characteristics relate to the natural aerodynamic response of an aircraft, particularly as affected by changes in configuration and/or flight path parameters (*e.g.*, flight control use, flap extension/retraction, airspeed change, etc.).

Flight Operations Evaluation Board (FOEB). The FOEB is responsible for preparation and revision of MMELs. The board members are drawn from the FAA.

Flight Standardization Board (FSB). The FSB is responsible for specification of minimum training, checking, currency, and pilot type rating requirements, if necessary, for U.S. certificated civil aircraft. The board members are drawn from the FAA (AEG, Headquarters, Flight Standards field offices operations personnel).

Handling Characteristics. The manner in which the aircraft responds with respect to rate and magnitude of pilot initiated control inputs to the primary flight control surfaces (*e.g.*, ailerons, elevator, rudder, spoilers, cyclic, collective, etc.).

Line Oriented Simulation (LOS). Use of a simulator in place of the aircraft to reinforce the understanding of differences between related aircraft. LOS should not be confused with operating experience (OE), which is required by 14 CFR.

Line Operational Flying (LOF). The LOF phase of the test is used at the discretion of the FSB during the T3 test to validate the proposed training and checking. The LOF fully assesses particular difference areas, examines implications of mixed fleet flying, assesses special circumstances such as minimum equipment list (MEL) effects, and evaluates the effects of pilot errors potentially associated with the differences.

Master Difference Requirements (MDR). MDRs are those requirements applicable to pilot qualifications that pertains to differences between related aircraft. MDRs are specified by the FSB in terms of the minimum difference levels. MDRs form the basis for an operator to develop their operator differences requirements (ODR).

Mixed Fleet Flying. Mixed fleet flying is the operation of a base aircraft and one or more related aircraft for which credit may be taken for training and/or checking events. The FSB process defines minimum training and checking difference levels between related aircraft.

Operational Characteristics. As used with respect to aircraft, means those features that are distinguishable by limitations, flight characteristics, normal procedures, nonnormal procedures, alternate or supplementary procedures, or maneuvers.

Operator Difference Requirements (ODR). If differences exist within an operator's fleet that affect pilot knowledge, skills, or abilities pertinent to systems or procedures, ODR tables provide a uniform means for operators to comprehensively manage difference programs and provide a basis for FAA approval of mixed fleet flying.

Pilot Type Rating. A pilot type rating is a ''one time'', permanent endorsement on a pilot certificate indicating that the holder of the certificate has completed the appropriate training and testing required for its issuance as determined by regulation and by the applicable FSB report. It is recorded by the FAA on the pilot's certificate indicating the make, model, and series of aircraft, if applicable. Title 14 CFR requires a pilot type rating to serve as pilot-in-command (PIC) and in some cases as second-in-command (SIC) of U.S. civil large or turbojet aircraft.

Recency of Experience. With respect to flight experience as required by 14 CFR, means a pilot's completion of the required number of takeoffs and landings as sole manipulator of the controls within the preceding 90 days.

Related Aircraft. Related aircraft are any two or more aircraft of the same make that have been demonstrated and determined to have commonality to the extent that credit between those aircraft may be applied for training, checking, or currency, as documented through MDR and approved by the FSB.

Same Pilot Type Rating. A pilot type rating assigned when no greater than a level D training difference is determined between aircraft with the same aircraft TCs (series).

Series. Aircraft sharing the same aircraft type certification with specific variations that are usually defined by the manufacturer and usually result in an amended aircraft TC.

Supplementary Procedures. Those procedures that are identified in the Flight Crew Operation Manual (FCOM) under the section ''Supplementary Procedures'' describing procedures not described under the ''Normal Procedures'' or ''Nonnormal Procedures'' sections.

Supervised Line Flying (SLF). Supervised experience associated with the introduction of equipment or procedures requiring post qualification skill enhancement during which a pilot occupies a specific pilot position and performs particular assigned duties for that pilot position under the supervision of a qualified company instructor or check airman.

Training Footprint. A training footprint is a summary description of a training program, usually in short tabular form, showing training subjects, modules, procedures, maneuvers or other program elements, which are planned for completion during each day or phase of training.

2. References (Current Editions)

- Title 14 CFR parts 1, 61, 91, 135, and 121.
- Order 8400.10, Air Transport Operations Inspector's Handbook.
- AC 61–89, Pilot Certificates, Aircraft Type Ratings.
- AC 120–35, Line Operational Simulations: Line Oriented Flight Training, Special Purpose Operational Training, Line Operational Evaluation.
- AC 120–40, Airplane Simulator Qualification.
- AC 120–45, Airplane Flight Training Device Qualification.
- AC 120–51, Crew Resource Management Training.
- FAA–S–8081–5, Aircraft Type Rating Practical Test Standards for Airplane.

APPENDIX 2.—PILOT QUALIFICATION AND PILOT RATING REQUIREMENTS

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APPENDIX 2.—PILOT QUALIFICATION AND PILOT RATING REQUIREMENTS

1. Purpose

This appendix provides a comprehensive description of the system for pilot qualifications outlined in this advisory circular (AC). It includes definitions, criteria, processes, tests, methods, and procedures necessary for uniform application of the system.

2. Focus

The appendix applies to and is used by:

a. Aircraft manufacturers or modifiers who design, test, and certificate Title 14 of the Code of Federal Regulations (14 CFR) parts 23, 25, 27, and 29 aircraft.

b. Operators who operate under 14 CFR.

c. Operator, manufacturer, or other training centers having programs approved for use under 14 CFR.

d. Federal Aviation Administration (FAA) offices and inspectors administering programs under 14 CFR.

3. Introduction

a. A Comprehensive System for Pilot Qualification. This AC and its appendices provide a systematic means to address requirements for training, checking, and currency within applicable 14 CFR parts. Definitions, criteria, processes, procedures, tests, and methods are consistent with and clarify application of current rules in particular situations for specific aircraft. This AC provides a comprehensive system for the FAA and industry to describe, evaluate, and approve use of particular aircraft and operator programs. The respective roles of training, checking, currency and airmen certification are clarified. This includes defining the role and criteria for designation of pilot type ratings for existing, new, or modified aircraft. The system is particularly suited to addressing transition, differences programs, and mixed fleet flying. The system aids in assuring that pilots attain and maintain the knowledge, skills, and abilities needed to operate assigned aircraft safely.

b. Master Differences Requirements (MDRs) Set by FAA. The FAA's Flight Standardization Board (FSB) sets MDRs to address differences between related aircraft.

c. Specification of Constraints or Credits. The system permits the specification of constraints or permissible credits. Constraints or credits may relate to knowledge, skills, abilities, devices, simulators, maneuvers, checks, currency, or any other such factors necessary for safe operations. Constraints or credits may apply generally to aircraft, particular pilot positions, or other situations or conditions.

d. Recognition of Unique Operator Characteristics. The system recognizes the unique characteristics of individual operators while achieving uniformity in application of FAA safety standards. FAA MDRs determine uniform bounds to tailor individual operator's unique requirements to a particular fleet and situation. Principal operations inspectors (POI) approve each operator's unique requirements within FAA MDRs. Operator unique requirements accommodate particular combinations of related aircraft flown, pilot assignment policies, training methods and devices, and other factors that relate to the application of the FAA MDRs. Accordingly, the system preserves operator flexibility while standardizing the FAA's role in review, approval, and monitoring of training, checking, and currency programs within 14 CFR.

e. Basis for Requirements. The determination of pilot type rating, minimum differences training, checking and currency requirements focus on basic operation of aircraft in the National Airspace System (NAS) under both instrument flight rules (IFRs) and visual flight rules (VFR). Included are all flight phases from preflight to shutdown under both normal and nonnormal conditions.

f. Relationship to Other FAA Policies. Although this AC, and the FSB requirements in some instances, address particular types of operations or specific aircraft systems (e.g., use of flight guidance control systems for Category II/III instrument approaches, long-range navigation, etc.), other ACs address these issues more thoroughly. This AC and FSB requirements address such issues only to the extent necessary to assure that pilots are qualified to operate pertinent systems or equipment as part of initial or continuing qualification.

4. Concepts

a. An Integrated System for Pilot Qualification.

(1) *System Elements.* An integrated FAA/applicant system and process established to determine appropriate requirements, applies the requirements, and meets those requirements on a continuing basis, for uniform pilot qualification.

(2) *System Overview.* The system uniformly applies FAA master requirements in a way that tailors a particular aircraft to any operator's unique situation or fleet. The FAA approves unique operator and fleet requirements for each operator based on FAA master requirements. The system develops FAA master requirements based on objective criteria and tests, with applicants' support for analysis and testing. FSB reports for related aircraft describe FAA master requirements. MDRs express FAA master requirements. Minimum acceptable difference levels between related aircraft articulate MDRs. An operator's training program, checklist, operations manuals, pilot certification, CTLC programs, and other such approvals are by-products of compliance with MDRs. Operators comply with MDRs using unique ODRs, tailored to that operator's programs and approved by the FAA. ODRs, based on and in compliance with the MDRs, specify requirements uniquely applicable to a particular operator's mixed fleet flying situation. An operator's specific document

describes ODRs by identifying a base aircraft, differences between related aircraft, and that operator's compliance methods for each related aircraft. Paragraph 4j describes ODRs. Paragraph 6 describes ODR preparation and use. Paragraph 7 describes FAA approval of ODRs.

b. MDRs.

(1) *MDR Applicability.* MDRs are those requirements applicable to pilot qualification that pertain to differences between related aircraft. MDRs specify the minimum acceptable difference levels between related aircraft that may be approved for operators. One related aircraft is selected by the applicant as a reference for comparison purposes and is considered a base aircraft. This is typically the first aircraft on which pilots are qualified, or is the aircraft of which an operator has the largest number. Difference levels between the base aircraft and other related aircraft then specify the minimum difference requirements to be met for pilot qualification. Major differences in a particular fleet are defined between groups of related aircraft rather than specifying differences between each possible configuration and combination of configurations between related aircraft. MDRs are specified in terms of training difference levels described in paragraph 4d and are shown on an MDR table.

(2) *MDR Content.* MDRs specify the minimum training, checking, and currency acceptable to the FAA for pilot qualification regarding differences.

(3) *MDR Formulation, Description, and Revision.* MDRs are formulated by the FAA FSB for each related aircraft. MDRs are originally specified when an aircraft is first type certificated. MDRs are formulated using standardized tests and evaluations in conjunction with the type certification or supplemental type certification process. MDRs are based on an applicant's (usually an aircraft manufacturer) proposal, FAA evaluation of that proposal, OE, and test results when tests are necessary. FSB determinations also consider operator recommendations, safety history, and other relevant information. MDRs are described in provisions of an FSB report and may be revised if necessary. MDRs are revised when aircraft are developed or modified, tests or OE shows a need for revision, a revision is requested by an applicant and evidence indicates the need for revision, or rules or FAA policies change. MDRs are revised by a process similar to that used for initial formulation of requirements.

(4) *MDR Use.* MDRs are applied to specific operators through formally described ODRs that are developed by and tailored to each operator. FAA field offices use the MDRs as the basis for approval of individual operator's differences programs for approval of initial or transition programs where credit for previous training or experience with other related aircraft is sought.

(5) *The MDR Table.* An example of typical MDRs for the B–737–200, –300, –400, –500, –600, –700, –800, and –900 is shown in Figure 1. MDR table requirements are shown for each pair of aircraft by notations in each element of corresponding columns and rows of the table. Each element of the table identifies the minimum differences training, checking, and currency requirements applicable to mixed fleet flying. The MDR table identifies a pertinent base aircraft and particular aircraft for which requirements are sought. Note the minimum difference levels that correspond to the pertinent column and row, and special requirements in footnotes, if applicable.

(6) *Use of Higher or Lower Difference Levels.* Operators must satisfy difference requirements by using the methods acceptable for the specified level or a higher level. Lower level methods may be used in addition to the required levels but may not substitute for the required level or be used exclusively instead of the required level.

PILOT TYPE RATING: B-737		FROM AIRCRAFT				
		B-737 BASIC B-737-100, 200 (SP77)	B-737-200 ADV	B-737-300, 400, 500 (NON-EFIS)	B-737-300, 400, 500 (EFIS)	B-737-600, 700, 800, 900
TO AIRCRAFT	B-737 BASIC B-737-100, 200 (SP77)	A/A/A (2) NAV-B/B/C (6) PMS-C/B/C	B/A/B (2) NAV-B/B/C (6) PMS-C/B/C	C*/C*/D	C*/C*/D	D/D/D
	B-737-200 ADV	B/A/B (1) PDCS-C/B/C (2) NAV-B/B/C (4) AFCS-C/B/C (6) PMS-C/B/C	A/A/A (1) PDCS-C/B/C (2) NAV-B/B/C (4) AFCS-C/B/C (6) PMS-C/B/C	C*/C*/D (1) PDCS-B/B/C (2) NAV-B/B/C (5) LIMITED FMS-C/B/C	C*/C*/D (1) PDCS-B/B/C (2) NAV-B/B/C	D/D/D (1) PDCS-B/B/C (2) NAV-B/B/C
	B-737-300, 400, 500 (NON-EFIS)	C*/C*/D (5) LIMITED FMS-C/B/C	C*/C*/D (5) LIMITED FMS-C/B/C	A/A/A (7) CROSS MODEL-A/A/B	C/B/B	(8) C/B/B
	B-737-300, 400, 500 (EFIS)	(3) C*/C*/D (5) LIMITED FMS-C/B/C	(3) C*/C*/D (5) LIMITED FMS-C/B/C	(3) C/B/B	A/A/A (7) CROSS MODEL-A/A/B	(8) C/B/B (9) PFD/ND-D/C/C
	B-737-600, 700, 800, 900	D/D/D	D/D/D	(8) C/B/B (9) PFD/ND-D/C/C	(8) C/B/B (9) PFD/ND-D/C/C	A/A/A (9) PFD/ND-D/C/C (11) EDFCS-C/C/C

MASTER DIFFERENCE REQUIREMENTS (MDR) TABLE EXAMPLE

Figure 1

(7) *Differences Within a Series.* Differences may exist even within series shown on an MDR table, such as within the A–318/319/320/321 series. MDR elements may show requirements from one series to another identified in the footnotes. Such requirements, however, apply only if pertinent differences exist between those aircraft.

(8) *More Than Two Related Aircraft.* When pilot assignments apply to more than two related aircraft, such as the A–320, A–330, and A–340, each pertinent requirement of the MDR table applies. Applications of multiple requirements for flying two or more related aircraft and certain limits to flying large numbers of related aircraft are described in paragraph 7k.

(9) *Special Requirements.*

(10) *MDR Footnotes.* Footnotes can be used to credit, constrain, or set alternate levels when special situations apply. Use of footnotes permits accommodation of variations in installed equipment, options, pilot knowledge or experience on other aircraft, training methods or devices, or other factors that are not addressed by basic levels between aircraft. For example, a footnote may allow credit or apply constraints to the use of a particular flight guidance control system (FGCS), flight management system (FMS), or electronic flight instrument system (EFIS), which is installed on aircraft. Footnotes are an appropriate means to address requirements that relate to specific systems (e.g., flight director and FMS) rather than a particular aircraft. In such instances, generic knowledge or experience with the particular system may be readily transferable between related aircraft. Footnotes may also be used to set different requirements for initial training or checking rather than for recurrent training or checking. When necessary, footnotes are fully described in the body of the FSB report.

