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FLIGHT STANDARDIZATION BOARD REPORT

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Boeing

B737-100, -200, -300, -400, -500, -600, -700, -800, -900,

-900ER

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REVISION RECORD

REVISION NO. 12	DATE: MM/DD/YYYY
SECTION(S)/PARAGRAPH	CHANGE
Whole Document	The term “variant” has been replaced with “series” as the term is no longer referenced or defined in AC 120-53A. References to FAA Order 8400.10 have been updated to FAA Order 8900.1.
3. “COMMON REQUIREMENTS”	New title to replace “MASTER COMMON REQUIREMENTS (MCR)” as “COMMON REQUIREMENTS.” MCR was eliminated and not defined in AC 120-53A.
3.1 Common requirements for all B737s.	
3.1.3 “No Flap Approach”.	Inserted the necessity to use non-normal procedures requiring less than Flaps 15 with full leading edge devices. Although Flaps 15 are generally used in non-normal situations the No Flap approach and landing requirement is best satisfied with lower flap settings as Flaps 15 is used extensively in most training programs during the OEI training.
3.1.6 “Tuck and Mach Buffet” Training.	Added new paragraph stipulating the need for Mach Tuck training is nonexistent for the -300 through -900ER series aircraft.
6. FSB SPECIFICATIONS FOR TRAINING	
6.1 General	
6.1.6 Common Display System (CDS).	Edited for current content based on T3 testing for transitioning from CDS EFIS/Map to PFD/ND.
6.1.16 Global Navigation Satellite Systems Landing System (GNSSLS) or Global Positioning System Landing	Updated information about MMR’s with respect to RTCA and SARPS Compliance. As the use of GNSSLS / GLS has

System (GLS).	become more prevalent it has demonstrated itself to be identical in crew procedures and techniques to an ILS. Therefore, the FSB has removed any SLF and/or FTD training requirements for differences.
6.1.17 Required Navigation Performance (RNP) instrument approach procedures with Special Aircraft and Aircrew Authorization Required (SAAAR).	Added paragraph in response to Boeing receiving manufacturer's approval of RNP/SAAAR operations.
6.3 Differences Training.	
6.3.9 PFD/ND differences.	
6.3.9.1 Exception to 6.3.9.	Added information after successful completion of T3 testing of EFIS/MAP to PFD/ND interactive CBT.
8. FSB SPECIFICATIONS FOR CURRENCY	
8.1 Currency (Recency of Experience) - FAR 121.439.	
8.1.1 General.	Deleted reference to AC 120-53 definition of "Mixed Fleet Flying."
8.2 Re-Establishing Currency Related to Differences.	
8.2.3 Re-establishing Level C, C*, or D Currency.	Revised reference to AC 120-53A, Appendix 2.
MASTER DIFFERENCE REQUIREMENTS (MDR) TABLE	T3 testing IAW AC 120-53A resulted in changing the differences levels for CDS EFIS to PFD/ND in the B-737-600 thru -900 from D/C/C to C/B/A*. PFD/ND to EFIS remains as D/C/C. There were no identified currency issues during the testing period requiring tracking. Flight crews should maintain their knowledge level through periodic (no specific timeframe) reviews of their manuals and training materials. Due to some confusion of the word "model" it has been replaced with "series." The standard references within Flight Standards relating to aircraft is "Make/Model/Series" such as B737-700.
APPENDIX 2	

ACCEPTABLE ODR TABLES	Added 737-700 EFIS/MAP TO 737-700 PFD/ND OPERATOR DIFFERENCES REQUIREMENTS TABLE
APPENDIX 3	
AIRCRAFT COMPLIANCE CHECKLISTS	
MISCELLANEOUS ADVISORY CIRCULARS	Reformatted list to table format and added AC 90-101, Approval Guidance for RNP Procedures with SAAAR
APPENDIX 7	
TRAINING PROGRAM NECESSARY INFROMATION	
FLIGHT CREW MONITORING DURING AUTOMATIC FLIGHT	Added Appendix for necessary training focus during Automatic Flight Training

1. PURPOSE AND APPLICABILITY

1.1 This FSB report specifies FAA master training, checking, and currency requirements applicable to crews operating B737 Model Aircraft under FAR 121and 125. The report also addresses certain issues regarding B737 aircraft operating other than under Part 121 or 125 (e.g. Type Rating Designation). Provisions of the report address B737 series to:

a) Assign the same pilot "type rating" to all B737 series.
b) Describe Common Requirements applicable to all B737 series aircraft.
c) Describe "Master Difference Requirements" for crews requiring differences qualification for mixed-fleet-flying within, between, or among series groups or transition within, between, or among series groups.
d) Provide examples of acceptable "Operator Difference Requirement (ODR)" tables.
e) Describe acceptable training program and device characteristics when necessary to establish compliance with pertinent MDRs.
f) Set checking and currency standards including specification of those checks that must be administered by FAA or operators.
g) List regulatory compliance status (compliance checklist) for the B737 for FARs, Advisory Circulars, or other operational criteria for information of FAA field offices.

1.2 This report includes:

a) Minimum requirements that must be applied by FAA field offices, (e.g. Common Requirements, MDRs, Type Rating designations, etc.),
b) Information which is advisory in general, but may be mandatory for particular operators if the designated configurations apply and if approved for that operator (e.g. MDR footnotes, acceptable ODR tables), and
c) Information which is used to facilitate FAA review of an aircraft type or series proposed for use by an operator (e.g. compliance checklist for FAA Field Office use,...)

Various sections within the report are qualified, as to whether compliance is required considering the provisions of AC 120-53 (as amended), is recommended, or is advisory in nature.

1.3 This report addresses B737 series including: B737-100, -200, -200C, -300, -400, -500, -600, -700, -800, -800SFP, -900, -900ER and -700 IGW (see FAA Type Certificate Data Sheet **A16WE, Revision 43, April 23, 2009**.) Series groups are identified as:

a) B737-100/-200
b) B737-300/-400/-500
c) B737-600/-700/-800/-900

NOTE: The B737-700 IGW includes the Boeing Business Jet (BBJ 1 & 2), the -700 Convertible, and the Navy -700 aircraft. The BBJ 1 & 2 are -700 or -800 series with PFD and HUD displays. The BBJ-3 is a -900ER with PFD and HUD displays. The strictly military versions, e.g. Navy's P-8 and the Airborne Early Warning and Command (AEW&C) aircraft, do not qualify for a B737 pilot type rating and are therefore not discussed in this report.

1.4 Revision 12 addresses:

1.4.1 Expands the description of the Common Display System (CDS) certified in the -600 through -900 series group and provides a change to the Training/Checking/ Currency requirements of EFIS to PFD/ND displays for this series group (see Appendix 1, MDR Table),

1.4.2 Eliminates the term "variants" as this term was eliminated and not defined in AC 120-53A. This report establishes a new title to replace "MASTER COMMON REQUIREMENTS (MCR)" as "COMMON REQUIREMENTS." MCR was also eliminated and not defined in AC 120-53A.

1.4.3 Describes requirements associated with AC 90-101, Approval Guidance For RNP Procedures with SAAAR for the -600 through -900 series group.

All Previous B737 reports are superseded. Provisions of this report are effective until amended, superseded, or withdrawn by subsequent FSB determinations.

2. PILOT "TYPE RATING" REQUIREMENTS

Type Rating. In accordance with the provisions of FAR 1, 61, and 121, the same pilot "Type Rating" is assigned to all B737 series, and is designated "B737".

3. "COMMON REQUIREMENTS"

3.1 Common requirements for all B737s.

3.1.1 Landing Minima Categories, FAR 97.3. All operators should comply with 14 CFR Section 97.3 and use an approach category appropriate to the speed of V_{REF}. Air carriers may be further restricted by their operations specifications for circling approaches.

3.1.1.1 V_{REF} above refers to the speed used in establishing the approved landing distance under the airworthiness regulations constituting the type certification basis of the airplane, regardless of whether that speed for a particular airplane is 1.3 V_{SO} (means the stalling speed or the minimum steady flight speed in the landing configuration), 1.23 V_{SR} (means reference stall speed), or some higher speed required for airplane controllability.

3.1.1.2 Due to the numerous maximum landing weight options among the B737-600 through -900ER series group, determining an aircraft approach category may be done using the certificated maximum flap setting of 40 and the particular aircraft's AFM maximum certificated landing weight.

3.1.2 Flap Settings. For compliance with 14 CFR section 91.126(c) the minimum certificated landing flap setting is considered Flaps 30. Although Flaps 15 is a certificated landing flap setting, its use is primarily for non-normal situations (e.g. engine out approach) or atypical operations (e.g. high altitude airport operations).

When required, Flaps 40 may be used to minimize landing speed and distance if performance criteria are met.

3.1.3 "No Flap Approach". Training and checking applicable to B737 aircraft does not require demonstration of "no flap/no slat" approaches, if other flap non-normal procedures are addressed. Non-normal procedures should address situations for less than Flaps 15 with full leading edge devices extended. Completion of a demonstration in any B737 series suffices for any other series.

3.1.4 Landing Maneuver. Certification Flight Testing applicable to the B-737-800SFP demonstrated the presence of higher than normal nose gear sink rates (i.e. Landing De-rotation). To accommodate having the least impact on industry training the landing maneuver for all B-737's requires the PF "Fly the nose wheels smoothly onto the runway without delay. ... Do not attempt to hold the nose wheels off the runway."

3.1.5 Intermittent Warning Horn. All B-737 models have an intermittent warning horn that alerts the flight crew to a loss of cabin pressurization when cabin pressure reaches 10,000 feet in flight, or alerts them to an incorrect takeoff configuration on the ground. Flight crews must be trained and checked on the proper response to both situations in accordance with QRH procedures WARNING HORN – CABIN ALTITUDE OR CONFIGURATION and CABIN ALTITUDE WARNING OR RAPID DEPRESSURIZATION (See Appendix 6). Experience has shown it is imperative for crew members to immediately don oxygen masks when the intermittent horn sounds in flight.

3.1.6 "Tuck and Mach Buffet" Training. B-737-300 through -500 and -600 through -900ER series groups do not exhibit any Mach Tuck tendency and therefore no training is required for this Flight Maneuver.

3.2 No other special or unique requirements common to all B737s are identified beyond those provided by FARs 61, 91, 121, and 125.

4. "MASTER DIFFERENCE REQUIREMENTS" (MDRs)

4.1 Requirements for particular B737 Series Combinations. Master Difference Requirements (MDRs) for series of the B737 is shown in Appendix 1. These provisions apply when differences between series exist which affect crew knowledge, skills, or abilities related to flight safety (e.g. Level A or greater differences).

4.2 MDR Footnotes. Footnotes to MDR requirements define acceptable "required means" or "alternate means" of compliance. A footnote can indicate requirements that are less restrictive than the basic designation or more restrictive than the basic designation depending on the significance of the differences between particular series.