(a) Other Limitations. Other limitations may occasionally be identified within a difference level (e.g., C*/C*/C). The asterisk following the difference level in such instances identifies a special requirement or limitation pertaining to a particular training method or device. Such notes typically relate to acceptable training device characteristics when the simulator evaluation and approval process or standard criteria of this AC are not available to address a particular situation appropriately.

(11) *MDRs for Aircraft With the Same or Common Pilot Type Ratings.* A single FSB report and MDR table may apply to aircraft that are assigned the same pilot type rating (same aircraft TC). For example, a single MDR table may cover the A–318/319/320/321 that have a same pilot type rating. A single FSB report and MDR table may also apply to aircraft that are assigned a common pilot type rating. For example, a single MDR table may cover both the B–767 and B–757 that have a common pilot type rating. When level E training is required for an aircraft with the same aircraft TC and an additional pilot type rating is assigned, such as the B–747 and B–

747–400, a single MDR table for all series of a type-certificated aircraft still applies.

(12) Minimum acceptable difference levels are assigned based on standard tests described in Appendix 3.

c. Difference Levels.

(1) *General Description.* Difference levels are formally designated levels of training methods or devices, checking methods, or means of maintaining currency that satisfy minimum difference requirements or pilot type rating requirements. Difference levels specify FAA requirements proportionate to and corresponding with increasing differences between related aircraft. A range of five difference levels in order of increasing requirements, identified as A through E, are each specified for training, checking, and currency. MDRs are specified in terms of difference levels. Difference levels are used to credit knowledge, skills, and abilities applicable to an aircraft for which a pilot is already qualified and current, during initial, transition or upgrade training for other related aircraft. Operators, who conduct mixed fleet flying where credit is sought, should apply difference levels and address all mixed fleet flying requirements to ensure compliance with FAA requirements necessary to assure safe operations.

(2) *Basis for Levels.* Difference levels apply when a difference with potential to affect fight safety exists between related aircraft. Differences may also affect knowledge, skills, or abilities required of a pilot. If no differences exist or if differences exist but do not affect knowledge, skills, abilities or flight safety, then difference levels are not assigned or applicable to pilot qualification. When difference levels A through E apply, each difference level is based on a scale of differences in design features, systems, or maneuvers. In assessing the effects of differences, both flight characteristics and procedures are considered, since flight characteristics address handling qualities and performance, while procedures include normal and abnormal/nonnormal/emergency items.

(3) *Relationship Between Training, Checking, and Currency Levels.* While particular aircraft are often assigned the same level (e.g., C/C/C) for training, checking, and currency, such assignment is not necessary. Levels may be assigned independently. For example, an aircraft may be assigned level C for training, level D for checking, and level C for currency (e.g., C/D/C).

(4) *Designation of a Pilot Type Rating.* Candidate aircraft having the same TC are assigned the same pilot type rating if training differences are not greater than level D. Candidate aircraft having different TCs that have training differences no greater than level D may be assigned a common pilot type rating. A candidate aircraft is assigned a different pilot type rating when difference training level E is required. When different pilot type ratings are assigned because of one or more candidates requiring level E training, pilot type ratings may be assigned to related aircraft consistent with a logical grouping of the most similarly related aircraft.

d. Training Difference Levels.

(1) *Level A Training.* Level A difference training is that differences training between related aircraft that can adequately be addressed through self-instruction. Level A training represents a knowledge requirement that, once appropriate information is provided, understanding and compliance can be assumed. Level A compliance is achieved by such methods as issuance of operating manual page revisions, dissemination of operating bulletins, or differences handouts to describe minor differences in aircraft. Level A training is limited to the following situations:

(a) A change that introduces a different version of a system/component for which the pilot has already shown the ability to understand and use (e.g., an updated version of an engine).

(b) A change that results in minor or no procedural changes and does not adversely affect safety if the information is not reviewed or forgotten (e.g., a different vibration damping engine mount is installed, expect more vibration in descent; logo lights are installed, use is optional).

(c) Information that highlights a difference, which is evident to the pilot, inherently obvious, and easily accommodated (e.g., different location of a communication radio panel, a different exhaust gas temperature limit that is placarded, or changes to nonnormal ''read and do'' procedures).

(2) *Level B Training.* Level B difference training is applicable to aircraft with system or procedure differences that can adequately be addressed through aided instruction. At level B, aided instruction is appropriate to ensure pilot understanding, emphasize issues, provide a standardized method of presenting material, or aid retention of material following training. Level B aided instruction can utilize slide/tape presentations, computer based tutorial instruction, stand-up lectures or video tapes. Situations not covered under the provisions of level A training may require level B (or higher levels) if certain tests described in later paragraphs fail.

(3) *Level C Training.* Level C differences training can only be accomplished through use of devices that are capable of systems training. Level C differences training is applicable to related aircraft having part task differences that affect skills or abilities and knowledge. Training objectives focus on mastering individual systems, procedures, or tasks, as opposed to performing highly integrated flight operations and maneuvers in ''real time.'' Level C may require self-instruction or aided instruction, but cannot be adequately addressed by a knowledge requirement alone. Training devices are required to supplement instruction, ensure attainment or retention of pilot skills and abilities, and accomplish the more complex tasks, usually related to operation of particular aircraft systems. While level C systems knowledge or skills relate to specific rather than fully integrated tasks, performance of steps to accomplish normal, nonnormal, alternate, recall procedures, or maneuvers related to particular systems (e.g., flight guidance control systems/flight management systems) may be necessary. Typically, the minimum acceptable training media for level C training would be interactive computer-based training, cockpit systems simulators, cockpit procedure trainers or part task trainers (e.g., FMS or traffic collision avoidance system (TCAS)).

(4) *Level D Training.* Level D training can only be accomplished with devices capable of performing flight maneuvers and addressing full task differences of knowledge, skills, and/or abilities. Devices capable of flight maneuvers address full task performance in a dynamic real time environment. The devices enable integration of knowledge, skills, and abilities in a simulated flight environment, involving combinations of operationally oriented tasks and realistic task loading for each relevant phase of flight. Level D training, knowledge, and skills to complete necessary normal, nonnormal, alternate, or recall procedures are fully addressed for each related aircraft. Level D differences training requires mastery of interrelated skills that cannot be adequately addressed by separate acquisition of a series of knowledge areas or skills that are interrelated. The differences are not so significant that a full transition training course is required. If demonstrating interrelationships between the systems is important, use of a series of separate devices for systems training will not suffice. Training for level D differences requires a training device that has accurate, high fidelity integration of systems and controls, and realistic instrument indications. Level D training may also require maneuvers, visual cues, motion cues, dynamics, control loading or specific environmental conditions. Weather phenomenon such as low visibility, CAT III, or windshear may or may not be incorporated. Where simplified or generic characteristics of an aircraft type are used in devices to satisfy difference level D training, significant negative training must not occur as a result of the simplification. Typically, the minimum acceptable training media for level D training would be flight training device level 6.

(5) *Level E Training.* Level E training is applicable to candidate aircraft having such significant full task differences that require a ''high fidelity'' environment to attain or maintain knowledge, skills, or abilities. Training at level E can only be satisfied by the use of a simulator qualified at level C or D consistent with FAA criteria. Level E training, if done in an aircraft, should be modified for safety reasons where maneuvers can result in a high degree of risk (i.e., an engine set at idle thrust to simulate an engine failure). As with other levels, when level E training is assigned, suitable credit or constraints may be applied for knowledge, skills, and/or abilities related to other pertinent related aircraft. Credits or constraints are specified for the subjects, procedures, or maneuvers shown in FSB reports and are applied through the ODR table.

Note: Training differences levels specified by the FSB represent minimum requirements. Operators may use a device associated with a higher difference level to satisfy a training differences requirement. For example, if level C differences are assessed due to installation of a different FMS, operators may train pilots using the FMS installed in a full flight simulator (FFS) as a system trainer if a

dedicated part task FMS training device is not available.

e. Checking Difference Levels.

(1) *Initial and Recurrent Checking.* Difference checking addresses any pertinent pilot testing or certification that includes pilot type rating checks, proficiency checks, Advanced Qualification Program (AQP) evaluations, and any other checks specified by FSB reports. Initial and recurrent checking levels are the same unless otherwise specified by the FSB. In certain instances, it may be possible to satisfactorily accomplish recurrent checking objectives in devices that do not meet initial checking requirements. In such instances, the FSB may recommend certain devices that do not meet initial check requirements for use to administer recurring checks. The POI/Training Center Program Manager, in coordination with the FSB, may require checking in the initial level device when doubt exists regarding pilot competency or program adequacy.

(2) *Level A Checking.* Level A checking indicates that no check related to differences is required at the time of differences training. A pilot is responsible for knowledge of each related aircraft flown. Differences items should be included as an integral part of subsequent recurring proficiency checks.

(3) *Level B Checking.* Level B checking indicates that a ''task'' or ''systems'' check is required following transition and recurring differences training. Level B checking typically applies to particular tasks or systems such as FMS, TCAS, or other individual systems or related groups of systems.

(4) *Level C Checking.* Level C checking requires a partial proficiency check using a device suitable for meeting level C (or higher) differences training requirements following transition and recurrent differences training. The partial check is conducted relative to particular maneuvers or systems designated by the FSB. Example of a level C check: Evaluation of a sequence of maneuvers demonstrating a pilot's ability to use a FGCS or FMS. An acceptable scenario would include each relevant phase of flight that uses the FGCS or FMS.

(5) *Level D Checking.* Level D checking requires a partial proficiency check for one or more related aircraft following both transition and recurrent training. The partial proficiency check covers the particular maneuvers, systems, or devices designated by the FSB. Level D checks are performed using scenarios representing a ''real time'' flight environment and devices permitted for level D differences training. A full proficiency check is typically conducted on the base aircraft, and a partial proficiency check on the related aircraft, covering all pertinent differences.

(6) *Level E Checking.* Unless specified, level E checking requires that a full proficiency check be conducted in a level C or D FFS. As with other levels, when level E checking is assigned, suitable credit or constraints may be applied for knowledge, skills, and/or abilities related to other pertinent related aircraft. Credits or constraints are specified for the subjects, procedures, or maneuvers shown in FSB reports and are applied through the ODR table.

Note: Assignment of level E checking requirements alone does not result in assignment of a separate pilot type rating. Only the assignment of level E training requirements may result in assignment of a separate pilot type rating.

f. Currency Difference Levels. The term ''currency'' as used in this AC addresses recent experience necessary for safe operation of aircraft as designated by the FSB. Currency issues not specified by the FSB are covered by regulation.

(1) *Level A Currency.* Level A currency is considered common to each related aircraft. Thus, assessment or tracking of currency for separate related aircraft is not necessary or applicable. Maintenance of currency in any one related aircraft or a combination of related aircraft will suffice for any other related aircraft.

(2) *Level B Currency.* Level B currency is ''knowledge related'' currency, typically achieved through self-review by individual pilots for a particular aircraft. Self-review is usually accomplished by review of material provided by the operator to pilot. Such currency may be undertaken at an individual pilot's initiative; however, the operator must identify the material and the frequency or other situations in which the material should be reviewed. Self-review may be based on manual information, bulletins, aircraft placards, memos, class handouts, videotapes, or other memory aids that describe the differences, procedures, maneuvers, or limits for the pertinent aircraft that pilots are flying. Examples of acceptable compliance with level B currency are:

(a) The issuance of a bulletin that directs pilots to review specific operating manual information before flying a related aircraft. Level B currency may be regained by review of pertinent information to include bulletins, if that related aircraft has not been flown within a specified period (e.g., fly that related aircraft or have completed a review of the differences in limitations and procedures within a specified number of days).

(b) Pilot certification on a dispatch release that they have reviewed pertinent information for a particular related aircraft to be flown on that trip. Level B currency cannot, however, be achieved solely by review of class notes taken by and at the initiative of an individual pilot unless the adequacy of those notes is verified by the operator.

(3) *Level C Currency.* Level C currency is applicable to one or more designated systems or procedures, and relates to both skill and knowledge requirements. An example would be establishment of FMS currency, flight guidance control system currency, or other particular currency that is necessary for safe operation of a related aircraft. Establishment of level C for a related aircraft with an FMS would typically require a pilot to fly that related aircraft within the specified period of time or re-establish currency. Currency constraints for level C are established by the FSB. When level C currency applies, pertinent level B currency must also be addressed. Examples of methods acceptable for addressing level C currency are:

(a) Pilot scheduling practices resulting in a pilot being scheduled to fly a related aircraft with the pertinent system/procedure within the specified period of time;

(b) Tracking of an individual pilot's flying of related aircraft to ensure that the particular system/procedure has been flown within the specified period of time;

(c) Use of a higher level method (level D or E currency); or

(d) Other methods as designated or found acceptable by the FSB.

(4) *Re-establishing Level C Currency.* When currency is lost, currency may be re-established by completing required items using a device equal to or higher than that specified for level C differences training and checking. Other means to re-establish currency include flights with an appropriately qualified check airman/instructor, completion of proficiency training, or a proficiency check. In some instances, a formal refamiliarization period in the actual aircraft with the applicable system operating while on the ground may be acceptable if permitted by the FSB. Such refamiliarization periods are completed using an operator-established procedure under the supervision of a pilot designated by the operator. In the case of a noncurrent SIC, a designated pilot-in-command (PIC) may be authorized to accompany a pilot to re-establish currency.

(5) *Level D Currency.* Level D currency is related to designated maneuvers, and addresses knowledge and skills required for performing aircraft control tasks in real time, with integrated use of associated systems and procedures. Level D currency may also address certain differences in flight characteristics including performance of any required maneuvers and related normal/abnormal/emergency procedures for a particular related aircraft. A typical application of level D currency is to specify selected maneuvers, such as takeoff, departure, arrival, approach, or landing, which are to be performed using a particular FGCS and instrument display system. Either a pilot must fly a related aircraft equipped with the FGCS and particular display system sufficiently often to retain familiarity and competence within the specified currency period, or currency must be re-established. Currency constraints for level D are established by the FSB. When level D currency applies, pertinent level B and level C currency must also be addressed. Examples of methods acceptable for addressing level D currency are:

(a) Tracking of flights by a particular pilot in a particular related aircraft to assure experience within the specified currency period.

(b) Tracking the completion of specific maneuvers based on logbook entries, Aircraft Communication Addressing and Reporting System (ACARS) data, or other reliable records to assure experience within the specified currency period.

(c) Scheduling of aircraft or pilots to permit currency requirements to be met with verification that each pilot has actually accomplished the assigned or an equivalent schedule.

(d) Completion of pilot certification, proficiency check, proficiency training, AQP evaluations, or other pertinent events in

which designated maneuvers are performed in a device or simulator acceptable for level D currency.

(e) Use of a higher level method (level E currency).

(f) Other methods as designated or found acceptable by the FSB.

(6) *Re-establishing Level D Currency.* When currency is lost, currency may be re-established by completing pertinent maneuvers using a device equal to or higher than that specified for level D differences training and checking. Other means to re-establish currency include flight with an appropriately qualified check airman during training or in line operations, completion of proficiency training, a proficiency check, or AQP proficiency evaluation.

(7) *Level E Currency.* Level E currency may specify system, procedure, or maneuver currency item(s) necessary for safe operations, as identified by the FSB, to be accomplished in a Level C/D simulator for that related aircraft. FSB provisions related to takeoff and landing are applied in a way that addresses needed system or maneuver experience. For example, if FGCS, FMS, EFIS, navigation, or other system or maneuver experience is the basis for a currency requirement, approval of an operator's program at level E includes the use of those systems in conjunction with satisfying takeoff and landing requirements. In this instance, making three simulator takeoffs and landings in VFR closed traffic without using the FGCS, EFIS, or FMS may not be sufficient to meet level E currency requirements.

Note: Assignment of level E currency requirements does not result in assignment of a separate pilot type rating. Only the assignment of level E training requirements may result in assignment of a separate pilot type rating.

(8) *Re-establishing Level E Currency.* When currency is lost, currency may be re-established by completing pertinent maneuvers using a device specified for level E differences training and checking. Other means to re-establish currency include flight with an appropriately qualified check airman during training or in line operations, completion of proficiency training, a proficiency check, or AQP evaluation.

(9) *Competency Regarding Abnormal/Nonnormal/Emergency Procedures.* Competency for nonnormal maneuvers or procedures is generally addressed by checking requirements; however, in particular abnormal/nonnormal/emergency maneuvers or procedures may not be mandatory for checking or training. In this situation, it may be necessary to periodically practice or demonstrate those maneuvers or procedures even though it is not necessary to complete them during each check. In such instances, the FSB may specify a currency requirement for training or checking applicable to abnormal/nonnormal/emergency maneuvers or procedures that are to be performed. This is to assure that extended periods of time do not elapse in a series of repeated training and checking events in which significant maneuvers or procedures may never be accomplished. When an abnormal/nonnormal/emergency maneuver or procedure is not mandatory and is not accomplished during each proficiency training or proficiency check, but is still important to occasionally practice or demonstrate, the FSB may establish a currency requirement. When designated by the FSB, these currency requirements identify each abnormal/nonnormal/emergency maneuver or procedure, the currency level applicable, and an applicable time period or any other necessary/appropriate constraints.

(10) *Difference Level Summary.* Difference levels are summarized in Figure 2 below for training, checking, and currency. Complete descriptions of difference levels for training, checking and currency are given above.

FIGURE 2.—DIFFERENCE LEVEL TABLE

Difference level	Training	Checking	Currency
A	Self instruction	Not applicable (or integrated with next proficiency check).	Not applicable.
B	Aided instruction	Task or system check	Self review.
C	Systems devices	Partial check using device	Designated system.
D	Maneuver devices *	Partial proficiency check using device *.	Designed maneuver(s).
E	Simulator c/d or aircraft #	Proficiency check using simulator c/d or aircraft *.	Designed maneuver(s) except take-off and landings.

= New pilot type rating is normally assigned.
* = FFS or aircraft may be used to accomplish specific maneuvers.

g. Operating Experience (OE) for Aircraft.

(1) *Application of OE.* Requirements for OE are consistent with provisions for OE specified under 14 CFR.

(2) *Credits or Constraints.* OE must meet the applicable requirements of the CFR part under which operations are conducted, except that credit for applicable OE in other related aircraft may be permitted. When approved by the FAA, OE associated with differences may be accomplished as part of or in conjunction with line oriented simulation (LOS).

h. Supervised Line Flying (SLF). Experience associated with the introduction of equipment or procedures requiring post qualification skill enhancement during which a pilot occupies a specific pilot position and performs particular assigned duties for that pilot position under the supervision of a pilot instructor or check airman qualified for the operator. One or more of the reasons described below may apply:

(1) Introduction of new systems (e.g., Local Area Augmentation System (LAAS), Automatic Dependent Surveillance Broadcast (ADS–B), runway area advisory system (RAAS), etc).

(2) Introduction of new operations (e.g., oceanic operations, Extended-Range Operations with Two-Engine Airplanes (ETOPS)).

(3) Experience for a particular pilot position (e.g., PIC, SIC).

(4) Special characteristics (e.g., effects of unique airports, mountainous areas, unusual weather, special air traffic control procedures, or nonstandard runway surfaces) on this aircraft.

i. Recency of Experience. Credit towards the recency of experience requirements of 14 CFR may be permitted for takeoffs and landings performed in related aircraft as provided by CTLC. CTLC must be validated through the FSB process and must be carried out in accordance with (IAW) the operator's CTLC approved program.

j. Operator Difference Requirements (ODR).

(1) *ODR Purpose.* If differences exist within an operator's fleet, which affect pilot knowledge, skills, or abilities pertinent to systems or procedures, ODR tables provide a uniform means for operators to comprehensively manage difference programs and provide a basis for FAA approval of mixed fleet flying.

(2) *ODR Content.* ODRs identify a base aircraft, describe differences between aircraft, and show an operator's methods of compliance with FAA requirements. The FAA approves an operator's initial ODR and each subsequent revision for the following:

(a) Base Aircraft. ODRs identify an aircraft or group of aircraft (aircraft of the same series with minor configuration differences) within an operator's fleet as a base aircraft. The base aircraft serves as a reference for comparison with candidate aircraft. Selection criteria and characteristics of base aircraft are described in paragraphs 6c and 7c.

(b) Candidate/Related Aircraft. ODRs identify particular aircraft flown by an operator within each fleet. ODRs consider only those aircraft and combinations of aircraft actually flown by that operator. ODRs describe differences within an operator's fleet between the base aircraft and other related aircraft.

(c) Significance of Differences. Differences are described in summary form and are

categorized by differences in design features, systems, and maneuvers. Differences are evaluated relative to their effect on either flight characteristics, pilot skills, and/or procedures. Procedures consider normal, nonnormal, alternate, and recall items. Limitations are considered in conjunction with normal procedures.

(d) Compliance Methods. ODRs show how each operator's program addresses differences, through description of training, checking, or currency methods for each fleet. ODRs describe the specific or unique constraints or credits applicable, and any precautions necessary to address differences between aircraft. ODRs must comply with and be just as or more restrictive than FAA MDRs and other FSB provisions. Constraints or credits may be applied to all aircraft in a fleet or only to certain aircraft. Constraints or credits may address training devices, simulators, checking and currency methods, knowledge, skills, procedure maneuvers, or any other factors that apply to or are necessary for safe operations. Training, checking, and currency compliance methods are proposed and revised by each operator consistent with ODR examples from a variety of sources that are acceptable to the FAA. ODR examples are found in FSB reports.

(3) *Standard ODR Format.* ODRs are depicted in tables in summarized form. If necessary, any explanation of details about differences, constraints and credits, precautions or compliance methods are included in attachments or appendices to ODR tables or are cross referenced to other operator documents. Figure 3 shows the general format for ODR tables, including examples of design, systems, and maneuver differences. The far-left column lists design, system, or maneuver differences that are pertinent. The ''Remarks'' column summarizes specific areas or items of difference. The ''Flight Characteristics'' and ''Procedural Change'' columns identify what (if any) difference effects are noted. The ''Compliance Methods'' section of the table notes the particular operator's approved means of compliance with FAA MDR provisions. The following abbreviations apply:

ACFT—Aircraft.
AFDS—Auto Flight Display System.
AVT—Audio Visual Tapes.
CBT—Computer Based Training.
EFIS—Electronic Flight Instrument System.
EICAS—Engine Indicating and Crew Alerting System.
FBS—Fixed Base Simulator.
FFS—Full Flight Simulator.
FLT CHAR—Flight Characteristics.
FMC—Flight Management Computer.
FMS—Flight Management System.
PROC CHNG—Procedural Changes.
SU—Stand Up Instruction.

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Design Operator Difference Requirements Table Example

DESIGN OPERATOR DIFFERENCE REQUIREMENTS TABLE										
DIFFERENCE AIRCRAFT: 737-300 BASE AIRCRAFT: 737-200 ADVANCED APPROVED BY (POI): _____				COMPLIANCE METHOD						
				TRAINING					CHKG/CURR	
DESIGN FEATURE	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	LVL E	FLT CHK	CORR
AIRPLANE CONFIGURA-TION	- BODY EXTENSION 104" - WING TIP EXTENSION 14" - DORSAL FIN - w/STC ST01219SE, BLENDED WINGLET	MINOR	NO		AVT/ SU/ CBT					B
PANEL LAYOUT	- ADDITION OF FMC/AFDS/AT/IRS ETC.	NO	NO		AVT/ SU/ CBT					
WEIGHTS	- GROWTH RELATED CHANGES	NO	NO		AVT/ SU/ CBT					

Figure 3-1

Systems Operator Difference Requirements Table Example

SYSTEMS OPERATOR DIFFERENCE REQUIREMENTS TABLE

DIFFERENCE AIRCRAFT: 737-300
BASE AIRCRAFT: 737-200 ADVANCED

APPROVED BY (POI): _____

				COMPLIANCE METHOD						
				TRAINING					CHKG/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	LVL E	FLT CHK	CORR
21 AIR COND. & PRESSURIZA-TION	- RECIRC FAN REPLACES GASPER FAN - 3 POSITION PACK SWITCH - FWD OUTFLOW VALVE LIGHT DELETED - EQUIPMENT COOLING FAN LIGHT - ADDITIONAL FAN INSTALLED (EFIS ONLY) - DISTRIBUTION: MINOR CHANGES	NO	YES		AVT/ SU					
22 AUTO-FLIGHT	- SP-300 AFDS REPLACES SP-77/SP-177 - AUTOTHROTTLE ADDED* - AUTOLAND CAPABILITY ADDED* (*ONLY WHEN COMPARED TO SP-77 AIRPLANES) - LNAV/VNAV - TO/GA MODE	NO	YES		AVT	CBT/ FMS/ AT			C*+OE	D 90 DAYS + 3 FLT SEG.
24 ELECTRICAL	- MINOR CHANGES IN POWER DISTRIBUTION	NO	NO		AVT/ SU					
25 EMERGENCY EQUIPMENT	- CANNISTER OPTION ONLY* - NEW CREW MASKS* (*OPTION ON SOME -200 AIRPLANES)	NO	YES		AVT/ SU					
26 FIRE PROTECTION	- DUAL-LOOP DETECTION SYSTEM - MINOR EXTING. EQUIP. CONFIG CHANGE - TWO SQUIBS PER BOTTLE	NO	YES		AVT/ SU					

Figure 3-2

Systems Operator Difference Requirements Table Example

SYSTEMS OPERATOR DIFFERENCE REQUIREMENTS TABLE

DIFFERENCE AIRCRAFT: 737-300
BASE AIRCRAFT: 737-200 ADVANCED

APPROVED BY (POI): _____

				COMPLIANCE METHOD						
				TRAINING					CHKG/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	LVL E	FLT CHK	CORR
27 FLIGHT CONTROLS	- ADD'L SPOILERS ADDED - ELECTRIC AIL TRIM - DUAL CHANNEL MACH TRIM; TEST BUTTON DELETED - SPEED TRIM ADDED - STAB TRIM BRAKE DELETED - TWO SPEED STAB TRIM - DIFFERENT STAB TRIM RANGE - ELECTRIC STAB TRIM OVERRIDE - ELECTRIC RUDDER TRIM - AUTOSLAT SYS. ADDED - TE FLAP PLACARD SPEEDS - CERTIFIED T/O FLAP SETTINGS - RUDDER SYSTEM ENHANCEMENT - (OPTION: BLENDED WINGLET W/ SPEED BRAKE LOAD ALLEVIATION)	MINOR	YES (YES MIN-OR)		AVT/ SU (CBT/ AVT/ SU)					
28 FUEL	- CONTINUOUS FUEL HEAT SWITCHES DELETED - FILTER BYPASS LIGHT REPLACES ICING LIGHT - FUEL CAPACITY INCREASED - GND XFER OF FUEL - AUX TANK (OPTIONAL)	NO	YES		AVT/ SU					

Figure 3-2 (continued)

Systems Operator Difference Requirements Table Example

SYSTEMS OPERATOR DIFFERENCE REQUIREMENTS TABLE

DIFFERENCE AIRCRAFT: 737-300
BASE AIRCRAFT: 737-200 ADVANCED

APPROVED BY (POI): _____

				COMPLIANCE METHOD						
				TRAINING					CHKG/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	LVL E	FLT CHK	CORR
29 HYDRAULIC	- LANDING GEAR XFER UNIT - SYS A & B SOURCES AND COMPONENTS CHANGED; A & B INDEPENDENT - GROUND INTERCONNECT DELETED - AUTOSLAT PTU - THRUST REVERSER - ONE ON EACH SYSTEM - B QUANTITY GUAGE ADDED - STBY RUDDER ON LIGHT	NO	YES		AVT/ SU					
30 ICE & RAIN PROTECTION	- ENG INLET ANTI-ICE DELETED - WING ANTI-ICE OPERATION ON GROUND PERMITTED* (*OPTION ON SOME -200 AIRPLANES)	NO	YES		AVT/ SU					
31 FLIGHT INSTRUMENTS	- EFIS (AS INSTALLED) - ADI/HIS (AS INSTALLED) - NAV SWITCH (AS INSTALLED)	NO	YES		AVT/ SU					
32 LANDING GEAR	- NORM/ALT REPLACES A & B SYS BRAKES - PAIRED WHEEL ANTI-SKID PROTECTION ON ALT BRAKES - TIRE SCREEN DELETED* - NO TOUCHDOWN OR LOCKED WHEEL PROTECTION ON ALT BRAKES - SINGLE ANTI-SKID SWITCH (*OPTION ON SOME -200 AIRPLANES)	NO	NO		AVT/ SU					

Figure 3-2 (continued)

Systems Operator Difference Requirements Table Example

SYSTEMS OPERATOR DIFFERENCE REQUIREMENTS TABLE

DIFFERENCE AIRCRAFT: 737-300
BASE AIRCRAFT: 737-200 ADVANCED

APPROVED BY (POI): _____

				COMPLIANCE METHOD						
				TRAINING					CHKG/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	LVL E	FLT CHK	CORR
33 WARNING	- ADDITIONAL SYS ANNUNCIATOR LIGHTS ADDED - GPWS MODE 6 WINDSHEAR OPTION* (* OPTION ON SOME -200 AIRPLANES)	NO	YES		AVT/ SU					
34 NAVIGATION	- FMCS ADDED - IRS ADDED - ANCDU	NO	YES		AVT	CBT/ FMS/ AT			C* + OE	D 90 DAYS + 3 FLT SEG.
36 PNEUMATICS	- DISTRIBUTION MINOR CHANGE	NO	NO		AVT/ SU					
73, 74, 77, 80 POWER PLANT	- CFM-56 ENGINES - NEW INDICATORS - CASCADING VANES TYPE REVERSER WITH AUTO RESTOW - PMC ADDED - IGN SELECT SWITCH	NO	YES		AVT/ SU					B
WINDSHEAR EQUIPMENT	- AUTOMATIC RECOVERY AVAILABLE IF IN DUAL CHANNEL - FLIGHT DIRECTOR GUIDANCE AVAILABLE (OPTIONAL)	NO	YES		AVT/ SU	FMS/ AT			C*	
PERFORMANCE	- CHANGED	MINOR	NO		AVT/ SU					
LIMITATIONS	- GROWTH RELATED CHANGES	NO	NO		AVT/ SU					

Figure 3-2 (continued)

Maneuver Operator Difference Requirements Table Example

MANEUVER OPERATOR DIFFERENCE REQUIREMENTS TABLE

DIFFERENCE AIRCRAFT: 737-300
BASE AIRCRAFT: 737-200 ADVANCED

APPROVED BY (POI): _____

MANEUVER	REMARKS	FLT CHAR	PROC CHNG	COMPLIANCE METHOD							
				TRAINING						CHKG/CURR	
				LVL A	LVL B	LVL C	LVL D	LVL E	FLT CHK	CORR	
NORMAL TAKEOFF, CLIMB, CRUISE, DESCENT, INSTRUMENT APPROACHES, LANDING	- OPTIONAL USE OF AFDS, AND A/T (ALSO AN OPTION FOR -200 AFCS AIRPLANES) - OPTIONAL USE OF FMCS	NO	SEE APP		AVT/ SU	FMS/ AT			C* + OE	D 90 DAYS + 3 FLT SEG.	
NON-NORMAL MANEUVERS	- OPTIONAL USE OF AFDS, AND A/T (ALSO AN OP;TION FOR -200 AFCS AIRPLANES) - OPTIONAL USE OF FMCS	NO	SEE APP		AVT/ SU	FME/ AT			C*		

Figure 3-3

(4) *ODR Approval, Distribution, and Availability.* ODRs are approved for each fleet by an operator's FAA POI in accordance with FSB report provisions. ODRs must be prepared, reviewed, approved and then used to govern training before start of operations. The operator retains approved ODRs with a duplicate copy as part of FAA certificate-holding district office (CHDO) records.