4.3 Terminology. The term "must" is used in this report and certain MDR footnotes even though it is recognized that this FSB report, and the Advisory Circular (AC 120-53) on which it is based, provides one acceptable means, but not necessarily the only means of compliance with FAR 121 Subpart N and O requirements. This terminology acknowledges the need for operators to fully comply with FSB report MDR and ODR provisions, if this AC method is to be applied as that operator's means of compliance with FAR 121 or 125. Operators who choose this method must comply with each applicable MDR provision including footnotes. **Partial, or selective application of the process or its provisions, does not constitute an acceptable means of compliance with the requirements outlined in AC 120-53, under FAR Part 121 or Part 125.**

5. ACCEPTABLE "OPERATOR DIFFERENCE REQUIREMENTS" (ODR) TABLES

5.1 ODR tables - Used to show an operator's compliance method. Acceptable ODR tables for operators conducting mixed fleet flying, using a particular combination of B737 series, are shown in Appendix 2. The ODR tables represent an acceptable means to comply with MDR provisions for this combination of aircraft, based on differences and compliance methods shown. The tables do not represent an acceptable means of compliance for operators with aircraft having other differences, or where compliance methods (e.g. devices or simulators) are different.

5.2 Operator Preparation of ODR Tables. Operator's "mixed-fleet flying" s must have approved ODR tables. Operators flying mixed B737 series similar to those covered by the acceptable ODR tables shown in appendix 2, may use those tables. Operators with differences not shown on, or addressed by, the tables of Appendix 2, or operators seeking different means of compliance, must prepare and seek FAA approval of specific ODR tables pertinent to their fleet.

5.3 ODR Table Coordination. Unless the FAA has previously approved identical or equivalent ODR tables, new ODR tables proposed by operators must be coordinated with the FSB prior to FAA approval and implementation. By coordination, the FSB ensures consistent treatment of series between various operators, and compatibility of each ODR table with MDR provisions.

5.4 ODR Table Distribution. Original approved ODR tables are retained by the operator. Copies of approved ODR tables are retained by the Certificate Holding District Office (CHDO). Copies are also forwarded to the B737 FSB Chairman, Seattle AEG.

5.5 B737 Mixed-Fleet Flying. The definition of "Mixed-Fleet Flying" for B737 series is as specified in AC 120-53. Typical examples of B737 Mixed-Fleet Flying include situations in which crews alternately fly series of the B737 within a bid period or between PC/PT events as follows:

a) B737-200 and B737-300.

b) B737-100, B737-200, and B737-200 ADV.
c) B737-300, and B737-500.
d) B737-300 EFIS and B737-300 non-EFIS.
e) B737-300, and B737-700.
f) B737-200 ADV with AFCS differences.
g) B737-200ADV, B737-300/500 non-EFIS, B737-800 PFD/ND.

6. FSB SPECIFICATIONS FOR TRAINING

6.1 General

6.1.1 Assumptions Regarding the Previous Experience of Airman. The provisions of Section 6 of this report apply to programs for experienced airmen (e.g. airmen who have previous experience in FAR 121 or 125 air carrier operations, former military, commuter, or corporate pilots with turbine powered aircraft experience, etc...). For airmen not having such experience (e.g. recent "ab initio" program graduates), additional requirements may be necessary as determined by the POI, FSB, and AFS-200.

6.1.2 B737 individual programs. Numerous training programs for any one B737 series alone are already FAA approved. Principal Inspectors of operators initially introducing a B737 may approve programs consistent with programs previously approved for any one series (e.g. an operator introducing a fleet of B737-300s with no differences between any of the individual aircraft). However, when such programs are approved, operators should be aware that if series are to be added or differences are to be introduced, ODR table development and FAA approval is necessary prior to operation of those aircraft with differences. For information regarding previously approved programs, FAA Principal Inspectors of other existing B737 operators may be consulted. In the event of uncertainty regarding evaluation of a proposed program, the FSB should be consulted.

6.1.3 B737 programs having more than one series. Programs with more than one series of B737 require differences training programs meeting criteria specified by MDR tables, or must have alternate approval as prescribed by Section 12. Operators show that specific programs meet MDR requirements through preparation of, FAA approval of, and compliance with ODR tables. An example of acceptable differences training program for a B737-200/B737-300 integrated fleet is provided in the ODR tables of Appendix 2.

6.1.4 Differences Training Program for a B737 mixed fleet. Any B737 mixed fleet program that is less comprehensive than the programs shown in Appendix 2 should not be approved without coordination with the FSB. The differences programs of Appendix 2 for a B737 mixed fleet assumes a trainee has completed B737 transition or upgrade training for one series and will receive differences training for any other series group. However, differences training for all variations may be included in

initial, transition, upgrade, and recurrent training or as a separate curriculum after completion of training for the first series.

6.1.5 Existing B737 Mixed Training Programs. Less comprehensive programs than Appendix 2 should be reevaluated and will continue to be approved only if equivalence can clearly be established, or other special factors apply. Examples of special factors that may be considered by the FSB include such factors as allowing credit for previous applicable experience (e.g. operators implementing combined B737 fleets who have crews previously qualified on one of the series,...) or increases in the quality or effectiveness of the training process (e.g. new types of training devices,...).

6.1.6 Common Display System (CDS). The common display system supplies information to the flight crew on six flat panel liquid crystal display units (DUs). Each flight crew member position contains an Outboard and an Inboard DU. The center instrument panel contains the Upper DU and the forward of the throttle quadrant is the Lower DU. Outboard and Inboard DUs present all primary flight and navigation information. Primary engine indications are displayed on the upper DU. Two combinations of flight, navigation, and engine instrumentation presentations are available; EFIS/Map and PFD/ND.

6.1.6.1 An EFIS/Map presentation provides electronically all the primary flight and navigation instruments historically presented on analog (round dials with pointers, requires typical T-pattern cross checks) instruments with flat screen EADI and EHSI (emulates as the -300 through -500 flight and navigation instruments) with an added map to monitor flight progress. The EFIS presentation is also interactive with the FMC and is capable of providing continuous flight information in a compacted mode. Engine instrumentation is presented in an analog format on the upper DU. Unless opting for an “over/under” engine instrument display format, the lower DU is generally not used and is considered a “hot” spare.

6.1.6.2 Primary Flight Display / Navigation Display (PFD/ND). The PFD presents all parameters necessary for flight path control with digital tape presentations of airspeed and altitude located on the left and right sides of a larger EADI. A Vertical Speed Indicator is presented to the right side of the altimeter. Below the EADI is a partial EHSI. The ND fills the inboard DU and presents a selectable color display of flight progress.

6.1.6.3 While handling quality aspects of all B-737 series are common, and certain maneuvers such as takeoffs and landings may be credited between series, display format differences may require additional training emphasis. If crew performance marginally meets, or fails to meet practical test standards due to lack of familiarity with a display format, sufficient additional flight training should be provided to assure mastery of basic instrument flying skills with the pertinent display format. When transitioning from CDS EFIS/Map to PFD/ND

in the -600 through -900ER series group the minimum training requirement has been determined through testing to meet C level training.

6.1.7 Flat Panel Displays. Through the Supplemental Type Certificate process, OEM flight instruments for the EFIS and basic instruments installations may be replaced with a digital Flat Panel Displays resembling the CDS. Training required for these installations should be provided to assure mastery of basic instrument flying skills with the pertinent display format.

6.1.8 Heads Up Display (HUD). If Heads Up Displays are installed and used, training in accordance with Appendix 4 or equivalent should be provided. If mixed flying of HUD and non-HUD equipped aircraft occurs, the operator should have approved ODR tables reflecting the HUD installation.

6.1.9 Automatic Landings. If an operator conducts automatic landings in a B737 then appropriate training must occur. This training must be conducted in a B737 simulator or airplane. Due to the differences among B-737 autoland systems, this training must occur in B-737 equipped with the appropriate autoland autopilot systems (i.e. Fail Operational vs. Fail Passive). The training must ensure appropriate AFM limitations are addressed and complied with.

6.1.10 Hazardous Weather/Winter Operations. Proper precautions and procedures regarding hazardous weather/winter operations should be addressed. For example, training programs should include topics as applicable, such as the following:

a) Manufacturer guidelines for B737 windshear avoidance and recovery techniques, use of minimum V1, and use of improved climb schedules,
b) For certain early model B737s, flight characteristics, if a takeoff with wing icing should inadvertently occur, and
c) For CFM-56 powered B737s, procedures to be used, if inadvertently encountering areas of moderate to heavy precipitation/hail, including proper radar use.

6.1.11 Crewmember Emergency Training, FAR 121.417. Appropriate emergency training must be given to each crewmember on the location, type, function, and operation of emergency equipment that is different in each B737 series. Where equipment is common, instruction may be adjusted for those crewmembers qualified and current on other series, provided records are available which demonstrate that crewmembers meet FAR 121.417 and 121.683(a) requirements. For example, where elements of interior configurations are common, training may be simultaneously credited for series. Conversely, for different emergency equipment, airstairs, doors, aft doors ditching constraints (B737-500), slides, rafts, or other interior configuration elements, even when within the same series (e.g. B737-200 and -200C), training on emergency equipment for each series is required in accordance with MDRs. Training may be accomplished by pictures or videotape, if prior to line operation, adequate knowledge of equipment use is demonstrated to an evaluator for that series in a static aircraft.

6.1.12 Reduced Vertical Separation Minimum (RVSM). Operations training programs and operating practices and procedures. Practices and procedures in the following areas should be standardized using guidelines published in the "Interim Guidance Material on the Approval of Operations/Aircraft for RVSM Operations" (No. 91-RVSM), dated 6/3/99. Flight planning, preflight procedures in the aircraft for each flight, procedures prior to RVSM airspace entry, inflight procedures, and flightcrew training procedures are found in Appendix 4 of the No. 91-RVSM document. Appendix 4, paragraph 7 contains special emphasis items for flightcrew training. Also pilots, and where applicable, dispatchers should be knowledgeable on contingency and other procedures unique to specific areas of operation. (See the appendices for guidance on such procedures. Appendix 5, for example, contains guidance on oceanic contingency procedures).

FAR Part 121 and 125 Operators. Such operators should submit training syllabi and other appropriate material to the FAA to show that the operating practices and procedures and training items related to RVSM operations are incorporated in initial and, where warranted, recurrent training programs. (Training for dispatchers should be included, where appropriate).

FAR Part 91 Operators and Part 125 Operators holding a deviation that allows operation under Part 91. These operators should demonstrate to the FAA that pilot knowledge of RVSM operating practices and procedures will be adequate to warrant granting of approval to conduct RVSM operations. The operator must show the FAA that its pilots will have adequate knowledge of the RVSM operating practices and procedures contained in Appendices 4 and 5 of the No. 91-RVSM document.