(5) *ODR Revision.* ODR tables are revised by operators and re-approved by the FAA when fleet characteristics change or when compliance methods change. Fleet characteristic changes include redesignation of base aircraft, modification of aircraft, addition of aircraft, change of aircraft, or phaseout of aircraft. Changes in compliance methods refer to introduction of new or different training methods, contracting for use of different devices or simulators, revision of checking or currency methods, or other such changes. Revisions to ODRs are also prepared, reviewed, and approved before operating.

Note: Paragraph 6 describes the development, approval, and application of ODR tables to individual operators' programs. Paragraph 7 describes FAA review and approval of programs by POIs.

5. Formulation of FSB Reports, MDRS, and Designation of Pilot Type Ratings

a. Requirements Formulation Process Overview. The process for FAA formulation and revision of training, checking, currency, and pilot type rating requirements is shown in Figure 4.

(1) The process determines which information is required for an aircraft; it includes a proposal for requirements, tests, and evaluations of the proposed requirements; it then finalizes, applies, and implements the FSB requirements. Applicants propose MDRs, examples of ODRs, and any other FSB provisions that are necessary. Proposals for requirements are based on design objectives, analysis, evaluation of OE, other programs that have been proved acceptable to the FAA, or other methods. Setting of requirements is based on an objective set of tests and standards, analysis of results, and FAA judgments considering OE. The applicant and the FAA prepare and conduct standardized tests. The applicant provides test support, and the FSB conducts the evaluation. The FSB, in conjunction with the applicant, evaluates the results, and the FAA formulates proposed minimum requirements. The FSB sets final requirements by specifying MDRs and other FSB provisions. An FSB report that describes findings is disseminated to FAA field offices and posted on the operations specifications (OpSpecs) Web site for application to specific operators' programs. The formulation and application process of FSB requirements starts at the time a new aircraft is proposed to the FAA and continues throughout the fleet life of that aircraft. For aircraft already in service the process may be initiated when significant modifications are proposed, a new piece of equipment (e.g., a HUD) requiring operational evaluation is introduced and requested by operators, or when mixed fleet flying takes place. The FAA addresses periodic revisions of requirements when necessary, and revisions are initiated by the FAA and applicants as needed.

b. Proposals for MDRs, Example ODRs, and Special Requirements.

(1) *When Proposals Are Necessary.* The FAA usually determines when proposals are necessary and advises the applicant what information is needed, in conjunction with aircraft type certification or supplemental certification programs. Necessary information may include MDRs for related aircraft or other elements of the FSB reports. The applicant considers existing MDRs and existing or proposed ODRs.

(2) *Proposal Formulation.* The formulation of a proposal typically starts when a manufacturer proposes a new design or design modification. The applicant will then do the following:

(a) Formulate necessary information for training, checking, and currency for the aircraft in proposals for MDRs and example ODRs.

(b) Prepare example ODR tables for candidate aircraft to support development of a proposed MDR. These examples represent proposals for programs for those specific aircraft and configurations that the FAA could approve.

(c) Identify related aircraft for the proposed MDR table.

(d) Formulate any necessary tests to assess difference levels and associated training, checking, and currency requirements for incorporation in the MDR table.

(e) Identify interpretations of possible test results. The FAA and the applicant will then reach an agreement on specific tests, devices, and schedules to be used for the test program.

(f) The applicant submits proposals for the following items to the FAA, as necessary:

- MDRs
- Example ODRs
- Tests and criteria to be used
- Other supporting information associated with training, checking, or currency programs

c. Difference Level Tests. A sequence of five standard tests, described in Appendix 3, is used to set MDRs, minimum acceptable training programs, other FSB provisions, and define pilot type rating requirements. One or more of these tests are applied depending on the difference level sought, and the success of any previous tests used in identifying MDRs. Only those tests needed are used to establish minimum requirements. The outcome of these tests, and any resulting difference levels that apply, establish minimum requirements for training, checking, currency, and pilot type ratings. The FAA will establish an additional pilot type rating if it is determined during this testing that the assignment of a level E differences training is required.

Note: One additional test, the T6 test, can be used to establish CTLC between related aircraft, when not previously demonstrated in a T2 test.

(1) *Steps in the Testing Process.* The typical steps of the testing process are as follows:

(a) The applicant develops representative training programs, difference programs, and necessary supporting information, as needed.

(b) The applicant identifies proposed MDRs and example ODRs.

(c) The applicant proposes and the FAA determines which tests and criteria apply.

(d) The applicant proposes and the FAA determines which aircraft, simulation devices, or analyses are needed to support testing.

(e) The applicant makes a proposal to the FAA, and agreement is reached on test procedures, schedules, and specific interpretation of possible results.

(f) Tests are conducted and results evaluated.

(g) The FSB draft minimum requirements are formulated.

Note: If the candidate aircraft is anticipated to have no greater than level A or B differences with the base aircraft and a same or common pilot type rating is the proposed assignment, then the FSB may elect to directly apply a T1 test for equivalency.

(2) *Test Purpose and Application.* A summary of the purpose and application of each of the six difference tests is shown in Figure 5.

(3) *Test Relationships and Applications.* The test process relationships, the sequence of conducting tests when more than one test is needed, and application of test outcomes are shown in Figure 6. The start of the process is shown at the top of Figure 6. Resulting difference levels are at the bottom. New aircraft, for which a new aircraft TC is sought, follow the testing path at the right of the diagram for a T5 test. At the end of the process the aircraft is assigned a new pilot type rating. For candidate aircraft seeking a same or common pilot type rating the test process follows a path at the left of Figure 6. A series of decisions or tests leads to assignment of one or more levels A through D and in some instances may lead to level E. If level E is assigned as a result of this path, then a separate pilot type rating is assigned. This process is followed whenever a new aircraft is proposed, when significant changes are proposed, or when revisions to existing requirements are needed as a result of requests for change or OE.

(4) *Test Failures and Retesting.* Generally, failures do not have paths back to lower levels. T3 test failure at level C can lead to subsequent passage at C (after modification of the system, operational procedures, or training and retesting) or D. Similarly, failure at level D can subsequently lead to either D (after modification of the system, operational procedures, or training and retesting) or E, but not C. Failure at level E can only lead to retesting with increased programs, improved programs, or improved devices since there is no higher level. T5 failure paths do not lead back to level C or level D. However, subsequent new programs do not preclude making a proposal at a lower differences level if technology changes, aircraft redesign takes place, training methods significantly change, or device characteristics and effectiveness change.

(5) *Same and Common Pilot Type Rating Tests.* Aircraft seeking same or common pilot type rating will follow the path in Figure 6 from the top left of Figure 6 through T1 or T2 and T3 tests resulting in the assignment of level A, B, C, or D differences.

(6) *''Currency'' Tests.* Currency tests T4 are not shown in Figure 6 because they are necessary only when the applicant seeks relief from system, procedural, and maneuver currency requirements set by the FSB.

(7) *Detailed Test Specifications.* A detailed specification for the evaluation process and tests to establish difference levels are described in Appendix 3.

d. FSB Assessments and Proposal Formulation. The FSB assesses the applicant's proposals, test results, analysis, and any other relevant factors to formulate a draft FSB report, which includes MDRs and other pertinent training, checking, currency requirements. The FSB either validates the applicant's proposed MDRs, training programs, and other information, or generates alternate requirements, which may include more stringent requirements, additional training, additional testing, etc.

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MASTER REQUIREMENTS FORMULATION

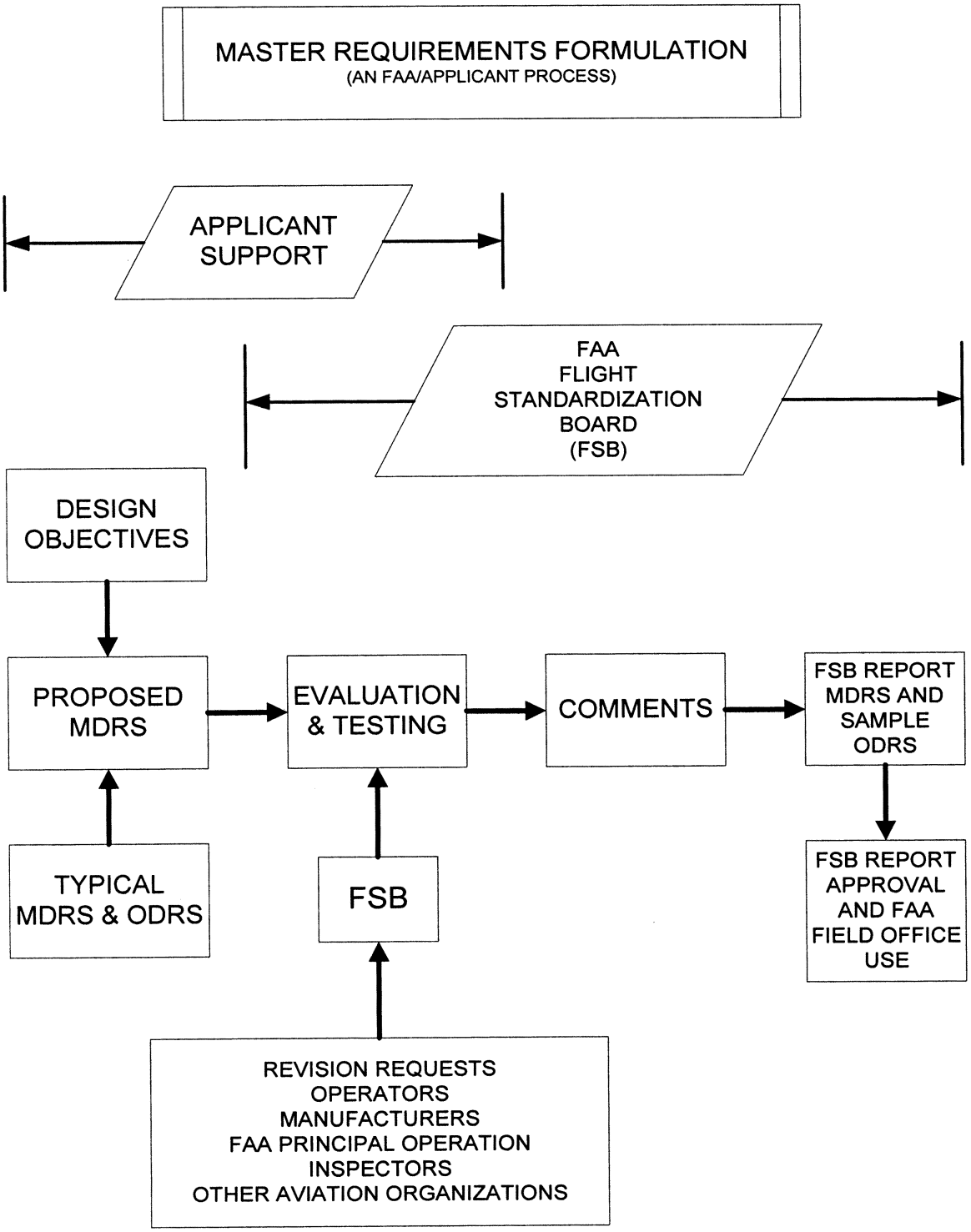

Figure 4

FIGURE 5.—TEST DEFINITIONS

	Test purpose	Application
T1	Establishes functional equivalence	Sets levels A/B.
T2	Handling qualities comparison	Pass permits T3, and A/B/C/D; failure sets level E and requires T5.
T3	Evaluate differences and sets training/checking requirements.	Pass sets levels A/B/C/D; failure sets level E and requires T5.
T4	Revises currency requirements	Used to adjust FSB requirements if needed.
T5	Sets training/checking for new or "E" ACFT	Sets level E.
T6	Evaluation for CTLC	Sets recency of experience requirements.

Note: Expanded descriptions are contained in Appendix 3.

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"T" Tests 1 thru 5

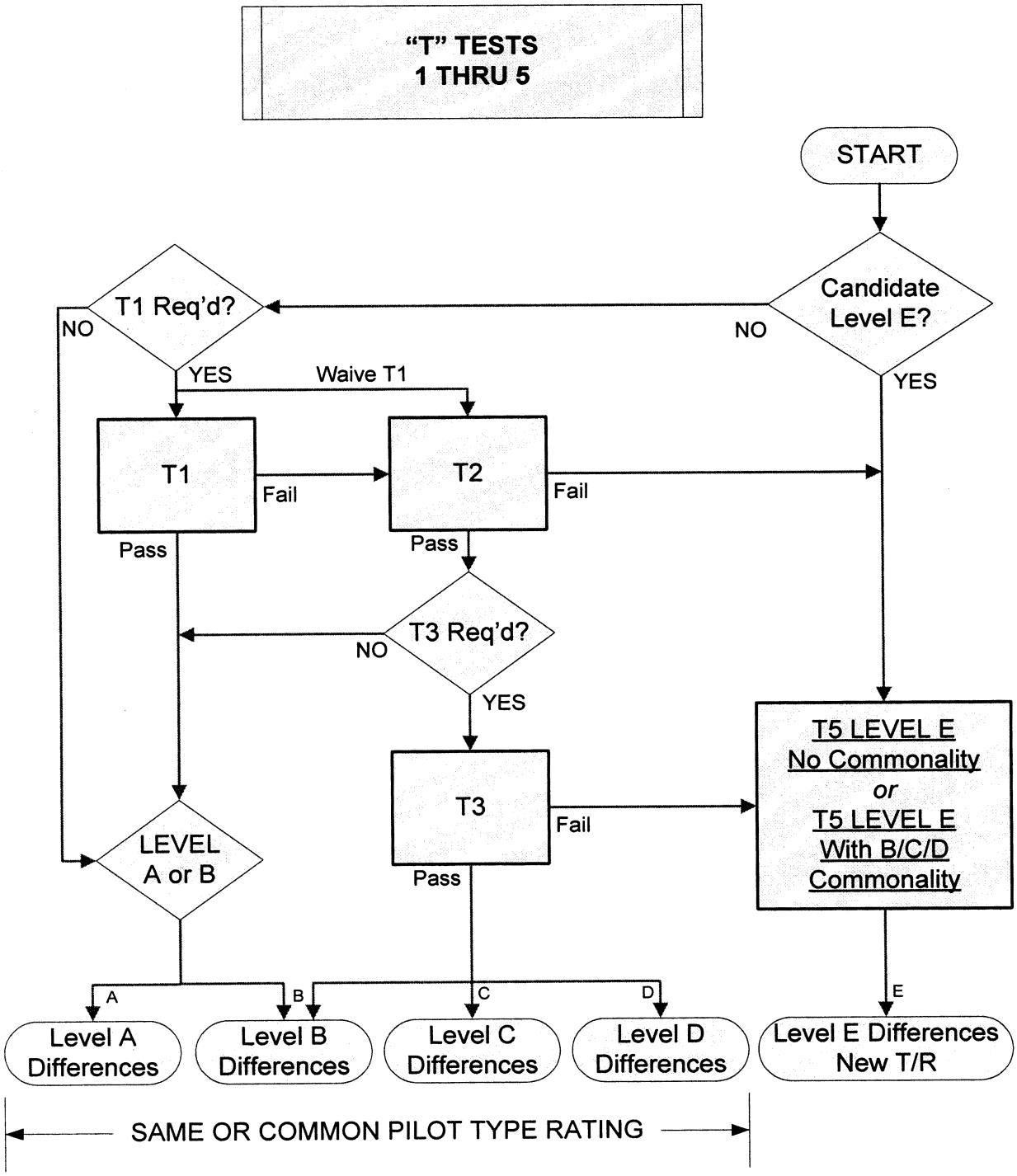

Figure 6

e. Comments Solicited. The FSB proposal is circulated with interested parties representing the manufacturer, operators, and other pertinent FAA organizations such as engineering, flight test, pilots' associations, and other aviation representatives for comment, relevant information, and recommendations.

f. FSB Final Determinations and Findings.

(1) *FSB Determinations.* Any comments submitted to the FAA are reconciled, and final FSB determinations are made. Specification of MDRs, example ODRs, acceptable training programs, and other FSB provisions are completed. Any necessary pilot testing or currency provisions are identified. Assignment of any necessary pilot type rating(s) is made.

(2) *Basis for FSB Judgments.* FSB judgments are based on review of the applicant's supporting documentation, proposed ODR tables, test results, and any other pertinent information, such as FAA policies, OE, and results of other similar FSB evaluations. Specifically, FSB report provisions are based on the following:

(a) Appropriate Data, Evaluation, or Tests. Testing may include aircraft demonstration, simulation tests, device testing, or analysis.

(b) Direct Experience. The industry may have substantial experience with successful operational programs, which can be useful in the assignment of minimum difference level requirements. This experience may include particular training devices, training/checking/currency requirements, and mixed fleet flying.

(c) Indirect Experience. Applicable experience with foreign operators, military programs, or other programs that can establish the suitability of training, checking, or currency standards may be permitted as a means for FSBs to set MDR or ODR levels.

(d) Applicant and Industry. FSB requirements are set following solicitation and review of comments.

(3) *Device or Simulator Characteristics.* Minimum characteristics for devices or simulators for training, checking, or currency are noted using standard training device or simulator definitions. When standard criteria for methods, devices, or simulators are not appropriate for an aircraft, the FSB identifies suitable criteria to be applied and coordinates with the FAA National Simulator Evaluation Team (NSET). Standard devices and simulators applicable to each difference level are shown in Figure 7.

FIGURE 7.—STANDARD METHOD, DEVICES, AND SIMULATORS

Difference level	Difference level definition	Methods	Devices or simulators [1]
A	Self instruction	Bulletins, Manual revisions, Handout material.	
B	Aided instruction	Slides/video tapes, Standup instruction, Computer-based training (CBT).	
C	System devices		Training devices level 2/3/4/5 full task computer based instruction (CBI).[2]
D	Maneuver devices		Training devices level 6/7.[3]
E	Simulator C/D or aircraft		Simulator C/D or aircraft.

(1) Training level and simulator definitions are as specified by applicable ACs.
(2) Training device levels 3/4/5 typically include cockpit procedure trainers, cockpit system simulators, and similar devices.
(3) Training device 6/7 or simulator A/B typically includes fixed-base simulators or visual simulators.

g. FSB Report Preparation Distribution and FAA Application.

(1) *Report Preparation and Approval.* After MDRs are finalized, the FSB report is prepared and approved. Sufficient background or explanatory material is provided in the report to permit FAA personnel to properly administer FSB provisions.

(2) *FSB Report Distribution.* The FSB report is posted on the OpSpecs Web site for implementation in approval of particular operators' programs. The FAA technical requirements described in FSB reports are primarily intended for the operators use to develop programs that will be approved by the FAA.

(3) *FSB Report Implementation.* FSB requirements, recommendations, and guidance are provided to FAA field offices through FSB reports for each aircraft. These reports are directives to FAA offices to identify acceptable methods of applying pertinent 14 CFR parts to each specific operator. FSB provisions set acceptable standards by which FAA inspectors approve, review, correct, or limit individual operator's programs. The FSB report is the basis for approval of training, checking, and currency programs approved by each FAA office. The report is also the basis for pilot certification by FAA or operators and the surveillance of operators' programs. POIs may approve individual operator's programs that meet or exceed master requirements, but they cannot approve programs that are less than master requirements. Aviation safety inspectors (ASI), aircrew program managers (APM), aircrew program designees (APD), and designated pilot examiners (DPE) use the report as the basis for administration of oral examinations, simulator checks, flight checks, proficiency checks, and OE. Preparation and application of ODRs by operators is described in paragraph 6. Review and approval of ODRs by FAA POIs is covered in paragraph 7.

h. FSB Report Revision.

(1) *General FSB Revision Process.* A general revision process is established to update determinations and findings contained in FSB reports. Revisions may be needed annually for active fleets with numerous change requests. Revisions may be needed infrequently for aircraft not undergoing significant change.

(2) *Revisions for New Aircraft.* When an applicant proposes to develop or add a series of a type-certificated aircraft, MDRs and other FSB provisions must be revised to address that series. If an applicant initiates this action, the procedures noted in paragraph 5 regarding initial determination of minimum training, checking, currency, and pilot type rating requirements are followed. If an operator proposes to add an aircraft that is not covered within an existing FSB report (e.g., a foreign manufactured aircraft) POIs should consult with the pertinent Aircraft Evaluation Group (AEG). An FSB will determine the best method of addressing the development of the necessary FSB report. This is particularly important for older aircraft fleets in which differences may be significant, but manufacturer support is no longer available and aircraft imported into the United States that have been used only by foreign operators.

(3) *Revision for Aircraft Modified by Operators.* When an aircraft is to be modified by an operator, the POI must determine if the change affects MDRs, example ODRs, or other FSB report provisions. The criteria for this assessment includes whether or not the difference affects pilot knowledge, skills, or abilities pertinent to flight safety. If a change meets the criteria, the operator should supply the POI with a difference description and analysis of the effects of the difference. The POI makes a preliminary estimate of the difference levels then advises the applicable AEG/FSB. The AEG/FSB may concur with the POI's assessment or require other action. If FSB action is required, the AEG will initiate that action through the FSB chairman. The FSB may require that additional information or analysis be provided or that the entire test process or parts thereof be applied. The AEG may authorize the POI to approve assignment of the difference level. Changes to the MDRs will be made through the normal FSB revision process.

6. Operator's Application of FSB Provisions, Preparation, Use, and Revision of ODRS

a. General.

(1) *Process Overview.* FSB reports contain MDRs and other provisions that are applied by FAA offices in approving operators' programs. MDRs are applied through a particular method that identifies specific ODRs and compliance methods. Application of MDRs and other FSB provisions are one means to ensure pilot qualification for safe operations. This is necessary so that regardless of which aircraft is flown, uniform training, checking, and currency standards are met within the constraints of 14 CFR. Paragraph 6 describes operator application of MDRs and other FSB provisions for training, checking, and currency. This is done through operator preparation and FAA approval of ODRs for each operator. When aircraft are used in mixed fleet flying, this AC's provisions and FSB provisions comprehensively address differences in training, checking, and currency requirements for each aircraft. In some instances, the FAA may limit the number of different aircraft permitted in mixed flying. ODRs are used to identify credits or

constraints between aircraft. These credits may also be applied to a related aircraft when transitioning to another related aircraft when those aircraft are intended for use in mixed or nonmixed fleet operation. The overall process for operator application of MDRs and development, approval, use, and revision of ODRs is shown in Figure 8.

(2) *Availability and Use of FSB Information.* FSB requirements are made available to operators through FAA CHDOs, applicant, industry trade associations, posted on the OpSpecs Web site, or other sources. When preparing initial or difference programs for specific fleets, individual operators apply the requirements of the applicable FSB report.

b. Application of MDRs and Preparation and Use of ODRs.

(1) *Need for ODRs.* When operating a mixed fleet, operators prepare the necessary ODR table proposals to describe their particular fleet and show compliance methods. This is done to assess effects of differences, plan compliance methods, and obtain POI approval for that operator's specific program. ODR tables must be prepared and approved by the FAA for each fleet in which FSB requirements are established IAW FSB provisions.

(2) *Operator Responsibilities.* The operator's responsibilities include:

(a) Specification of a base aircraft.

(b) Identification of differences between the aircraft within a mixed fleet.

(c) Preparation of proposed ODR tables.

(d) Assessment and description of the effects of the differences on training, checking, and currency.

(e) Proposal of training, checking, and currency methods consistent with MDRs and FSB provisions.

(f) Presentation of proposed ODR tables with necessary supporting information to the FAA POI for approval.

(g) Revision of ODR tables when aircraft are introduced, modified, phased out, devices change, or MDRs change.

(3) *Use of Standard ODR Format.* A common format for ODR tables is used to facilitate preparation, review, use, comparison with MDRs, and ensure consistency of application and approval by POIs. The common format is used in all cases where ODR tables are required except when only a few minor differences exist and level A applies. In this event, letters between an operator and FAA containing the necessary information and approval may suffice if acceptable to the POI.

(4) *Minimum Threshold for ODR Preparation.* Within the mixed fleet, a minimum threshold for preparation of ODR tables occurs when there are differences that potentially affect knowledge, skills, or abilities necessary for flight safety. Differences not related to this criterion need not be addressed in ODR tables.

(5) *ODR Description and Examples.* ODRs are described in paragraph 4. Examples of acceptable ODR tables for a particular type-certificated aircraft are shown in each FSB report.

(a) Systems Shown on the ODR Table of Figure 3. An example of several pages from an ODR table is shown in Figure 3. Figure 3 shows the application of ODRs to address systems differences and compliance methods. In Figure 3 differences are grouped in the order associated with a typical operations manual. Air Transport Association (ATA) code numbers are shown for cross-reference. The ''Remarks'' column depicts differences and the ''Flight Characteristics'' and ''Procedural Change'' columns address effects of differences.

(b) Maneuvers Shown on the ODR Table of Figure 3. The ''Remarks'' column depicts differences. The ''Flight Characteristics'' and ''Procedural Change'' columns address effects of differences. The reference ''SEE APP'' refers you to an appendix to the table, which the operator prepares to more fully list and explain the particular procedural changes that pertain to the maneuver in the ''Procedural Change'' column.

(6) *Other Use of ODRs.* The ODR process may be used for other applications such as flight attendant or dispatcher qualification tracking, but such use is not required as part of this AC's provisions.

c. Selecting Base Aircraft. An operator chooses a base aircraft from one of the aircraft operated. Base aircraft are defined in Appendix 1. Additional information regarding base aircraft selection is in paragraph 7.

d. Identification of Differences and the Analysis of Effects of Those Differences. Differences must be described between base aircraft and other related aircraft. This may be done from base to each other related aircraft. Differences may also be described from any related aircraft to each other related aircraft. All MDR requirements must be satisfied relative to the base aircraft so the pairing of aircraft not authorized to be flown in a mixed fleet environment by the FSB reports is avoided. As long as a complete and clear relationship can be drawn from the base aircraft to each other related aircraft and all MDR requirements are met from the base aircraft, to each other related aircraft, there is no need to describe each possible combination of aircraft. This permits a comprehensive identification of differences that exist in the fleet, determines the effects of those differences, and shows compliance methods. Differences are generally organized to follow an operations manual or flight manual to facilitate use and review, and should be categorized by design, systems, and maneuvers. Effects of differences are stated in terms of effects on flight characteristics and procedures. Procedures include normal, nonnormal, alternate, and recall procedures, as applicable. Since complete descriptions may be too lengthy for direct incorporation in ODR tables, appendices, or references to other operators' documents may be used to describe differences or effects. Some differences or effects may be repeated in the analysis. For example, an FMS difference may be noted in both a navigation system section and maneuver section associated with preflight setup. The objective is to assure each difference that pertains to pilot training, checking, or currency is identified and addressed, so it is not necessary to limit difference descriptions to prevent overlap.

e. Identification of Compliance Methods. Once differences and difference effects are described, methods of comprehensively addressing each difference (compliance methods) are shown. With the difference descriptions, redundancy may occur. The same training or checking compliance item shown for one item may also be associated with and credited for other items. The objective for description of compliance methods is to show that each difference is addressed in some appropriate way, to show that the method and level chosen is consistent with the FSB MDRs, and example ODRs at a level at least equal to that required by the MDRs.

f. When Proposed ODR Compliance Methods Do Not Meet MDRs. If proposed ODR compliance methods do not satisfy MDRs or other FSB report constraints, the following alternatives exist:

(1) Differences may be reduced or eliminated by modification of aircraft, systems, or procedures.

(2) Other training methods or devices that fully comply with MDRs and other FSB provisions may be acquired, leased, or otherwise applied.

(3) Pilot assignments may be separated for a fleet so that mixed flying of related aircraft does not occur.