6.1.13 Extended Range Operation with Two Engine Airplanes (ETOPS). B737-200/-300/-400/-500 aircraft are approved for 120-minute ETOPS operations. B737-600/-700/-800/-900 aircraft are approved for 180-minute ETOPS operations. Airlines operating ETOPS under FAA rules are required to comply with the provisions of Advisory Circular 120-42 (as amended). An airline must have an ETOPS configured airplane, flight operations and maintenance programs in place to support ETOPS operations. AC-120-42 (as amended) provides an acceptable means, but not the only means, to develop a flightcrew training and evaluation program.

6.1.14 Selected event training. Selected event training is voluntary flight training in hazardous inflight situations, which are not specifically identified in FAA regulations or directives. Although there are many examples of selective event training, the training and recovery from unusual attitudes has received special attention from the National Transportation Safety Board (NTSB), the FAA and industry. In addressing these concerns, a consensus has been reached that the most valuable training would not necessarily be limited to unusual attitude recovery, but would also address recognition and containment that might lead to unusual attitudes.

The goal of upset recovery training is to increase the pilot's ability to recognize and avoid situations that can lead to airplane upsets and improve the pilot's ability to

recover control of an airplane that has exceeded the normal flight regime. This can be accomplished by increasing awareness of potential upset situations and knowledge of flight dynamics and by application of this knowledge during simulator training sessions.

It is highly recommended that each operator or flight training center develop an effective academic and practical upset simulator training program. For those organizations that do not have or are in the process of creating a complete training program, the *Airplane Upset Recovery Training Aid*, developed by industry and published for the FAA will readily provide the foundation for a through and efficient program.

6.1.15 Tail strike emphasis. Each operator's training program should address tail strike potential during takeoff and landing. The B-737-400/-800/-900 aircraft are most susceptible to tail strike due to their increased fuselage lengths.

6.1.15.1 Two Position Tail Skid. The -900ER and -800 SFP have a dual tail skid configuration that enables the skid to protect the airplanes aft body during landing maneuvers (the dual tail skid is optional for the -800SFP). Approach speeds may be reduced with the protection provided by the two-position tail skid. Resultant approach speeds and attitude of the -800SFP with the two position tail skid is similar to that of the 737-700.

6.1.16 Global Navigation Satellite Systems Landing System (GNSSLS) or Global Positioning System Landing System (GLS). This section is relevant to B737-600/ -700/-800/-900 aircraft equipped with certified Multi-Mode Receivers (MMR). The MMR's are designed to be compliant with RTCA DO-253B and the airborne functional requirements included in ICAO Standards and Recommended Practices (SARPS) for GBAS. Consequently, the airborne equipment will operate properly when used with a SARPS compliant GBAS ground systems. SARPS define the characteristics of a Ground-Based Augmentation System (GBAS) that calculates corrections for all the satellites that meet specified in-view criteria and transmits that information to the aircraft over a VHF Data Broadcast (VDB) data link.

The MMRs process the correction and FAS (final approach segment) data to produce an ILS "look-alike" deviation indication from the final approach path. These deviations are then displayed on the pilot's flight instruments (e.g., Primary Flight Display [PFD]) and are used by airplane systems such as the flight guidance system (e.g., autopilot and flight director) for approach guidance.

Training for flight crews current in B737-600/-700/-800/-900 aircraft is established at Level A. Training should ensure an understanding of GLS fundamentals and operating procedures to include as a minimum: Mode Control Panel (MCP) Mode Selection, Annunciation, Descent, Approach, and Flight Deck Failure Alert procedures.

With only two minor exceptions, GLS approach procedures and techniques are identical to those of an ILS approach. An ILS uses a radio frequency whereas the GLS is a channel on the MMR. Instead of ILS the navigation reference on the PFD is GLS. MCP mode selection uses the same flight crew actions for both approaches.

This section defines training only and does not constitute operational approval for conducting GLS or LAAS approaches.

6.1.17 Required Navigation Performance (RNP) instrument approach procedures with Special Aircraft and Aircrew Authorization Required (SAAAR). Operators need approval to conduct RNAV (RNP) SAAAR instrument approach procedures. They are responsible to determine equipment needed, procedures, and training requirements based on AC 90-101 (as amended) specific to their operations. These requirements are submitted to their principal inspector(s) for approval. Operators are encouraged to develop an approach review/briefing card for use by flight crews when conducting any RNAV (RNP) operation.

This section is relevant to B737 series aircraft equipped with certified General Electric Flight Management System (GE FMS) with an approved software version. The latest version of the applicable AFM, Section 3, FLIGHT MANAGEMENT COMPUTER SYSTEM (FMCS) must be consulted for applicable demonstrated RNP capability.

6.1.17.1 Ground Training for flight crews current in B737-300 through -900 series aircraft is established at Level C and may be administered via Computer Based Training and should include subjects required by AC 90-101 (as amended). Subjects evaluated for this report were outlined in AC 90-101, Appendix 5, paragraph 1.a.(1), dated 12/15/2005.

6.1.17.2 Flight Training for flight crews current in B737-300 through -900 aircraft is established at Level D. The operator may conduct required flight-training modules in Flight Training Devices (minimum of level 5) that replicate the operator’s equipment and RNP SAAAR approach operations.

6.2 Initial, Upgrade, or Transition Training

6.2.1 Pilots: Initial, Transition and Upgrade <u>Ground</u> Training, FAR 121.419. Initial, transition, or upgrade ground training for the B737 is accomplished in accordance with FAR 121 and/or SFAR 58 (AQP). No unique provisions or requirements are specified. However, when more than one series is flown, appropriate instruction in systems differences will be required for each series, consistent with MDR provisions. Training program hours may be reduced as specified in FAR 121.405, but not in a way that invalidates compliance with provisions of MDRs, as determined by FAA.

6.2.2 Pilots: Initial, Transition and Upgrade <u>Flight</u> Training, FAR 121.424. Initial, transition, or upgrade flight training for the B737 is accomplished in accordance with FAR 121 and/or SFAR 58 (AQP). When initial, transition, or upgrade flight training

and practice specified in FAR 121.424 is accomplished, and several series are to be flown, flight training is to suitably address each series. Training program hours may be reduced as specified in FAR 121.405, but not in a way that invalidates compliance with provisions of MDRs, as determined by FAA.

6.2.2.1 Emphasis training on QRH procedures for WARNING HORN – CABIN ALTITUDE OR CONFIGURATION and CABIN ALTITUDE WARNING OR RAPID DEPRESSURIZATION must address the nature of the onset of hypoxia and the need for crew members to immediately don oxygen masks when the intermittent horn sounds in flight. Training scenarios need to be structured such that crew members associate the horn in flight with loss of cabin pressure. Therefore, they must contain pressurization loss events not associated with sounds other than the horn, e.g. burst of air during a rapid depressurization.

6.2.3 Pilots: Initial Training for Applicants NOT EMPLOYED UNDER FAR 121. The training program must be conducted in a series of the same group that will be used for the type rating evaluation.

6.2.3.1 Emphasis training on QRH procedures for WARNING HORN – CABIN ALTITUDE OR CONFIGURATION and CABIN ALTITUDE WARNING OR RAPID DEPRESSURIZATION must address the insidious nature of hypoxia and the need for crew members to immediately don oxygen masks when the intermittent horn sounds in flight. Training scenarios need to be structured such that crew members associate the horn in flight with loss of cabin pressure. Therefore, they must contain pressurization loss events not associated with sounds other than the horn, e.g. burst of air during a rapid depressurization.

6.3 Differences Training.

6.3.1 Differences Training General, FAR 121.418. Unless an initial or transition program is completed for each series, differences' training is necessary for each B737 series as shown in the MDR. A training program addressing pertinent differences described by individual operator ODRs, including normal, non-normal, and alternate operations, is required for each series flown. Samples of acceptable programs for differences are shown in Appendix 2.

6.3.2 Differences Ground Training. Differences Ground Training in the topics applicable to the pertinent series group or groups and shown by sample ODR tables or the equivalent is required. When Level C or greater training is required by MDRs between two or more series, comprehensive treatment of the topics specified in the ODRs is required. Approval of reductions below levels validated by the FSB, under the provisions of FAR 121.401(d) or 121.405(d), by Principal Inspectors, should be coordinated with the FSB and made only when equivalence can clearly be established (e.g. based on credit for previous applicable experience - FMS, engine model, etc., or increasing the quality and effectiveness of the training process).

6.3.3 Differences Flight Training. Differences Flight Training is required in the topics/maneuvers at or above Level C as shown by sample ODR tables or equivalent tables. When such maneuvers are accomplished, the objective is to develop knowledge of systems and procedural skills necessary to safely operate the series aircraft (e.g. proper use of FMS). The operating experience requirements shown in paragraph 6.5 apply to this paragraph.

6.3.4 Engine Intermix. Engine intermix operations (e.g. Pratt & Whitney JT8D with different levels of rated thrust) are acceptable as specified by the AFM and the engine type data sheet. If engine intermix limits and performance are clearly addressed (Vmcg, airport analysis, FAR 121.189 obstacle clearance, etc.), and this information is readily available to the flight crew and easily interpreted, then Level A/A/A is acceptable.

6.3.5 Mixed flying of Passenger and Combi Series. Within the same series (e.g. B737-200 passenger and combi configurations) or different series (e.g. B737-300 passenger and B737-200 combi) passenger or combi series requires a minimum of level A/A/B to address passenger/combi features. This is appropriate due to differences in exits, fire protection provisions, emergency evacuation and other items. Prior to FAR 121 use of B737 “combi” series, POIs must coordinate “designated fire fighter” training requirements with the FSB (see Appendix 5).

6.3.6 Credit for SP300/SP177 Autopilot Experience During Training. MDR Tables specify Level C* between certain series groups equipped with SP300 and SP177 autopilot. Crews qualified and current using the SP300 may be credited for this experience when completing differences training for the SP177 autopilot, or vice versa. However, mode annunciation differences and any differences in interfaces with other systems such as PDCS, PMS, or FMS must still be addressed.

6.3.7 FMS Training as relates to differences programs. When Level C or greater requirements are shown for differences training due to FMS, training must include “hands-on” training with the Flight Management System (FMS). The FMS is considered to include the Inertial Reference System (IRS), the Flight Management Computer (FMC), Control Display Units (FMS CDU), mode annunciation, the autopilot, autothrottles, and flight instrument displays. Comprehensive treatment of FMS typically requires a <u>minimum</u> of 8 programmed hours of “hands-on” instruction. Approval of reductions below 8 programmed hours, under the provisions of FAR 121.401 (d) or 121.405 (d), by Principal Inspectors, should be coordinated with the FSB and made only when equivalence can clearly be established (e.g. based on credit for previous applicable experience - similar FMS in different aircraft, etc., or increasing the quality and effectiveness of the training process).