(4) MDR change proposals may be requested through FAA POIs to the FSB. If FSB authorized changes to the MDRs are made, the operator may then apply the revised criteria.

g. Maximum Number of Related Aircraft. Comparative differences between related aircraft may comply with FSB provisions; other limitations may also constrain mixed fleet flying. To prevent cumulative effects of differences for multiple related aircraft from adversely affecting pilot performance, the FAA sets guidelines for the maximum number of related aircraft to be flown. At difference level A, the number of related aircraft is greater since differences are fewer and less significant, whereas at level D or level E the number of related aircraft that can be flown is fewer because the differences are greater. To accommodate an increase in the differences level, increasing limitations are placed on the number of related aircraft that may be flown at the higher levels. Paragraph 7k contains specific guidance to POIs for approval of multiple related aircraft.

h. Application, Review and Approval. Paragraph 7 describes the FAA review and approval process. The process is summarized here to facilitate ODR table preparation. An operator submits the proposed ODR tables and necessary supporting information to the POI to apply for differences program approval. The supporting information may include any appendices to the ODR tables necessary for evaluation of the proposal, a transition plan if needed, and a proposed schedule for implementation. POIs may also require review of such pertinent and additional information as copies of bulletins, manuals, or other training materials, before they approve proposed ODRs. If devices are proposed that are not approved by the POI, or evaluated by the NSET, a review and approval of those training devices may be necessary before ODR approval. Sufficient lead-time must be provided to the FAA for review. Lead-time depends on such factors as

the complexity of program, proposed difference levels, number of related aircraft, other operator precedents already set, and FAA experience with the proposed aircraft, training devices, and methods. Many noncontroversial level A changes can be reviewed and approved in a few days. Complex programs with many related aircraft can require months for review and approval. It is the operator's responsibility to consult with the POI to ensure that sufficient lead-time is provided to review initial submissions or changes. At least 60 days notice is acceptable for most programs. After the operator submits the program proposal, POIs compare the proposed ODR with the FSB report provisions including the MDRs. POIs consult pertinent FAA policy directives (Handbook, notices, Safety Alerts for Operators (SAFO), etc.) for interpretations or guidance in accomplishing the review. In certain instances the POI must consult with the FSB before ODR approval. If ODRs are consistent with FAA policies and within the constraints of the MDRs and example ODRs, the POI will approve the operator's ODR tables and its proposed differences program. When approved by the FAA, ODRs establish the basis for training, checking, and currency programs for a given fleet for that operator.

i. Implementation Provisions Transition Period. In certain instances, a transitional period, agreed upon by the POI with FSB concurrence, may be necessary to permit operators to continue operations under previously approved programs until they are able to comply with FSB requirements. This is necessary when FSB provisions are initially set or revised and provisions require lead-time for program preparation, device acquisition, or to revise previously approved programs. Paragraph 7m and the individual FSB reports for each type-certificated aircraft discuss FAA approval of transition provisions.

j. ODR Revision. ODR revisions are initiated when changes occur in an operator's fleet relating to differences, difference effects, or compliance methods. ODR revisions are appropriate when such changes affect pilot knowledge, skills, or abilities relevant to flight safety. Examples of program changes or factors that may require ODR revision include:

(1) Addition or deletion of aircraft in a fleet;

(2) Modification of base aircraft or comparison aircraft in a fleet;

(3) Change of base aircraft;

(4) Discontinuation of use, addition of new or modification of training devices referenced by ODRs;

(5) Revision of training methods with a resulting change in compliance levels;

(6) Changes in effects of differences such as revised procedures, performance, or flight characteristics;

(7) FAA revision of MDRs or other FSB provisions;

(8) Adverse OE or training and checking experience that dictates inadequacy of ODRs, MDRs, or other FSB provisions;

(9) FAA surveillance results, enforcement actions, or failure of an operator to comply with provisions of their approved ODRs; and

(10) Other factors as determined by the POI.

Note: Revisions to ODRs are approved using the same procedures as for initial ODR's approval.

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FSB PROCESS

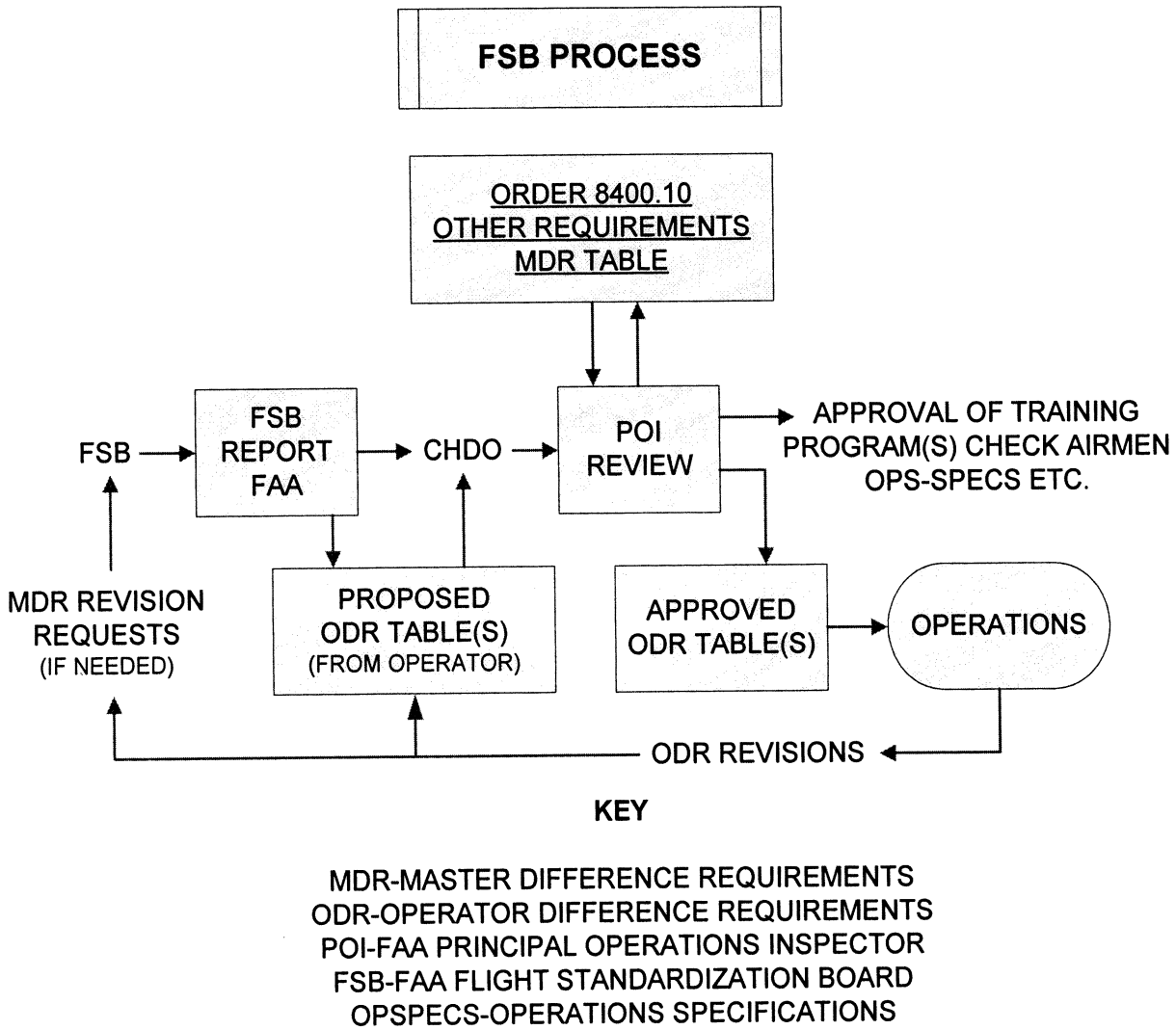

Figure 8

7. FAA Review and Approval of Operator Programs

a. General.

(1) *FAA Responsibilities.* FAA has the responsibility for review, approval, and continuing surveillance of individual operator programs consistent with this AC and FSB provisions. Within a CHDO, POIs have the responsibility for program review and approval. In addition to review, approval, and continuing surveillance of operator programs, CHDO and other district offices manage pilot certification consistent with the criteria of this AC and FSB provisions.

(2) *Approval Basis.* FAA approvals are based on FSB report findings and policy guidance included in FAA directives (*e.g.*, Order 8400.10, Air Transportation Operations Inspector Handbook, notices, SAFOs, etc.). Except as provided for in transition plans, all preparations must be complete and provisions approved before conducting training, checking, or establishing currency under this AC and an FSB report.

b. Operator Application of ODRs.

(1) *Operators Using Related Aircraft in Mixed fleet Flying.* If FSB requirements are published, operators operating aircraft in mixed fleet flying must apply provisions of this AC and the FSB report. AC criteria and FSB MDRs must be applied anytime pilots operate mixed fleets between training and checking events.

(2) *Threshold Requiring ODR Preparation.* Even though an operator has different configurations of aircraft used in mixed fleet flying, there is some threshold below which ODR tables and POI approval is not required. The threshold requiring AC and ODR application occurs when differences in related aircraft affect pilot knowledge, skills, and/or abilities pertinent to flight safety. If systems, controls, indications, procedures, or maneuvers are different and these differences have an effect that significantly relates to what the pilots needs to know or do for safe mixed fleet flight operation, then an operator must prepare ODR tables and seek FAA approval. Conversely, ODR tables would not need to be prepared in situations that do not affect flight safety. In such instances ODR tables are not needed even though pilots routinely operate several related aircraft. A minimum threshold is set to preclude unnecessary administrative assessment of mixed fleet flying, which has no safety implications. If changes to the fleet do not affect pilot knowledge, skills, or abilities affecting flight safety, then such changes need not be considered in addressing FSB or this AC provision.

(3) *FAA Review of ODR Proposals.* After preparation the carrier submits proposed ODR tables and supporting information to the CHDO and POI for review and approval. POIs evaluate the following:

(a) The operator has made an appropriate identification of a base aircraft.

(b) Operators have comprehensively identified differences in the particular fleet. This includes appropriate ODR table comparisons between the base aircraft and each related aircraft.

(c) The operator's assessment of the affects of differences on flight characteristics and procedures for the base aircraft and each related aircraft are suitable and valid.

(d) The compliance methods listed are consistent with the requirements of the MDR tables, footnotes, other pertinent FSB report provisions, FAA Order 8400.10, and associated advisory materials.

(e) ODR provisions adequately address any ''subtle differences'' between related aircraft that have a possibility of inducing potentially serious pilot errors.

(f) Training materials, methods, devices, and simulators proposed are acceptable, approved by the NSET if necessary, or if FSB provisions apply, the ODR tables meet FSB constraints.

(g) ASIs, APMs, and APDs are prepared to apply FSB report checking standards.

(h) Implementation plans are adequate and consistent with FSB provisions and other FAA policy.

(i) Other factors determined necessary by the POI are considered and any requirements met.

(4) The POI uses the example ODR tables and the MDRs provided in the FSB report as a basis for evaluating the suitability of a particular operator's proposed ODR table. The MDR always remains the primary basis for comparison. The AEG should be consulted in the absence of conclusive guidance in making such judgments. Guidance for evaluation of specific system or maneuver items may be found by comparison of the proposal with the example ODR table shown in the FSB report and other approved ODR tables. The operator may use devices, techniques, or methods of an equal or higher difference level. Critical methods must be at least at the level specified by the FSB on the MDRs and shown in the example ODR table. Actual ODR tables proposed by the operator may show a variety of compliance methods to satisfy a particular item, ranging from level A through the level required by the MDRs. For example, if the MDR requirement is a minimum of level C, the operator may propose to use a combination of level A bulletins, level B slide tape presentations, and level C training devices to satisfy pertinent items. However, at least level C must be shown for critical items. The operator may choose to satisfy a level C MDR provision with level D or level E methods.

(5) *ODR Review Example.* The following is an example of the process for review of a specific item on a proposed ODR table. For each proposed ODR item both the FSB example ODR table and MDRs are consulted and compared with the operator's proposal. If the MDRs specify that level C devices are needed for training, checking, and currency between the base aircraft and a related aircraft and the example ODR table shows applicable level C systems differences or maneuvers, then the POI should ensure that the proposed ODR table submitted also shows at least level C for those pertinent systems or maneuvers.

c. Base and Other Aircraft Identification.

(1) *Selecting the Base Aircraft.* Base aircraft are defined in Appendix 1. In general, base aircraft are used as reference for comparison of differences that affect, or could affect, pilot knowledge, skills, or abilities pertinent to flight safety. A base aircraft should typically be the aircraft that the operator trains to first, the aircraft that the operator has the largest number of, the aircraft most pilots fly frequently, or the aircraft that represents a configuration that the operator eventually will have as a standard. Another aircraft may be selected as a base aircraft when the previous base aircraft is being phased out, converted to a new configuration, or other such factors. A base aircraft may be redesignated at the discretion of the operator with FAA concurrence. A base aircraft is identified by make, type-certificated aircraft, model, and series or other distinguishing classifications. Classification should distinguish pertinent differences in configuration, handling characteristics, performance, procedures, limitations, controls, instruments, indicators, systems, installed equipment, options, or modifications.

(2) *Identifying Related Aircraft.* A related aircraft is an aircraft or a group of aircraft with the same characteristics that have pertinent differences from a base aircraft. Pertinent differences are those that require different or additional pilot knowledge, skills, and/or abilities that affect flight safety. Differences considered pertinent are those relating to configuration, handling characteristics, performance, procedures, limitations, controls, instruments, indicators, systems, installed equipment, options, or modifications. Related aircraft can exist between different models, series or within a model/series. When designated in FSB reports, any aircraft included in a MDR table is considered a related aircraft. Like base aircraft, operators designate related aircraft by one of the following:

(a) Model/series.

(b) FAA registration ''N number''.

(c) Operator tail number.

(d) Any other classification that can uniquely distinguish pertinent differences between each related aircraft group and a base aircraft.

(3) *Accounting for Each Related Aircraft.* The important factor in base and related aircraft identification and ODR table preparation is that regardless of the combination used, there should be direct and complete traceability of both differences and compliance methods. There must be a clear description showing the adequacy of compliance methods to assure proper training, checking, and currency to safely operate each aircraft assigned.

d. Approval of ODRs.

(1) *Approval Method.* Following review and determination that an operator's program meets pertinent FSB requirements, the POI approves that particular program by signing ODRs. ODR tables are approved for each applicable related aircraft. Signature of ODRs or revisions, together with other relevant documents such as training programs and OpSpecs, constitute approval by the POI of that operator's differences training, checking, and currency program requirements. ODR tables are used for most programs. In instances where aircraft have only a few minor differences at level A, approval may take the form of a letter including necessary information in lieu of using tables.

(2) *POI Authority at level A and B.* POIs have authority at A and B level to make determinations without AEG coordination if compliance methods are within the MDRs. This is important to provide timely response to minor differences requests. The results of these determinations are forwarded to the pertinent FSB for permanent retention, comparison, and future FSB evaluation.

(3) *POI Coordination Required at Level C and Above.* At C, D, and E level the POIs may approve operator programs only if the programs are clearly within the requirements of the MDRs. If there is doubt whether or not an operator's program meets the MDRs, the POI consults with the FSB well before the operator's program approval date, to allow time for review and resolution of open issues. If the operator request is unclear or less strict than the MDRs requirements, the POI may not approve that program.

(4) *Initial and Final Approval.* Like other training programs, POIs may authorize ''initial'' approval for an assessment period to review program effectiveness. Final approval should be made after suitable experience is obtained (generally within 6 months) IAW criteria in FAA Order 8400.10. In situations where initial approval is completed but final approval is delayed because of continuous revision or that results are uncertain should be avoided. When operators propose to add aircraft, modify existing aircraft, change base aircraft, phase aircraft out, or take other actions, which make the applicability of ODRs unclear, then the ODR tables for that operator must be updated. For some operators a continuous series of ODR table modifications will occur as its fleet changes. Nevertheless, the ODR tables must be current at all times. ODR tables are used as a primary means for establishing regulatory compliance and managing surveillance of training, checking, and currency programs.

e. POI Uncertainty Regarding Program Compliance. The POI must resolve any questions before approval if it is not clear that the operator's proposal complies with the MDR table and other FSB provisions. When issues cannot be resolved to clearly establish compliance with MDRs or other FSB report provisions, the AEG/FSB should be consulted. Early in program development, POIs may need more consultation with FSB members. In mature programs, better examples will be available in FSB reports, other operator ODR, and the manufacturer's larger databases for operators.

f. Proposals that do not Comply with FSB Provisions. If the operator proposes a program less restrictive than the requirements of the MDRs or other FSB

provisions, then options of paragraph 6h. apply. If an operator wishes to pursue a proposal less restrictive than the FSB report or MDRs, details of the proposal and supporting documentation should be presented to the POI for forwarding to the AEG/FSB. The POI will evaluate the carrier's proposal and, if justified, forward the proposal with recommendations for revision of MDRs.

g. FSB Revision of MDRs or Other FSB Provisions. When requested by a POI, the FSB reviews an operator's proposals and if necessary modifies MDRs and other FSB provisions. If master requirements have been amended and the proposal meets the revised requirement, the POI may approve the proposal. Other operators can also apply for similar approval or reductions based on the revised FSB report. Major changes in the MDR table may require review by the full FSB. The FSB may consider minor changes or interpretations on an ad hoc basis between FSB meetings for that aircraft. For some requests changes can be made based on existing or the supplied information. Complex cases may require testing to be conducted by the applicant before the MDR table is changed. Should the MDRs be updated to accommodate a change request, the proposed ODR can be approved within the new MDRs. Proposals for revisions to levels C, D, or E must be forwarded to the FSB for resolution through the formal FSB process. Allow at least 60 days for FAA evaluation of such proposals.

h. Proving Tests. When a related aircraft with difference levels C or greater is introduced by an applicant, proving runs may be needed. Proving runs are usually needed for levels D and E. At level E, regulatory provisions for proving runs must be met. Training flights, test flights, delivery flights, and demonstration flights may be credited toward levels C and D proving requirements if necessary operational experiences are demonstrated and the flights are IAW an FAA-approved plan. FAA Order 8400.10 describes policies for FAA approval of proving tests.

i. Line-Oriented Flight Training (LOFT), LOS, or SLF. When operators have LOFT/LOS/SLF programs and additional related aircraft are approved, the POI must review those LOFT/LOS/SLF programs to assure applicability to each related aircraft. SLF in the aircraft, or in some instances simulator (as determined by the FSB), may be necessary IAW provisions of the FSB report and with the approval of the POI.

j. OE. As described in this AC and FSB reports, OE is consistent with definitions and requirements of 14 CFR. OE credit, as provided by the FSB for experience with related aircraft, may be permitted with the approval of the POI.

k. Limitations on the Total Number of Related Aircraft.

(1) *Mixed Flying of Multiple Related Aircraft.* When mixed fleet flying involves pilots operating more than a base aircraft and a single additional related aircraft, additional constraints limiting the total number of aircraft may apply. Operation of multiple related aircraft requires a review by the POI to ensure that pilots can retain and properly apply necessary differences information or skills for each related aircraft without confusion. When more than two related aircraft are flown, POIs must specifically ensure that subtle or compounded differences between the various related aircraft do not result in confusion of procedures, maneuvers, or limitations. ODRs proposed for the overall combination of aircraft to be flown must be examined to ensure the following:

(a) That multiple differences do not result in confusion of requirements or an excessive level of complexity for pilots to adjust to or retain important differences information;

(b) That subtle variations in differences information are not mistakenly applied and lead to unsafe conditions; and

(c) That the amount of differences information is not excessive, not applied to the wrong aircraft, or not forgotten.

l. Compliance Checklist for CHDOs. FSB reports provide a CFR compliance checklist. The checklist identifies those 14 CFR parts, ACs, or other FAA requirements that are in compliance. Pertinent 14 CFR items not shown on the checklist or items shown but not reviewed by the AEG/FSB for compliance must be reviewed by the CHDO before POI approval of OpSpecs permitting those aircraft to be used under 14 CFR. Items found not compliant by the AEG/FSB must be reconciled and compliance established before operation. The compliance checklist is an aid to CHDOs used to show the status of those 14 CFR items evaluated by the AEG/FSB, but does not comprehensively address all possible 14 CFR items and ACs that an operator may need to demonstrate compliance. OpSpecs, exemptions, deviations, or other factors, which the AEG/FSB may not be aware of, may also apply and may modify compliance status or methods shown in the checklist.

m. Implementation of FSB Provisions. These provisions are addressed in each type-certificated aircraft FSB report and must comply with any criteria shown in that report. POIs approve implementation provisions at the same time ODR tables or revisions are approved. Operators that do not elect to apply this AC or implement FSB provisions specified by the FSB report require approval by the Director, Flight Standards Service, AFS–1.

n. Aircraft That Do Not Have an FSB Report. When an FSB report is not prepared for a given type-certificated aircraft, or when MDRs or other provisions are not shown, programs are approved IAW the 14 CFR, Order 8400.10, and other pertinent inspector guidance material.

8. Application of Requirements to Airmen Certification

a. General. In addition to master requirements, the FSB report contains specifications for administration of pilot type rating or proficiency checks by FAA inspectors or operator check airmen. FAA pilot certification inspectors, APMs, operator check airmen, APDs, and DPEs should be familiar with FSB provisions regarding the proper administration of any necessary checks or evaluations for type-certificated aircraft or their series covered by the FSB report.

b. Checking Specifications. FAA pilot certification inspectors and APMs should assure proper application and administration of checks required by FSB reports as constrained by the MDR and specific ODR tables. FSB reports describe difference levels which constrain the various maneuvers, procedures, or unique factors to be considered by inspectors or check airmen when administering checks or observing OE. For example, certain nonnormal procedures may be required and others may be waived (for example no flap landings). Other unique procedures or maneuvers particular to an type-certificated aircraft may be necessary. Any unique configurations or failure conditions that should be observed while administering checks are described.

c. Checks Regarding Complex Systems.

(1) Partial proficiency checking is required for differences associated with systems that are determined to be at or greater than level C.

(2) Complex systems checks include hands-on operation and ensure demonstrated procedural proficiency in each applicable mode or function. Specific items and flight phases to be checked are specified (e.g., initialization, takeoff, departure, cruise, arrival, approach, and pertinent nonnormals). The FSB may require additional training beyond that which is otherwise required by 14 CFR to qualify in each type-certificated aircraft. This training may be in the form of LOFT, LOS, or SLF.

9. Training Device and Simulator Approval

a. Training Device and Simulator Characteristics.

(1) *Minimum Device and Simulator Characteristics.* AC 120–40 and AC 120–45 describe minimum acceptable characteristics and standards for flight training devices and simulators. The FSB directly applies these standards in difference level specifications. When applicable, the FSB specifies other device characteristics as the minimum acceptable for differences training, checking, or currency between certain related aircraft. The FSB reports identifies these characteristics.

(2) *Coordination with the FAA National Simulator Program (NSP).* When the FSB specifies device characteristics, the FSB coordinates with the NSET to ensure simulator criteria compatibility and approval process definition. If device or simulator characteristics have not been previously recognized by the FAA as meeting the provisions of this AC, FSB, or the simulator evaluation and approval process, they must be evaluated by the NSET in consultation with the FSB before use in an approved program.

b. Aircraft/Simulator/Device Compatibility.

(1) *Devices and Simulators to Match Aircraft.* When pilots fly related aircraft in a mixed fleet, the combination of simulators and training devices used must satisfy MDR and ODR provisions specific to the aircraft flown by that operator. The POI, FSB, and the NSP must address the acceptability of differences between training devices, simulators, and aircraft operated as appropriate. The FSB, POI, and when necessary, the Air Transportation Division,

AFS–200, or the General Aviation and Commercial Division, AFS–800, as applicable, identify acceptable credit for simulators and training devices.

(2) *Differences Between Devices, Simulators, and Aircraft.* When differences exist between related aircraft and the proposed training devices, or simulators to be used, then MDRs and ODRs may be used as guidance for acceptance and approval as is done between aircraft. The FSB, the NSP, and AFS–200 or AFS–800, as applicable, should be consulted when uncertainty exists regarding the use of MDRs and ODRs for acceptance or approval of these devices. The FSB will not recommend use or approval of devices that differ significantly from the actual operated aircraft.

c. Simulator and Device Approvals.

(1) *NSP Representation to the FSB.* An NSP member may serve as an advisor to the FSB or a member of the FSB, to address designation of and approval processes for devices and simulators at C, D, and E difference levels.

(2) *Coordination of NSP Criteria with the FSB.* National simulator team development of criteria for training devices and approval test guides for new aircraft are coordinated with the FSB. This ensures compatibility of FSB/NSP requirements and effective use of resources for development of approval test guides and determination of FSB requirements.

10. Review and Approval

FSB reports are approved as designated by AFS–1. In the event that revision of an FSB report is necessary, the FSB is provided with necessary policy guidance to implement applicable changes.

11. Appeal of FAA Decisions

When there is disagreement with provisions of an FSB report, that disagreement may be expressed to the FSB chairman for the pertinent type-certificated aircraft. If an issue cannot be resolved, the issue may then be addressed to AFS–200. Additional information, data, or analysis may be provided to support differing views regarding the FSB provisions in question.

APPENDIX 3.—RATINGS AND LEVEL TESTS—PLANNING AND APPLICATIONS

1. Preparation
2. Pilot Type Rating Determination Through Analysis-Level A or B Training Only
3. Function Equivalence-Level A or B Test 1 (T1)
   a. Test Purpose
   b. Test Subjects
   c. Test Process
   d. Safety Pilot
   e. Successful Test
   f. Failure of Test
4. Handling Qualities Comparison Between Aircraft-Test 2 (T2)
   a. Test Purpose
   b. Test Subjects
   c. Test Process
   d. Safety Pilot
   e. Successful Test
   f. Failure of Test
5. System Differences Test and Validation of Training and Checking-Test 3 (T3)
   a. Test Purpose
   b. Test Subjects
   c. Test Process
   d. Successful Test
   e. Failure of Test
6. Currency Validation-Test 4 (T4)
   a. Test Purpose
   b. Test Subjects
   c. Test Process
   d. Successful Test
   e. Failure of Test
7. Initial or Transition Training/Checking Program Validation-Test 5 (T5).
   a. Test Purpose
   b. Test Subjects
   c. Test Process
   d. Successful Test
   e. Failure of Test
8. Common Takeoff and Landing Credit (CTLC)-Test 6 (T6)
   a. Test Purpose
   b. Test Subjects
   c. Test Process
   d. Successful Test
   e. Failure of Test

APPENDIX 3.—RATING AND LEVEL TESTS—PLANNING AND APPLICATION

1. Preparation

a. The pilot type rating, difference level definition, and test process are initiated when an applicant presents an aircraft for type certification. If the applicant presents a candidate aircraft to the Flight Standardization Board (FSB) as a new aircraft type certification with no anticipated application for pilot type rating credit for similarities with aircraft previously type certificated, then the FSB analyzes the training program requirements using test T5. The results of T5 will determine a separate pilot type rating and the minimum required training, checking, and currency standards as applicable to that type-certificated aircraft. If the applicant presents an aircraft seeking pilot training, checking, or currency credit, based on similarities with an aircraft previously type certificated, a series of possible tests (T1/T2/T3) are developed and used to determine its level of difference with the base aircraft of comparison. The results of these tests will determine whether the aircraft pilot type rating is a common pilot type rating between separate type-certificated aircraft; or the same pilot type rating of same type-certificated aircraft. The level of differences will determine the minimum required training, checking, and currency standards as applicable to the candidate aircraft. T6 comparisons may permit Common Takeoff and Landing Credit (CTLC) between different type-certificated aircraft. In Appendix 2 the details of these situations provide further amplification.

b. To begin the evaluation process, the applicant identifies candidate aircraft. The aircraft are then assigned to logical aircraft groups to be described in Master Difference Requirements (MDR) tables and the FSB report.

c. The applicant identifies major differences pertinent to the aircraft and makes comparisons with the proposed candidate aircraft. A differences document (i.e., an appropriate sample Operator Difference Requirement (ODR) table) summarizes the identified differences. Since combinations of related aircraft may be numerous and only typical differences are needed at this stage for test definition, the applicant may select representative ODRs for preparation.

d. Based on the above analysis (including preliminary flight test results or flight simulation estimates, if available), the applicant proposes difference levels to be specified in each cell of the MDR table for the various aircraft combinations.

e. The applicant proposes applicable elements of the test process (T1 through T5 and T6 for CTLC) and a plan for validation of the intended difference levels. Specific aircraft, times, devices, etc. are identified to conduct the required tests for the candidate aircraft. Included in the proposal are any necessary interpretations of expected results using established standards. Any special, unique, or additional definitions of successful outcomes are also identified.

f. The scope of T1 through T6 is keyed to basic visual flight rules (VFR) and instrument flight rules (IFR) operations in the National Airspace System (NAS).

g. FAA/applicant agreement is reached on the grouping of aircraft, proposed tests, test plans, schedules, subjects, and interpretation of possible outcomes.

h. Subject qualifications are addressed at the time of test specification when test agreement is reached with the applicant. Test subjects for all tests except T6 are drawn from the FAA. Subject selection considers the factors such as the following:

(1) Needed background skills of candidates (previously qualified aircraft);

(2) General flight experience and currency;

(3) Test requirements such as location, short notice access, and skills needed for subjects;

(4) Technical areas, qualifications, or experience that subjects should not have to avoid test prejudice;

(5) Eventual FAA geographic or operator related distribution requirements for ASI, APM, and POI personnel; and

(6) Other special experience as needed for a particular program.

i. During preparation for testing and evaluation of results, appropriate Aircraft Certification Flight Test Branch coordination is accomplished so that flight characteristic issues and, in particular, special flight characteristics can be suitably identified and addressed.

Note: Tests T1 and T2 must be conducted in the candidate aircraft for the determination of training, checking, and currency requirements. However, the FSB chairman may elect to use a simulator before its qualification by the National Simulator Evaluation Team (NSET). This may be done for selected FSB T-tests that involve partial-task evaluation of systems or components, which do not directly relate to aircraft handling qualities or core pilot skills. These types of tests would normally require only a training device with no visual or motion capabilities.