6.3.8 PDCS/PMS/EEC Differences. When applicable, PDCS/PMS/EEC Differences must be addressed between series. Level B/A/B is acceptable for differences between PDCS, PMS and EEC aircraft or vice versa. POIs may permit credit for prior

PDCS/PMS/EEC experience by reducing the amount of Level B or greater training needed.

6.3.9 PFD/ND differences. Level D requirements are shown for differences training, which includes a minimum of 12 hours in an interactive or CBT (Computer Based Training) and 6 programmed hours in a level 6 FTD. For individuals with EFIS experience, a LOFT mission (4 hours) may be substituted for the two legs of supervised line flying in an aircraft following training as required by paragraph 6.5. Approval of reductions below these requirements, under the provisions of FAR 121.401 (d) or 121.405 (d), by Principal Inspectors, should be coordinated with the FSB and made only when equivalence can clearly be established (e.g. based on credit for previous applicable experience - similar PFD/ND in different aircraft, etc.).

6.3.9.1 Exception to 6.3.9. An exception to the above requirement was successfully tested and may be implemented without further concurrence with the FSB. Pilots trained and qualified in the B737-600 through -900 series group with EFIS/MAP may be trained using a self paced interactive CBT program that demonstrates all capabilities of the PFD without the necessity for FTD or LOFT. ND is an expansion of MAP and the CBT need only demonstrate the differences in display selections and capabilities (e.g. Center Map).

6.4 Recurrent Training

6.4.1 Recurrent Training, FAR 121.427. Recurrent training must include appropriate training in accordance with FAR 121.427 for each series (e.g. B737-100, B737-200ADV, B737-300,...). Recurrent training must be in accordance with the initial differences training specified by MDR and ODR tables unless otherwise approved by the POI.

6.4.2 Recurrent Ground Training Time Reductions. If recurrent ground training is reduced below programmed hours required in FAR 121.427(c), in accordance with FAR 121.405, such reductions must be consistent with MDR and ODR table provisions.

6.4.3 Recurrent Flight Training. Recurrent flight training requires appropriate maneuvers and procedures identified in FAR 121 Appendix E or as otherwise described in this report or be approved for an AQP in accordance with SFAR 58. Maneuvers and procedures addressed must account for each series group operated. ODR table provisions identify differences in maneuvers or procedures between series, which must be addressed in the operator's recurrent program. As permitted by FAR 121.427(d)(1)(ii), satisfactory completion of a proficiency check, in accordance with FAR 121 Appendix F, may be substituted for training.

6.4.3.1 Emphasis training on QRH procedures for WARNING HORN – CABIN ALTITUDE OR CONFIGURATION and CABIN ALTITUDE WARNING OR RAPID DEPRESSURIZATION must address the insidious nature of hypoxia and

the need for crew members to immediately don oxygen masks when the intermittent horn sounds in flight. Training scenarios need to be structured such that crew members associate the horn in flight with loss of cabin pressure. Therefore, they must contain pressurization loss events not associated with sounds other than the horn, e.g. burst of air during a rapid depressurization.

6.4.4 Recurrent Training for Mixed Flying of B737 Series with SP77 and SP177/SP300 autopilot. MDR Footnote (4) requires training for AFCS at Level C between certain series. However, for recurrent training for crews who frequently use both SP77 and SP177/SP300 autopilot, Level B may alternatively be used for the SP77 if Level C training or greater is used for the SP177/SP300 during each recurrent period (Note: For this provision the term "frequently" is considered to be at least several times within each calendar month or bid period, as determined to be acceptable by the POI).

6.4.4.1 When an Enhanced Digital Flight Control System (EFDCS) that supports Fail Operational Autoland operations with a Fail Passive Rollout system are used, the recurrent training programs must address appropriate recurrent training for both single and dual channel autopilot approaches.

6.4.5 When HUD is used, the recurrent training programs must address appropriate recurrent training for both HUD and non-HUD operations (see Appendix 5).

6.4.6 Recurrent Training Level Adjustments. The FSB will consider proposals to establish recurrent differences training at levels other than for the initial differences training on a case by case basis. Requests for changes should be made to the FSB through the POI. If the FSB accepts different levels for recurrent training, and AFS-200 approves those changes, such provisions are identified in the body of the FSB Report or in amended MDR footnotes.

6.5 Operating Experience for Flying Multiple Series (AC120-53, as amended, or FAR 121.434). Except as described below, FAR 121.434 OE may be accomplished in any B737 series. Additional Supervised Line Flying (SLF) must be accomplished IAW the table below for those flightcrews flying the series listed.

When differences training relates to qualification for FMS, operating experience must also include use of FMS. Such FMS required operating experience pertinent to each flight crewmember must be obtained while serving in a flight crew position and include FMS operation. However, Line-Oriented Flight Training (LOFT) involving FMS operation in an appropriately configured Level C or Level D simulator may be substituted.

When differences training relates to qualification for PFD/ND, operating experience must also include use of PFD/ND. Such PFD/ND required operating experience pertinent to each flight crewmember must be obtained while serving in a flight crew position and includes PFD/ND operation. For flight crewmembers with previous EFIS experience, Line-Oriented Flight Training (LOFT) involving PFD/ND operation in an

appropriately configured training device or simulator (minimum of a level 5 FTD), may be substituted.

SUPERVISED LINE FLYING

FROM AIRPLANE

TO AIRPLANE	B737-100/-200	B737-300/-400/-500	B737-300/-400/-500 EFIS	B737-600/-700/-800/-900
B737-100/ -200	x	2/5	2/5	2/5
B737-300/ -400/-500	2/5	x	2/5	2/5
B-737-300/ -400/-500 EFIS	2/5	2/5	x	2*
B-737-600/-700/-800/-900	2/5	2/5	2*	x

1) HUD currency may substitute for some EFIS training.
2) * Legs of LOFT in a simulator or level 5 FTD may be substituted.
3) SLF must be accomplished by a flight instructor or check airman.
4) 2/5 = minimum of 5 hours of operating experience which includes 2 flight segments.

6.6 Other Training

6.6.1 LOFT Programs, FAR 121.409(b)(3). When operators have LOFT programs, POIs should review those programs to assure their suitability for the series flown. If simulators used for LOFT have differences from the series actually flown, LOFT credits will be reduced or eliminated if such differences are determined to have a significant adverse effect on the effectiveness of LOFT.

6.6.2 Flight Attendants: Initial and Transition Ground Training, FAR 121.421. Due to similarities in cabin configuration, flight attendants may be qualified in all B737 series group. Such qualification, however, must address any differences in exits, slides, communications, or emergency equipment when common qualification applies.

6.6.3 Aircraft Dispatchers: Initial, Transition and Recurrent Training, FAR 121.422 and 121.427. POIs must assure that operators comply with FAR 121.422(a)(2)(i) through (vi) for each series operated as follows: any differences in performance, weight & balance, procedures, limitations (e.g. MMEL, Cat IIIa, ER capability, or similar differences). Dispatchers must be trained to suitably address those differences. Records should be kept that indicate which series dispatchers are qualified.

7. FSB SPECIFICATIONS FOR CHECKING

7.1 General.

7.1.1 Checking Items. Knowledge, procedures, and maneuvers specified by FAR 61, FAR 121, Appendix F, FAA Order 8900.1, FAA Practical Test Standards (PTS) or SFAR 58 evaluations pertinent to multi-engine turbojet transport aircraft apply to all B737 series. FAR 121, checking items are accomplished as specified by MDRs and ODRs to qualify in pertinent B737 series. Because of significant differences, which exist between certain B737 series combinations, for operations under FAR 91 or 125, checks equivalent to that specified for FAR 121 may be appropriate as specified in 7.2.3.

7.1.2 Areas of Emphasis. The following areas of emphasis should be addressed during checks as necessary:

a) Proficiency with manual and automatic flight in normal and non-normal situations must be demonstrated. Crews not experienced with AFCS, must demonstrate proper mode selection and use, crew coordination when performing mode or data changes, and interpretation of annunciations. Crews familiar with AFCS and/or FMS but not having recent experience with older generation flight instruments, navigation, manual capture of altitudes, raw data approaches, tracking of VOR radials/NDB bearings using an RMI and other such systems or procedures, may require additional practice or review.

b) Proper outside visual scans without prolonged fixation on cockpit displays or controls should be consistently demonstrated.
c) On EFIS and CDS aircraft (EADI/EHSI displays), proper setup, selection, and use of those displays should be demonstrated.
d) Proper accomplishment of procedures not commonly found on other transport aircraft such as the need to retract flaps following engine failure during approach is required.
e) Proper speed management and control application during rotation and flare to preclude tail strikes on some series is required.
f) When noise abatement procedures other than as specified in AC 91-53 are used, proper performance of the alternate procedures should be addressed.
g) Aircraft and operators approved for ETOPS, HUD, RNP, RVSM, EGPWS or other specialized operations, proper application of the appropriate corresponding procedures is required.
h) Occasionally fly LOFT missions using MEL relief, such as no autopilot, FMC failure, compacted DU, etc.

7.1.3 "No Flap/No Slat" Approach. "No Flap/No Slat" approaches are not required for B737 series if flap non-normal procedures are addressed (see paragraph 3.1.3).

7.2 Type Ratings.

7.2.1 Oral and Written Tests. Unless otherwise specified by ODR tables, an oral or written portion of a type rating practical test need only address the B737 series to be flown or to be used for conduct of the test, as determined by the inspector/examiner conducting the test. If information related to other series are a factor in conducting an oral or written test, the applicant should be advised, not later than the time of application for the test, which other series may be addressed by the test.

7.2.2 Practical Test. Airmen may complete the necessary type rating practical test of FAR 61, FAR 121, Appendix F, FAA Order 8900.1, FAA Practical Test Standards or SFAR 58 evaluations in any B737 series for issuance of a "B737" pilot type rating. However, before airmen serve as PIC under FAR 121 or 125 in a series group other than that in which a type rating practical test was completed, checking for differences in accordance with MDR provisions must be completed. Operators qualifying aircrews in one or more B737 series, and who conduct the "interior/exterior visual preflight inspection" portion of practical tests under provisions of ATA Exemption 4416 (as amended), may apply provisions of that exemption in common to B737 series. However, where crewmembers fly several B737 series and differences exist, such as in location/operation of airstairs/exits, and emergency equipment, operators should account for those differences in a manner acceptable to FAA when applying provisions of Exemption 4416.

7.2.3 Additional Factors for Practical Tests for Applicants <u>Not Employed Under FAR 121</u>. A practical test for an applicant not employed under FAR 121 (e.g. issuance of a

type rating under FAR 61 or FAR 142) must be conducted in a series of the same group that the applicant was trained under.

7.3 Proficiency Checks.

7.3.1 General. Proficiency checks are administered as designated in FAR 61.58, FAR 121.441, FAR 121 Appendix F, or IAW an approved AQP program for a particular B737 series group. Each check should assess knowledge and acceptable levels of skill, considering the series flown and crew position. Proficiency Checks (PC) involving more than one B737 series group is as specified or permitted by MDRs and approved ODRs. When an initial or recurrent proficiency check addresses qualification in more than one B737 series, the check may primarily address one series. However, a sufficient assessment of competency related to other series flown is necessary to ensure the effectiveness of difference qualification. Accordingly, portions of a PC may be accomplished in relevant combinations of B737 devices, simulators, or aircraft. Guidance on specific maneuvers, and devices necessary to address MDR's is provided in ODR table examples of Appendix 2 or by ODR tables of other FAA approved programs.

7.3.2 FMS Demonstration of Competency.

a) FMS Checks. Checking for differences related to a series having FMS must include a demonstration of competency covering both an oral/written exam and demonstration of proficiency with both normal and non-normal procedures. FMS proficiency should be demonstrated with "hands-on" operation, and address each applicable FMS mode or function. Specific items and flight phases to be checked may include initialization, takeoff, departure, cruise, arrival, precision and non-precision approach, missed approach, holding, diversion to an alternate or route reclearance, and pertinent non-normals. Scenarios used should include routes, airports, ATC situations, and other factors, which are representative of, or present equivalent complexity to those anticipated for that operator. FMS competency may be demonstrated in conjunction with other training and/or checking, or be addressed separately.
b) Credit for previous FMS Experience. When an airman being checked has significant previous experience with the same or similar FMS and demonstrates obvious competency with FMS operation, the examiner may waive further demonstration of the items and/or flight phases noted above. In such instances, only FMS features or procedures different from those related to prior FMS experience must be suitably addressed.
c) Checks Using FMS Equipped Training Devices. If an FMS equipped simulator or airplane is not used for a PC, an additional demonstration of proficiency on the FMS using a training device approved for Level C* differences is required (Devices meeting Level C* are defined in section 10.2 a). The device used for such portions of the PC may be the same device used for training.
d) Certification of FMS Proficiency. The demonstration of proficiency must be certified by an authorized instructor, check airman, examiner or FAA inspector.

Certification of knowledge of a crewmember may be done during training, or by completion of an exam using the procedure described in FAR Section 121.401(c).

7.3.3 HUD.

a) When HUD use is approved, checking must include suitable demonstration of HUD use for modes and phases of flight authorized. Checking standards for HUD are equivalent to those for non-HUD operations except for Category III. For Category III, performance equivalent to or better than that demonstrated for manual Category III HUD operations in the original equipment STC, should be shown by each PIC.

b) HUD vs. Flight Director and Raw Data. When HUD is installed, PC maneuvers, LOFT, LOS or other demonstrations may be completed using HUD at the check airman/inspectors discretion. However, periodic assessment of non-HUD skills should be demonstrated, and at any time a check airman/inspector may at their discretion request that authorized maneuvers be performed without use of HUD (e.g. if manual CAT I F/D operations are authorized, the airman being checked may be requested to perform the maneuver without HUD).

7.3.4 Alternating Proficiency Checks for B737-100/200, B737-300/400/500 and B737-600/700/800/900 Series Groups. For mixed-fleet-flying between series groups, proficiency checks should alternate, but are not required to alternate, each six months for PICs, and annually for other flight crewmembers. When such alternating checks are accomplished, the differences assessment of other series within the series group being checked (e.g. either B737-100/200, B737-300/400/500 and/or B737-600/700/800/900) may be satisfied by ground training, written questionnaire, oral review, or other method approved by the POI. However, such simplified programs may not be approved if they result in progressive loss of knowledge or skills related to particular differences over successive recurrent periods.

7.3.5 Mixed-fleet B737 Programs, Which Do Not Alternate Proficiency Checks. If an air carrier is operating a mixed B737-100/200, B737-300/400/500 and/or B737-600/700/800/900 fleet and does not alternate checks between respective series groups, then simulators representative of the most demanding series configuration(s) should be used for each check (e.g. B737-300 simulator with FMS, autoland, etc...). If simulators for the most demanding series are not available, then the check must be supplemented at the level specified in the ODR tables. Checks for differences from other series are addressed through use of training devices or as specified in the MDRs.

7.3.6 Proficiency Checks in Lieu of Training. Satisfactory completion of a proficiency check may be substituted for recurrent flight training as permitted in FAR 121.433(c).

7.3.7 FAR 61.58 Proficiency checks, which do not pertain to FAR 121. Proficiency checks which may be required in accordance with FAR 61.58, but do not pertain to

Part 121 operations, must be administered using the same series, or a series within the same group as the aircraft intended to be flown (e.g. an airman intending to fly a B737-200 should take a proficiency check in a B737-200 aircraft or simulator).

7.3.8 GLS.

a) When GLS use is approved, checking standards are equivalent to those for ILS operations for Category I.

b) GLS vs. ILS. Regulations permitting, when GLS capability is installed, PC tasks, LOFT, LOS or other demonstrations requiring performance of a CAT I ILS may be completed using GLS. However, periodic assessment of the ILS should be demonstrated.

7.3.9 RNP/SAAAR.

7.4 Line Checks, FAR 121.440. Line checks completed in any B737 may satisfy requirements for any other B737 series. However, for incidental reasons separate line checks may be appropriate, such as for FAR 121.443 “special routes or airports”, or other factors which may be unique to a particular B737 series group for that operator.

8. FSB SPECIFICATIONS FOR CURRENCY

8.1 Currency (Recency of Experience) - FAR 121.439.

8.1.1 General. For operations not involving mixed-fleet flying, FAR 121.439 applies directly. In programs involving mixed-fleet flying, compliance with FAR 121.439 will require consideration of additional factors as described below. For such programs approved through ODR tables, currency is in accordance with AC 120-53, MDRs, and approved ODRs. For other programs, currency required by FAR 121.439 is addressed separately for respective B737-100/200, B737-300/400/500 and B737-600/700/800/900 series groups. Regardless of currency method approved, some means for the operator and FAA to assess currency is needed to assure currency objectives are met.

8.1.1.1 Pilots Dual Qualified in B-737 and B-757/767.

a) Acceptable Means of Compliance with the recency of experience requirements of 14 CFR 121.439(a). Pilots who are dual qualified and maintaining dual currency in the B-737 and B-757/B-767 (except the B-767-400) may satisfy the provisions of 14 CFR 121.439(a) by accomplishing three takeoffs and landings in either aircraft each 90 days. See Appendix 2, B-757/767 COMMON LANDING CURRENCY MANEUVER OPERATOR DIFFERENCES REQUIREMENT TABLE.

b) Airman Experience (Prerequisite) Provisions within this section of the report apply to training programs for experienced flight crew members who have previous experience in both 14 CFR Part 121 air carrier operations and multi-engine wide body heavy transport turbojet aircraft. Flight crews not having prerequisite experience shall not use the provisions of this section.

In addition, the following pre-qualification requirements must be met by all flight crew participating in the landing currency provisions prescribed in this section:

1) For B-737 and B-757/767, complete Operating Experience in accordance with 14 CFR 121.434 in both aircraft (B-757/767 and the B-737).
2) A minimum of 150 hours of line experience in both aircraft (B-757/767 and B-737) while serving in a primary crew position.
3) Within 90 days, 3 takeoffs and landings in either aircraft (B-737 or B-757/767), as well as segment currency between the B-737 and B-757/767, must be accomplished.

Note: To reestablish takeoff and landing currency, the requirements of 14 CFR 121.439 must be complied with, except that at least one takeoff and landing must be accomplished in each aircraft or an advanced simulator approved for the takeoff and landing maneuvers.

c) Landing Currency (for the purposes of Common Takeoff and Landing Currency (CTLC)). The B-737 and B-757/767 are considered equivalent. Accordingly, three landings in a 90 day period in any B-737 or B-757/767 model series is considered acceptable for meeting landing currency provisions on all B-737 and B-757/767 model series.

d) Segment Currency between the B-737 and B-757/767 (for the purposes of CTLC). Segment Currency between the B-737 and B-757/767 requires that a minimum of two segments (see segment definition in paragraph 8.1.5) be flown in any B-737 and two in any B-757/767 during a 90 day period. Segment requirements may be increased by the CMO if mission and operational procedures are assessed to be different (e.g. oceanic, polar, ETOPS, etc. vs. short haul domestic routes/operations).

Note: Pilots may not take credit for a segment by serving in a relief capacity during the cruise phase of flight only, regardless of flight time accrued in cruise. A segment may be completed in one flight or by cumulatively completing the necessary phases and maneuvers in more than one flight (e.g. a takeoff, departure and initial cruise may be performed on one long range flight and descent, approach and landing on the next). An approved simulator LOFT scenario is an acceptable alternate to actual flight. An acceptable means of tracking these events must be used.

8.1.2 Level B Currency. A variety of means for establishing compliance with Level B currency for differences have been found acceptable for B737 programs. Examples include the following:

a) Issuance of a bulletin which directs crews to review particular operating manual differences information if a particular series has not been flown within a specified time interval (e.g. Review of limitations and procedures differences).
b) Crew certification on a dispatch release that they have reviewed pertinent information for the particular series to be flown on that trip, within an operator specified time interval.
c) Explicit tracking of currency requirements based on logbook entries, ACARS data, or other reliable administrative records.
d) Recurrent Training/Checking which addresses the features of each pertinent series group during each training or checking event.

8.1.3 Level C Currency. A variety of means for establishing compliance with Level C currency for differences have been found acceptable for B737 programs. Examples include the following:

a) Scheduling of aircraft, or construction of bid lines so that a crewmember does not have a period of time greater than 90 days elapse between trips in that series.
b) Crewmember certification on a dispatch release that it has not been more than 90 days since flying that series.
c) For mixed-flying of series groups, where each series is flown frequently ("frequently" is as specified in 6.4.4), Level C currency periods may be set at 6 months for PICs and 12 months for SICs to be coincident with PC/PT events. Standard "grace month" provisions apply.
d) Administrative tracking of specific requirements based on logbook entries, ACARS data, or other such means.

8.1.4 Level D Currency.

a) Requirement to Complete Three Flight Segments Within 90 Days in Both B737-100/200 and B737-300/400/500 or B737-600/700/800/900 Series Groups. For Mixed-Fleet flying of series of both B737-100/200 and B737-300/400/500 or B737-600/700/800/900 series groups, MDRs specify Level D currency. ODR tables identify the specific items to which this currency provision applies (see Appendix 2 - B737-200ADV to B737-300 ODR Tables). To satisfy MDR and ODR requirements, each flight crewmember must complete at least 3 flight segments, including use of the FMS if installed, in the preceding 90 days in both the B737-100/200 and the B737-300/400/500 or B737-600/700/800/900 series groups. This provision may be met by completing segments in an aircraft within the respective series group, in a simulator, or using a training device acceptable for Level D or above to complete the required items. This additional provision does not alter the general FAR 121.439 requirement to complete 3 takeoffs and landings within 90 days in any B737 series group.

b) Establishing Currency Following Differences Qualification. Level D currency requirements specify at least 3 flight segments within 90 days. However, OE requirements (listed in section 6.5) specify completion of only 2 flight segments following qualification for certain series groups. This distinction exists because OE usually is conducted immediately following a differences qualification program in which other experience is also obtained (e.g. completion of multiple flight segments using a simulator or training device prior to initiating the OE).