2. Pilot Type Rating Determination Through Analysis-Level A or B Training Only

a. Typically, with the introduction of a new aircraft, or when training credit is sought in a comparison of a base and candidate aircraft, the T1 through T5 testing process determines pilot type rating. Not all changes or modifications to an aircraft or on occasion, the certification of a related aircraft may require flight-testing to assess their impact upon pilot type rating. Pilot type rating determination through analysis may be considered if the changes do not influence aircraft handling, introduce no significant change to systems operation or pilot procedures, and can be addressed at level A or B training.

b. The analysis process can be used if the aircraft handling has not changed significantly. In most cases, it should be obvious that the change will not affect aircraft handling but if additional data is needed to make the determination, the information can be obtained from the assigned FAA Aircraft Certification Service (AIR) or through the applicant's flight test data. Following is a list of typical changes evaluated through the analysis process:

(1) Maximum operating weights (revised aircraft type certificate data sheet (TCDS)).

(2) An engine type or thrust change that does not require significant design changes to aircraft flight controls.

(3) Maximum passenger capacity (revised aircraft TCDS).

(4) Avionic upgrades (Supplemental Type Certificate (STC) or manufacturer production line upgrade).

(5) Proven electronic flight bag installation, (STC or manufacturer production line upgrade).

(6) Passenger to cargo conversions.

c. When the analysis process is completed, it is recorded as a revision to the training courseware and to the existing FSB report for the base and/or candidate aircraft.

3. Functional Equivalence-Level A or B Test 1 (T1)

a. Test Purpose. The T1 test is conducted to determine if training level A or B is appropriate between the base and candidate aircraft.

Note: If the applicant communicates that the training, checking and currency requirements for the candidate aircraft may exceed level B, the T1 test can be waived and the evaluation process then moves directly to the T2 test. By waiving the T1, the applicant acknowledges that differences exist between the base and candidate aircraft, and may demand that training, checking, and/or currency requirements up to but not exceeding level D are applied.

b. Test Subjects. Test subjects are designated FAA FSB members, trained, experienced, and current on the base aircraft with no differences training for the candidate aircraft. The applicant may provide proficiency training to the designated FSB members before testing begins.

c. Test Process. The applicant initiates the test process when they propose that the minimum training, checking, and currency requirements for the base and candidate aircraft are no greater than level B differences. At the discretion of the FSB chairman, the T1 test may be accomplished in a training device/simulator or airplane as appropriate. T1 is typically conducted using one group of test subjects. Subjects will initially be given a ''no jeopardy'' flight check for their base aircraft to calibrate performance before taking the pertinent flight check in the candidate aircraft being evaluated. The flight check undertaken in the candidate aircraft will address the differences between the base aircraft and candidate aircraft. The test may be administered or observed by more than one FSB member to ensure consistency and uniformity of test procedures and common understanding of subject performance and outcomes.

d. Safety Pilot. A ''safety pilot,'' serving as PIC in the aircraft and functioning as pilot monitoring in either seat, will intervene to prevent damage to the aircraft or to limit maneuvers that endanger safety of flight.

e. Successful Test. FSB members decide the outcome of the T1 test consistent with previously agreed upon criteria. The FSB determines the areas of differences training required and specifies necessary devices or training limitations. If the T1 test is passed, the pertinent aircraft pairs are assigned to level A or level B training differences. Successful completion of T1 results in awarding of the same or a common pilot type rating.

f. Failure of Test. If the T1 test is failed and retesting is not considered, level A or B cannot be assigned. This generally requires completion of T2 and T3. If requesting training credit, the applicant may ask for and receive credit for those items passed in T1. T1 retesting may be considered at the discretion of the FSB.

4. Handling Qualities Comparison Between Aircraft-Test 2 (T2)

a. Test Purpose. The T2 test compares handling qualities between the base and candidate aircraft to determine whether training level B, C, or D is appropriate. At the discretion of the FSB chairman the T2 test may be completed through analysis, without requiring an aircraft flight. Determining if the analysis process can be used requires verification that the aircraft handling has not changed significantly as described in the ''test process''. In most cases, it should be obvious that the change will not affect aircraft handling but if the determination requires additional data, the information is obtained from the assigned FAA Aircraft Certification Office or through the applicant's flight test data. With FAA agreement, elements of T2 may be incorporated within the T3 test to verify that an advanced simulator or aircraft training is not needed to address handling qualities.

Note: If T2 is conducted on an aircraft that is expected to require a separate pilot type rating with CTLC, credit will be validated by using the T6 process.

b. Test Subjects. Test subjects are designated FAA FSB members, who are trained, experienced and current on the base aircraft with no differences training for the candidate aircraft. Training to proficiency may be provided to the designated FSB members by the applicant before the start of testing.

c. Test Process. The applicant initiates the test process when they analyze available flight or simulation test data, and aircraft design or system differences, and determine that handling similarities exist between the base and candidate aircraft. From this determination the applicant makes their T2 proposal. Before the test, representatives of the FSB review the T2 test profile to ensure that critical handling quality aspects of the candidate aircraft are examined. The flight evaluation consists of relevant parts of a proficiency check as determined by the FSB chairman. T2 consists of a comparison between selected pilot certification flight check maneuvers (normal and nonnormal) administered first in the base aircraft (using either the actual aircraft or a level C or D simulator) then in the candidate aircraft. Although T2 testing should always be accomplished in the candidate aircraft, some portions that significantly affect aircraft safety, such as flight control failures, may be conducted in a simulator suitable for the test. Subject pilots are evaluated on performance of required maneuvers consistent with standards set by 14 CFR and an assessment of the degree of difficulty in performing maneuvers in the candidate aircraft compared to the base aircraft. The test may be administered or observed by more than one FSB member to ensure consistency and uniformity of test procedures and common understanding of subject performance and outcomes.

d. Safety Pilot. The safety pilot serving as PIC in the aircraft and functioning as pilot monitoring in either seat, will intervene to prevent damage to the aircraft or to limit maneuvers which endanger safety of flight. The safety pilot can only assist the subject pilot in areas unrelated to the handling qualities determination. For example, the safety pilot can remove impediments to progression of the test but cannot fly, coach, or train the subject on any aspect of the test related to handling, vision cues, or motion cues. The safety pilot may not actuate primary flight controls during the evaluation, or instruct, lead, or coach test subjects in any manner. The safety pilot may:

(1) Perform all routine pilot monitoring duties.

(2) Set up or adjust systems, including those normally operated by the pilot flying in accordance with pretest agreements.

(3) Address or resolve procedural impediments.

(4) Manage and satisfy checklists.

(5) Make normal call outs.

e. Successful Test. The FSB members decide T2 test outcome consistent with previously agreed upon criteria. Acceptable pilot performance in completion of designated maneuvers, without differences training, establishes that the candidate and base aircraft are sufficiently alike in handling characteristics to permit assignment of level B, C, or D. The test process can then advance to differences training and the T3 test.

f. Failure of Test. Failure of T2 means that major handling differences exist during critical phases of flight or that numerous less critical differences were identified that warrant training in a full flight simulator or aircraft. Accordingly, level E differences will

be assigned and the FAA will issue a separate pilot type rating. With a T2 failure, the next step in the testing process is T5, to validate level E requirements and the proposed training course. Failure of the T2 does not necessarily mean that the base and candidate aircraft do not share a high degree of system and/or handling commonality. The applicant may elect to use the data collected during the T2 process to justify approval of a shortened pilot type rating course for pilots that are trained on the base aircraft and are transitioning to the candidate.

5. System Differences Test and Validation of Training and Checking—Test 3 (T3)

a. Test Purpose. Test 3 is used to evaluate the proposed differences training, checking, and training devices at levels B, C, or D.

b. Test Subjects. Test subjects are designated FAA FSB members, trained, experienced, and current on the base aircraft with no differences training for the candidate aircraft. Training to proficiency may be provided to the designated FSB members by the applicant before the start of testing.

c. Test Process. T3 is a system differences test and a validation of training and checking. It is used when the equivalent handling test (T2) is successfully completed or when T2 is being incorporated as part of T3. T3 is administered in two phases following differences training of a pilot in the candidate aircraft.

(1) *First Phase.* The successful completion of a pilot certification flight check to assess pilot knowledge, skills, and abilities pertinent to operation of the aircraft being tested. If a full check is proposed, the tests are similar to those used for T1 as described in paragraph 2 above. If a partial check is used, the process is similar, but the FSB determines the test items based on the applicant's proposals. The first phase will include either a proficiency check as defined by 14 CFR, partial proficiency check, or individual aircraft system operation check administered to pilots in the simulator or candidate aircraft. The check is administered assuming currency in the base aircraft and completion of the proposed training in the candidate aircraft.

(2) *Second Phase.* Line oriented flying (LOF) following completion of the flight check. The LOF phase of the test is used to validate the training and checking being proposed, fully assess particular difference areas, examine implications of mixed fleet flying, assess special circumstances such as minimum equipment list (MEL) effects, and identify the effects of pilot errors potentially related to the differences. The test is done in a real line flight environment that includes typical weather, routes, airports, air traffic control (ATC), and other factors that are characteristic of those in which that aircraft will be operated. LOF tests may be conducted in test aircraft, simulators, or with a combination of these in conjunction with function and reliability certification tests. The LOF portion of the test may be used to evaluate complex issues or issues that cannot be fully detailed in a brief flight check since a check only samples pilot knowledge and skills in a limited and highly structured environment. LOF is an integral part of T3 and must be successfully completed before ''initial'' assignment of difference levels. In developing and selecting scenarios for evaluation consider the following:

(a) Likelihood of occurrence;

(b) Possible consequences; and

(c) The timeliness of pilot discovery and correction.

d. *Successful Test.* The FSB members decide the outcome of the T3 consistent with previously agreed upon criteria and completion of LOF with appropriate pilot performance. Passing T3 leads to setting respective difference levels and validates differences training and checking at level B, C, or D between related aircraft.

e. Failure of Test. Failure of T3 occurs with either failure of the check, agreed criteria, or unsatisfactory performance during the LOF portion of the test. In certain failure cases, T3 can lead to assignment of level E and a separate pilot type rating. The following are examples that may lead to the assignment of level E differences:

(1) T3 experience or difficulties that show the need for assignment of training levels approaching typical initial/transition levels.

(2) T3 pilot performance that indicates that devices or methods associated with level D are not adequate to achieve training or checking objectives.

(3) Repeated failures of attempts to pass T3 test at level D training differences. In the case of retesting, new subjects may be required at the discretion of the FSB Chairman.

Note: Repeated failure of test at level D differences by one or more subject's (pilot) inadequate performance, that is not an individual subject's failure due to sub-par or atypical personal performance as determined by the FSB, may lead to assignment of level E differences.

6. Currency Validation—Test 4 (T4)

a. Test Purpose. The T4 test is a currency test that can be used when an applicant seeks relief from existing FSB currency requirements. In the context of this AC, currency addresses system procedural and maneuver differences between related aircraft. T4 does not include takeoff and landing recency of experience.

b. Test Subjects. Designated FAA FSB members.

c. Test Process. If an applicant desires a change in the currency requirements, a T4 test may be conducted. This test may be done before or after the aircraft enters into service. In the event the test cannot be done before entry into service, the FSB established limits apply. Criteria that may be used by the FSB to set level B, C, D differences for currency for initial FSB determinations include the following examples:

(1) Complex flight critical systems affecting control or navigation.

(2) Critical nonnormal maneuvers differing between related aircraft (e.g., V1 engine failure, emergency descent, etc.), requiring one acceptable demonstration/training or checking event (typically 6 months but demonstration period may also vary by pilot position).

(3) Secondary systems (e.g., Oxygen or auxiliary power unit (APU)).

d. Successful Test. The FSB members decide the outcome of T4 consistent with previously agreed upon criteria. A successful test validates that the proposed less restrictive currency provisions are accepted as a means of compliance with applicable rules, provisions of this AC, and/or currency provisions and provide an equivalent level of safety.

e. Failure of Test. Failure indicates that the proposed less restrictive currency requirements do not provide an equivalent level of safety. At the discretion of the FSB, retesting may be appropriate.

7. Initial or Transition Training/Checking Program Validation—Test 5 (T5)

a. Test Purpose. T5 test validates the applicant's training course(s) at level E (new pilot type rating). It is appropriate when:

(1) A full initial or transition training/checking program requires validation;

(2) An applicant seeks training credits between two aircraft with different pilot type ratings (a typical goal under shortened training programs); or

(3) T2 or T3 are failed.

b. Test Subjects. Designated FAA FSB members.

c. Test Process. There are two methods to accomplish the T5 test process:

(1) *Full Initial or Transition Training/Checking Program Validation.* This method is used when an applicant has developed an aircraft and seeks a new pilot type rating without any credit for commonality with any related aircraft. The applicant develops a training program to qualify and check pilots in the candidate aircraft at level E differences. Subjects are trained, given flight proficiency checks and complete LOF in a process similar to that described in paragraph 5.

(2) *Shortened Transition Training/Checking Program Validation.* This method is used when an applicant has developed an aircraft and seeks a new pilot type rating and credit for commonality with related aircraft. The applicant conducts a handling-qualities evaluation based on the applicant's proposed ODR tables (similar to T2), followed by training and checking program validation (similar to T3). Subjects are trained, given flight proficiency checks and complete LOF in a process similar to that described in paragraph 5.

Note: When an aircraft is assigned level E differences because of a failure of T3 test at level D differences, credit for successfully passing individual elements of the T3 test may be used as justification for not duplicating those elements in the T5 test.

d. Successful Test. The FSB members decide the T5 outcome consistent with previously agreed upon criteria. A successful outcome of T5 validates the proposed training and checking programs.

e. Failure of Test. Failing T5 indicates the proposed training or checking programs require modification. A retest by mutual agreement between the FSB and applicant would normally be required.

8. Common Takeoff and Landing Credit (CTLC)—Test 6 (T6)

a. Test Purpose. The applicant uses T6 when they seek credit between related aircraft toward the takeoff and landing

recency of experience requirements of the applicable 14 CFR parts.

b. Test Subjects. The test should consist of a sufficient number of pilots not trained or qualified in the candidate aircraft. These subjects will be drawn from the manufacturer, industry and the FAA that the FSB determines will represent a statistically relevant cross-section of operational pilots. The participants' experience levels, pilot type ratings and airplane currency should reflect the proficiency difference levels needed to validate testing assumptions.

c. Test Process. Test subjects are first provided refresher training in the base aircraft to establish a baseline of proficiency, then placed in the candidate aircraft, without any training in it, and perform a minimum of three takeoffs and landings without use of the autopilot. It may not be practical to conduct some tests in an aircraft. A simulator may be used to conduct these tests. Test subjects should be evaluated on their ability to fly the aircraft manually through takeoff, initial climb, and approach and landing (including the establishment of final landing configuration). The applicant should consider the effects on the takeoff and landing maneuvers for the following factors when designing the T6 test:

(1) Aircraft weights.

(2) Aircraft center of gravity.

(3) Takeoff and landing crosswinds.

d. Successful Test. The FSB members decide the outcome of T6 consistent the FAA Practical Test Standards (PTS) demonstrating that an equivalent level of safety can be maintained when full or partial credit for takeoffs and landings is given between the related aircraft.

e. Failure of Test. The test subjects' performance relative to the FAA PTS demonstrates an equivalent level of safety cannot be maintained when either full or partial credit for takeoffs and landings is given between the related aircraft.

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