8.1.5 Use of the Term "Segment" as Applied to Currency. For the purposes of this FSB report, a segment consists of the following flight phases or maneuvers: Preflight, Start, Takeoff, Climb, Cruise, Descent, Approach, Landing, and Shutdown. Credit for a segment requires that a crewmember serve in the associated cockpit crew position during the necessary flight phases or maneuvers, but does not require the crewmember to physically control the aircraft or autopilot during those maneuvers. For example, both pilots may take credit for a segment even though only one actually controls the aircraft during the takeoff and landing. Pilots may not take credit for a segment by observation from a jumpseat.

8.2 Re-Establishing Currency Related to Differences.

8.2.1 General. Flight crewmembers not meeting currency requirements related to differences may re-establish currency as specified by AC 120-53 and as approved in ODR tables or as provided in FAR 121.439(b). If currency is re-established by conducting takeoffs and landings in accordance with FAR 121.439(b), pertinent ODR items must be addressed. For example, FMS operations would be addressed if recency or FMS operation has lapsed.

8.2.2 Re-establishing Level B Currency. A variety of means for re-establishing compliance with Level B currency have been found acceptable for B737 programs. An example would be a crewmember review of pertinent differences training materials or bulletins per the operator's guidelines. However, when using this method, if a period of greater than 6 months has elapsed for PICs or 12 months for SICs without flying Level B series, then differences requalification is appropriate. Differences requalification is accomplished for the respective PIC or SIC by:

a) Satisfying the same MDRs and ODRs as for initial differences qualification, or
b) Completing an approved recurrent training course or proficiency check, which meets the provisions of paragraph 6.4 or 7.3 of this report.

8.2.3 Re-establishing Level C, C*, or D Currency. For Level C, C*, or D currency is re-established as specified by AC 120-53A, Appendix 2. Examples of methods found acceptable for B737 programs include:

a) Flight with a qualified check airman.

b) Demonstrating proficiency in a device or simulator at a level at or greater than specified in MDR table.
c) Completing a PC or PT event that addresses relevant items.
d) Meeting initial differences qualification requirements.

9. AIRCRAFT COMPLIANCE CHECKLIST

9.1 Compliance Checklist (Appendix 3).

Compliance checklists are provided as an aid to FAA Certificate Holding District Offices (CHDOs) to identify those specific rules or policies for which compliance has already been demonstrated to FAA for a particular type, series, or series group. The checklist also notes rules or policies that remain to be demonstrated to CHDOs by operators. Not all rules or policies or series are necessarily listed or addressed. When differences exist between the series evaluated with the compliance checklist and series used by an operator, the CHDO evaluates those differences and approves use of the series, if that series provides equivalent compliance with FARs or FAA policies. It remains the responsibility of a Certificate Holding District Office to review compliance with pertinent rules or policies not already satisfactorily addressed in the compliance checklist, prior to FAR 121 approval of an operator for use of particular B737 series.

9.2 Discussion of Specific Compliance Checklist Items

9.2.1 B737 FAR 121 Compliance.

B737-100, -200, and -300 compliance with provisions of FAR 121 have previously been established for specific US operators. Careful assessment of compliance for foreign B737 series re-established on the US registry is appropriate since significant modifications may have been made. B737-400, -500, -600, -700, -800 and -9000 compliance is summarized by the checklists provided in Appendix 3.

9.2.2 Emergency Evacuation.

a) B737-100/200/300. B737-100/200/300s have successfully been demonstrated by simulated emergency evacuations credited under FAR 121.291 for configurations and passenger capacities specified in FAA Order 8900.1, Vol. 3, Chapter 30, Section 9. Accordingly, an FAR 121.291 full scale evacuation is not necessary for aircraft configurations consistent with previously approved tests. Passenger capacity less than or equal to the previously demonstrated capacity may be authorized. Accordingly, a mini evacuation is not required if a particular operator’s crews are currently qualified on a B737 series with the same or similar interior, exit configuration and cabin crew complement.
b) B737-400. The B737-400 has successfully been demonstrated in a simulated emergency evacuation credited under FAR 121.291 with 188 passengers and 6 crew. The evacuation included simulated evacuation of 3 additional children, each under two years of age (laps), which are not shown in the total count of 188 passengers and 6 crew. Accordingly, a mini evacuation is not required if the

particular operator's crews are currently qualified on a B737 series with the same or similar interior configuration, exit configuration, and cabin crew complement.

c) B737-500. The B737-500 has successfully been demonstrated by analysis based on a full-scale emergency evacuation test for the B737-300 and B737-400, that was conducted in accordance with FAR 25.803 and credited under FAR 121.291. The analysis accounted for 140 passengers and 5 crew. Accordingly, a mini-evacuation is not required if the particular operator's crews are currently qualified on a B737 series with the same or similar interior configuration, exit configuration, and cabin crew complement.

d) B737-600. The B737-600 has successfully been demonstrated by analysis based on a full-scale emergency evacuation test for the B737-300 and B737-400, that was conducted in accordance with FAR 25.803 and credited under FAR 121.291. The analysis accounted for 149 passengers and 5 crew. Accordingly, a mini-evacuation is not required if the particular operator's crews are currently qualified on a B737 series with the same or similar interior configuration, exit configuration and cabin crew complement. The overwing exits on the Boeing 737-600 are equipped with automatic overwing exits, as opposed to traditional manual overwing exits. For clarification, an evacuation demonstration is not required if the flight attendants are not required to open these exits in accordance with the air carrier's approved evacuation procedure. If major differences exist, the certificate holding district office determines the need for a mini-evacuation.

e) B737-700. The B737-700 has successfully been demonstrated by analysis based on a full-scale emergency evacuation test for the B737-300 and B737-400, that was conducted in accordance with FAR 25.803 and credited under FAR 121.291. The analysis accounted for 149 passengers and 5 crew. Accordingly, a mini-evacuation is not required if the particular operator's crews are currently qualified on a B737 series with the same or similar interior configuration, exit configuration and cabin crew complement. The overwing exits on the Boeing 737-700 are equipped with automatic overwing exits, as opposed to traditional manual overwing exits. For clarification, an evacuation demonstration is not required if the flight attendants are not required to open these exits in accordance with the air carrier's approved evacuation procedure. If major differences exist, the certificate holding district office determines the need for a mini-evacuation.

f) B737-800. The B737-800 has successfully been demonstrated by analysis based on a full-scale emergency evacuation test for the B737-300 and B737-400, that was conducted in accordance with FAR 25.803 and credited under FAR 121.291. The analysis accounted for 189 passengers and 6 crew. Accordingly, a mini-evacuation is not required if the particular operator's crews are currently qualified on a B737 serie with the same or similar interior configuration, exit configuration and cabin crew compliment. The overwing exits on the Boeing 737-800 are equipped with automatic overwing exits, as opposed to traditional manual overwing exits. For clarification, an evacuation demonstration is not required if the flight attendants are not required to open these exits in accordance with the air carrier's approved evacuation procedure. If major differences exist, the certificate holding district office determines the need for a mini-evacuation.

e) B737-900. The B737-900 has successfully been demonstrated by analysis based on a full-scale emergency evacuation test for the B737-300 and B737-400, that was conducted in accordance with FAR 25.803 and credited under FAR 121.291. The analysis accounted for 189 passengers and 6 crew. Accordingly, a mini-evacuation is not required if the particular operator's crews are currently qualified on a B737 series with the same or similar interior configuration, exit configuration and cabin crew compliment. The overwing exits on the Boeing 737-900 are equipped with automatic overwing exits, as opposed to traditional manual overwing exits. For clarification, an evacuation demonstration is not required if the flight attendants are not required to open these exits in accordance with the air carrier's approved evacuation procedure. If major differences exist, the certificate holding district office determines the need for a mini-evacuation.

f) B737-900ER. The B737-900ER has successfully been demonstrated by analysis based on previous B737-900 analysis results and a Latin Square Test demonstration of the floor level Mid Exit Door (MED). Both a Type I and an oversized Type II emergency exit configuration analysis was conducted in accordance with FAR 25.803 and credited under FAR 121.291. The analysis accounted for 220 in the Type I configuration (20 inch emergency exit aisle) and 215 passengers in the Type II configuration (13 inch emergency exit aisle) each with a total of 7 crewmembers. The MED emergency exit is a floor level drop away door with combined emergency escape slide. The left side exit is accompanied by an additional Flight Attendant seat. A partial demonstration of emergency evacuation procedures in accordance with 14 CFR Section 121.291(b) is required when the emergency exit configuration and cabin crew compliment meet the above criteria. The B737-900ER has an option to not activate the emergency exit and ensure, through interior configuration, that the door is not assessable. In this configuration paragraph 9.2.2 e) of this report applies.

9.2.3 Proving Runs, FAR 121.163

a) General. Initial FAR 121 proving runs in accordance with provisions of FAR 121.163 (a) for all series of the B737 are considered to be completed (e.g. B737-100, -200, -300, -400, -500, -600, -700, -800, -900). Further demonstration under FAR 121.163 (a) is not necessary.

b) B737s or B737 series group new to a particular operator. When a B737 type or a B737 series group is new to a particular operator, proving runs in accordance with FAR 121.163 b) may be appropriate in accordance with FAA Order 8900.1, Vol 3, Chapter 29, Section 3. Credit in the form of proving run time reductions may be permitted for an operator, including full credit, when previous B737 experience is directly applicable. Proving run requirements and reductions are as designated by FAA Order 8900.1 and the Certificate Holding District Office, unless otherwise specified by the FSB or by AFS-200.

10. FSB SPECIFICATIONS FOR DEVICES AND SIMULATORS

10.1 Standard Devices and Simulators. Device and Simulator characteristics pertinent to B737 series are as designated in AC 120-53 (as amended), except as described in par 10.2.

10.2 Special Requirements. Special device or simulator characteristics are described for training, checking, and re-establishing currency as follows:

a) Particular device characteristics have been specified by the FSB as the minimum acceptable for differences training or checking between certain series. These requirements are identified in MDRs, where applicable, by a star (*) following the minimum level specification (e.g. C*). Minimum acceptable C* device characteristics must include a cockpit-like environment which can provide flight training using appropriate controls, displays, and systems, not common to the base aircraft. This typically can be satisfied by a Level 5 Training Device (CPT, CSS, or similar device, which does not model complete systems, complex system interactions, actual dynamics, handling response, motion, or outside visual cues). In this instance, and where the base and series aircraft have commonality in each or most areas (e.g. downgraded FMS, common instrument types, similar autopilot,..), a C* device may closely approximate a basic C device. When applicable, a program must include a means to provide “hands on” training for differences in autopilots, Performance Management Systems (PMS), specialized navigation systems (IRU, GPS, area navigation, etc...) or any other devices or systems of similar complexity or sophistication.
b) Interactive CBT is defined as a level C device if it is adequate to develop knowledge and assess skill. It is also has the capability to check the proficiency levels of trainees.
c) FMS training may be conducted using an FAA approved training device. If such a device is not used, an approved FMS equipped simulator, or airplane must be used. Training devices acceptable for B737 FMS training must include a cockpit-like environment, which can provide “dynamic” flight training in the integrated operation of B737 FMS components. The National Simulator Evaluation Team (NSET) must evaluate such a training device in consultation with the FSB, prior to receiving credit in an approved training program.
d) For the B737-300/-400/-500 when different engine display formats are used (electronic presentation), crews must be exposed to the alternate presentations by some means (e.g. photos, drawings, etc.) adequate to assure proper display interpretation and use. For the B737-600/-700/-800/-900 interactive CBT (level C) as defined in this report is the minimum training level.

10.3 Aircraft/Simulator/Device Compatibility (Ref. FAR 121.407).

10.3.1 When series are flown in mixed fleets, the combination of simulators and devices used to satisfy MDR and ODR provisions must match specific series flown by that operator (use of leased simulators, etc.). The acceptability of differences between devices, simulators, and aircraft operated must be addressed by the POI, FSB, and NSET, as appropriate. The National Simulator Evaluation Team identifies acceptable

credit for simulators and level 6 and 7 training devices. Provisions for other device approvals are described below.

10.3.2 ODRs are available for aircraft pairs similar to the differences between the proposed devices and aircraft series in question. ODR provisions may be used as guidance in device acceptance or approval by POIs. If such equivalent provisions are not available, the FSB should be consulted.

10.4 Device Approvals. Device approval requests must be made through the POI. If device characteristics clearly meet established FAA criteria, and has been successfully evaluated and qualified by NSET, or have been accepted by the FSB as meeting the intent of MDRs, the POI may approve those devices or their equivalent for that carrier. If FSB determinations are made regarding device compliance with specific difference levels, the FSB will maintain record of the device characteristics or criteria for acceptance of those devices for POI reference. Where devices do not clearly satisfy a given level, POIs should request advice from the FSB or NSET.

10.5 Devices Used for Recurrent Proficiency Checks. Recurrent checking may be accomplished using either B737-100/200, B737-300/400/500 or B737-600/700/800/900 devices or simulators which satisfy MDRs and ODRs. FAA inspectors, POIs, designated examiners, or check airmen may require demonstration of competency in a simulator or the aircraft representing the series to be flown, when doubt exists regarding training program adequacy, or an airman's preparation or competency.

11. APPLICATION OF FSB REPORT

11.1 Operators Not "Mixed-Fleet Flying" B737 Series. Operators having no pertinent "differences" in their B737 fleet, or operators not mixed-fleet flying B737 series (e.g. crews are assigned separately to each series group) must apply pertinent parts of this report (e.g. Type Rating designation, MCRs, etc...) following the effective date of this report

11.2 Operators Mixed-Fleet Flying B737-100, -200, -300, -400, -500, -600, -700, -800, -900 Series or Any Combination of Those Series. For operators mixed-fleet flying more than one B737 series group (e.g. B737-200s and B737-300s, or B737-200s, -500s and -700s), compliance with MDRs, ODRs, and other relevant FSB report provisions are required. Compliance must be within a period of 90 days from the date of approval of this report, or the operator must obtain an alternate compliance period. Since FAA review and approval of programs, devices, training methods, and other items requires a reasonable period of time, and since many B737 operators may need to apply for approval, operators should plan to submit proposed ODR tables to POIs 30 days prior to the expected date of approval in order to assure timely review of the operator's proposed program.

11.3 Transition Programs. Provisions of this report may be voluntarily applied to facilitate transition programs. Specific transition programs are approved by the FAA POI in the same manner as differences programs, except that differences currency provisions do not apply.

12. ALTERNATE MEANS OF COMPLIANCE

12.1 Approval Level and Approval Criteria. Alternate means of compliance to differences requirements of FAR 121 Subpart N and O for B737 series, other than as specified in provisions of this report, must be approved by AFS-200. If Alternate compliance is sought, operators will be required to establish that proposed alternate means provide an equivalent level of safety to the provisions of AC 120-53 and this FSB report. Analysis, demonstrations, proof of concept testing, differences documentation, or other evidence may be required.

12.2 Requires Equivalent Safety. In the event alternate compliance is sought, training program hour reductions, simulator approvals, and device approvals, may be significantly limited and reporting requirements may be increased to assure equivalent safety. FAA will generally not consider relief through alternate compliance means unless sufficient lead time has been planned by an operator to allow for any necessary testing and evaluation.

12.3 Interim Equivalent Programs. In the event of clearly unforeseen circumstances in which it is not possible for an operator to comply with MDR provisions, the operators may seek an interim equivalent program rather than a permanent alternate compliance method. Financial arrangements, schedule adjustment, and other such reasons are not considered “unforeseen circumstances” for the purposes of this provision.

13. MISCELLANEOUS - RESERVED

APPENDIX 1

MASTER DIFFERENCE REQUIREMENTS - B737

MASTER DIFFERENCE REQUIREMENTS (MDR) TABLE

AIRPLANE TYPE RATING: B737		FROM AIRPLANE				
		B737BASIC B737-100/200 (SP77)	**B737-200 ADV**	**B737-300,400,500 (NON-EFIS)**	**B737-300,400,500 (EFIS)**	**B737-600,700,800,900**
TO	**B737 BASIC B737-100/200 (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**
AIR	**B737-200 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**
PLANE	**B737-300,400,500 (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 SERIES - A/A/B**	**C/B/B**	**(8) C/B/B**
	B737-300,400,500 (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 SERIES - A/A/B**	**(8) C/B/B (9) PFD/ND - D/C/C**
	B737-600,700,800,900	**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 (8) EFIS to PFD/ND - C/B/A* (9) PFD/ND to EFIS – D/C/C (11)EDFCS – C/C/C**

Notes:

A* - Testing revealed no currency requirement. Flight crews should periodically refer to applicable manuals and training materials to maintain knowledge levels.

C* - Level C training or checking which at least requires use of specific level C training devices with detailed characteristics specified in the FSB report.

(1) Installation of Performance Data Computer System (PDCS) requires additional training and currency.
(2) Installation of INS requires additional training, checking and currency.
(3) Systems device required for EFIS
(4) Installation of AFCS requires additional training, checking and currency.
(5) If the FMS on the 737-300/400/500 airplane retains only partial functions (such as SWA config.) training, checking and currency levels may be reduced.
(6) Installation of Performance Management System (PMS) requires additional training and currency.
(7) Cross series differences between the respective 737-300, 400 and 500 series require higher level (B) currency.
(8) C level training requirement may be satisfied by interactive CBT.
(9) Systems device required.
(10) Training for Integrated Standby Flying Display may be satisfied with “A” level training.
(11) EDFCS (Enhanced Digital Flight Control System) Fail Operational Autoland requires additional training, checking, and currency.
(12) Universal Avionics Flat Panel Display/FMS installations (STC ST03355AT/ST03356AT) into -300 series is equivalent to differences between -300/-400/-500 to -600/-700/-800/-900.
(13) Universal Avionics Flight Management System installations (STC’s ST03362AT) into -200 series is equivalent to differences between that series to -300 Non-EFIS.

APPENDIX 2

ACCEPTABLE ODR TABLES

737-200 TO 737-300 DESIGN OPERATOR DIFFERENCES REQUIREMENTS TABLE

DESIGN OPERATOR DIFFERENCES 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	FLT CHK	CURR
AIRPLANE CONFIGURATION	-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			

AVT = Audio Visual Tapes
CBT = Computer Based Training
SU = Stand Up Instruction

737-200 TO 737-300 SYSTEM OPERATOR DIFFERENCES REQUIREMENTS TABLE

SYSTEMS OPERATOR DIFFERENCES 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	FLT CHK	CURR
21 AIR COND. & PRESSURIZATION	- 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 AUTOFLIGHT	- 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			

737-200 TO 737-300 SYSTEM OPERATOR DIFFERENCES REQUIREMENTS TABLE (Cont'd)

SYSTEMS OPERATOR DIFFERENCES 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	FLT CHK	CURR
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 MINOR)		AVT/SU (CBT/ AVT/ SU)			
31 FLIGHT INSTRUMENTS	- EFIS (AS INSTALLED) - ADI/HIS (AS INSTALLED) - NAV SWITCH (AS INSTALLED)	NO	YES		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			

737-200 TO 737-300 SYSTEM OPERATOR DIFFERENCES REQUIREMENTS TABLE (Cont'd)

SYSTEMS OPERATOR DIFFERENCES 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	FLT CHK	CURR
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			
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			
34 NAVIGATION	- FMCS ADDED - IRS ADDED - ANCDU	NO	YES		AVT	CBT/ FMS/AT	C* + OE	D 90 DAYS + 3 FLT SEG

737-200 TO 737-300 SYSTEM OPERATOR DIFFERENCES REQUIREMENTS TABLE (Cont'd)

SYSTEMS OPERATOR DIFFERENCES 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	FLT CHK	CURR
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
33 WARNING	- ADDITIONAL SYS ANNUNCIATOR LIGHTS ADDED - GPWS MODE 6 WINDSHEAR OPTION* (* OPTION ON SOME -200 AIRPLANES)	NO	YES		AVT/SU			
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			B

737-200 TO 737-300 MANEUVER OPERATOR DIFFERENCES REQUIREMENTS TABLE

MANEUVER OPERATOR DIFFERENCES REQUIREMENTS TABLE								
DIFFERENCE AIRCRAFT: 737-300 BASE AIRCRAFT: 737-200 ADVANCED APPROVED BY (POI):_____				COMPLIANCE METHOD				
				TRAINING			CHKG/CURR	
MANEUVER	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	FLT CHK	CURR
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	FMS/AT	C*	

737-300 TO 737-400 DESIGN OPERATOR DIFFERENCES REQUIREMENTS TABLE

DESIGN OPERATOR DIFFERENCES REQUIREMENTS TABLE								
DIFFERENCE AIRCRAFT: 737-400 BASE AIRCRAFT: 737-300 APPROVED BY (POI):_____				COMPLIANCE METHOD				
				TRAINING			CHKG/CURR	
DESIGN FEATURE	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	FLT CHK	CURR
CONFIGURATION	- BODY LENGTHENED - TAIL SKID - TWO OVERWING EXITS ADDED	NO	NO	TNG HAND OUTS				
WEIGHT	- INCREASED WEIGHTS REQUIRES NEW FLAP SPEED SCHEDULE; 10 KNOTS ADDED TO ALL FLAP SPEEDS WITH GW ABOVE 138,500 LBS FOR TAKEOFF OR LANDING	NO	YES	TNG HAND OUTS				B

737-300 TO 737-400 SYSTEMS OPERATOR DIFFERENCES REQUIREMENTS TABLE

SYSTEMS OPERATOR DIFFERENCES REQUIREMENTS TABLE								
DIFFERENCE AIRCRAFT: 737-400 BASE AIRCRAFT: 737-300 APPROVED BY (POI):_____				COMPLIANCE METHOD				
				TRAINING			CHKG/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	FLT CHK	CURR
21 AIR COND. & PRESSURIZATION	- 3 ZONE AIR CONDITIONING SYSTEM - REVISED CONTROLS AND INDICATORS - TRIM AIR	NO	SEE APP	TNG HAND OUT				
22 AUTOFLIGHT	- REVISED DISENGAGE BAR - TO/GA MODE NOW AVAILABLE WITH BOTH F/D SWITCHES OFF	NO	NO	TNG HAND OUT				
24 ELECTRICAL	- HIGHER GENERATOR RATINGS	NO	NO	TNG HAND OUT				
27 FLIGHT CONTROLS	- INCREASED FLAP PLACARD SPEEDS	NO	NO	TNG HAND OUT				
34 NAVIGATION	- FMCS UPDATE 4; SEVERAL NEW CDU PAGES WITH ADDED INFO/FEATURES	NO	NO	TNG HAND OUT				
LIMITATIONS	- GROWTH RELATED CHANGES	NO	NO	TNG HAND OUT				B

737-300 TO 737-400 MANEUVER OPERATOR DIFFERENCES REQUIREMENTS TABLE

MANEUVER OPERATOR DIFFERENCES REQUIREMENTS TABLE								
DIFFERENCE AIRCRAFT: 737-400 BASE AIRCRAFT: 737-300 APPROVED BY (POI):_____				COMPLIANCE METHOD				
				TRAINING			CHKG/CURR	
MANEUVER	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	FLT CHK	CURR
PREFLIGHT INSPECTION	- EXT. INSPECTION CHANGED TO ADD TAILSKID - INT INSPECTION CHANGED TO ADD EXTRA OVERWING EXITS	NO	SEE APP	TNG HAND OUT				
TAKEOFF NORMAL	-FLAPS 1 NOT CERTIFIED FOR T/O	NO	NO	TNG HAND OUT				

737-300 TO 737-500 DESIGN, SYSTEMS & MANEUVER OPERATOR DIFFERENCES REQUIREMENTS TABLE

OPERATOR DIFFERENCES REQUIREMENTS TABLE								
DIFFERENCE AIRCRAFT: 737-500 BASE AIRCRAFT: 737-300 APPROVED BY (POI):_____				COMPLIANCE METHOD				
				TRAINING			CHKG/CURR	
FEATURE/ SYSTEMS/ MANEUVER	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	FLT CHK	CURR
CONFIGURATION	- SHORTER BODY	NO	NO	TNG HAND OUT				
21 AIR CONDITIONING AND PRESSURIZATION	- GASPER FAN ADDED	NO	MINOR	TNG HAND OUT				
27 FLIGHT CONTROLS	- STAB GREEN BAND REVISED	NO	NO	TNG HAND OUT				
MISC. SYSTEMS	- FLIGHT INSTRUMENT LIGHT CONTROLS RELOCATED TO SIDEWALLS	NO	NO	TNG HAND OUT				
LIMITATIONS	- SIZE RELATED AND OTHER MINOR CHANGES	NO	NO	TNG HAND OUT				B
PREFLIGHT INSPECTION	- MINOR PASS CABIN EMERGENCY EQUIPMENT LOCATION CHANGE	NO	NO	TNG HAND OUT				
TAKEOFF - NORMAL	- FLAPS 1 TAKEOFF POSITION DELETED	NO	NO	TNG HAND OUT				

737-300 TO 737-700 DESIGN OPERATOR DIFFERENCES REQUIREMENTS TABLE

DESIGN OPERATOR DIFFERENCES REQUIREMENTS TABLE								
DIFFERENCE AIRCRAFT: 737-700 BASE AIRCRAFT: 737-300 APPROVED BY (POI):_____				COMPLIANCE METHOD				
				TRAINING			CHKG/CURR	
DESIGN FEATURE	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	FLT CHK	CURR
AIRPLANE CONFIGURATION	-WING TIP EXTENSION -STABILIZER EXTENSION -DORSAL FIN MOVED FORWARD -VERTICAL FIN ROOT EXTENSION -RUDDER ASSEMBLY -(OPTION: BLENDED WINGLET) .	MINOR	NO (YES)	TNG HND-OUT (TNG HND-OUT)				B
PANEL LAYOUT	-INCORPORATION OF COMMON DISPLAY SYSTEM (CDS)	NO	NO			Interactive CBT	B	B
WEIGHTS	-GROWTH RELATED CHANGES	NO	NO	TNG HND-OUT				

737-300 TO 737-700 SYSTEMS OPERATOR DIFFERENCES REQUIREMENTS TABLE

SYSTEMS OPERATOR DIFFERENCES REQUIREMENTS TABLE								
DIFFERENCE AIRCRAFT: 737-700 BASE AIRCRAFT: 737-300 APPROVED BY (POI):_____				COMPLIANCE METHOD				
				TRAINING			CHKG/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	FLT CHK	CURR
21 AIR COND. & PRESSURIZATION	-CHANGES ASSOCIATED WITH 41000 FT CRUISE ALTITUDE	NO	YES MINOR		CBT/ AVT/ SU			B
22 AUTOFLIGHT	-NO CHANGES W/OUT OPTIONS -(OPTION: ENHANCED DIGITAL FLIGHT CONTROL SYSTEM (EDFCS) W/FAIL OPERATIONAL AUTOLAND)	NO	NO (YES)			(LEVEL 6 TNG DEVICE)		(C)
24 ELECTRICAL	-90KVA -MODIFY AC SYSTEM TO ACCOMMODATE 90 KVA -MODIFIED DC SYSTEM -ENGINE DRIVEN GENERATOR AUTO SWITCHES AFTER TAKEOFF IF AIRPLANE REMAINS ON APU GENERATOR AFTER ENGINE START	NO	NO		CBT/ AVT/ SU			B
25 EMERGENCY EQUIPMENT	-EQUIPMENT RELOCATED IN THE FLIGHT DECK -FLIGHT DECK SECURITY DOOR	NO	NO	TNG HND-OUT				

737-300 TO 737-700 SYSTEMS OPERATOR DIFFERENCES REQUIREMENTS TABLE (Cont’d)

SYSTEMS OPERATOR DIFFERENCES REQUIREMENTS TABLE								
DIFFERENCE AIRCRAFT: 737-700 BASE AIRCRAFT: 737-300 APPROVED BY (POI):_____				COMPLIANCE METHOD				
				TRAINING			CHKG/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	FLT CHK	CURR
26 FIRE PROTECTION	-MODIFY FOR NEW ENGINES	NO	NO	TNG HND-OUT				
27 FLIGHT CONTROLS	-ADDITIONAL OUTBOARD LEADING EDGE SLAT ON EACH WING -REVISED FLAP/SLAT INDICATOR MODULE FOR ADDED SLATS -SPOILERS 1 AND 8 MODIFIED FOR INFLIGHT AND GROUND CONTROL -WHEEL TO RUDDER INTERCONNECT SYSTEM (WTRIS) ADDED -CHANGE FROM TRIPLE TO DOUBLE SLOTTED CONTINUOUS SPAN FLAPS -FLAP SKEW DETECTION ADDED -FLAPS 10 TAKEOFF BASIC - (OPTION: BLENDED WINGLET W/ SPEED BRAKE LOAD ALLEVIATION)	NO	YES MINOR (YES MINOR)	(TNG HND-OUT)	CBT/ AVT/ SU			

737-300 TO 737-700 SYSTEMS OPERATOR DIFFERENCES REQUIREMENTS TABLE (Cont'd)

SYSTEMS OPERATOR DIFFERENCES REQUIREMENTS TABLE								
DIFFERENCE AIRCRAFT: 737-700 BASE AIRCRAFT: 737-300 APPROVED BY (POI):_____				COMPLIANCE METHOD				
				TRAINING			CHKG/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	FLT CHK	CURR
31 FLIGHT INSTRUMENTS	-INCORPORATION OF COMMON DISPLAY SYSTEM (CDS) LCD DISPLAY UNITS AND ASSOCIATED DISPLAY CONTROL PANELS, DISPLAYS SOURCE PANEL, AND ENGINE DISPLAY CONTROL PANEL -MODIFIED AND RELOCATED EFIS CONTROL PANEL -NEW COMPACTED DISPLAY MODE -(OPTION: HEADS UP DISPLAY)	NO	YES			Interactive CBT (See App. 4)	B	B
28 FUEL	-REVISED FOR INCREASED FUEL CAPACITY IN WING -ADDITIONAL LIGHT INDICATION FOR ENGINE FUEL SHUTOFF VALVE -FUEL QUANTITY INDICATIONS INCORPORATED INTO CDS -OVERWING FUELING CAPABILITY DELETED -FUEL USED/RESET CONTROL RELOCATED -FUEL SCAVANGE SYSTEM CHANGED	NO	NO	TNG HND-OUT				

737-300 TO 737-700 SYSTEMS OPERATOR DIFFERENCES REQUIREMENTS TABLE (Cont'd)

SYSTEMS OPERATOR DIFFERENCES REQUIREMENTS TABLE								
DIFFERENCE AIRCRAFT: 737-700 BASE AIRCRAFT: 737-300 APPROVED BY (POI):_____				COMPLIANCE METHOD				
				TRAINING			CHKG/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	FLT CHK	CURR
29 HYDRAULIC	-INSTALL 757/767 STYLE ENGINE DRIVEN PUMPS -MODIFY SYSTEMS TO ACCOMMODATE CHANGES TO THE WING, FLIGHT CONTROLS, THRUST REVERSER AND LEADING EDGE SLATS -INDICATIONS INCORPORATED INTO CDS	NO	NO	TNG HND-OUT				
30 ICE & RAIN PROTECTION	-COWL ANTI-ICE TEMPERATURE SENSING DELETED -RAINBOE SYSTEM DELETED	NO	YES	TNG HND-OUT				
32 LANDING GEAR	-NEW MAIN GEAR ASSEMBLY TO ACCOMMODATE DESIGN WEIGHT INCREASE -NEW 5 ROTOR STEEL BRAKES -LARGER SIZE TIRE -MAIN GEAR DOWNLOCK VIEWERS DELETED -OVERHEAD LANDING GEAR LIGHTS STANDARD -ANTISKID SWITCH DELETED -SYSTEM DEPRESSURIZATION ADDED TO MANUAL EXTENSION SYSTEM	NO	YES MINOR		CBT/ AVT/ SU			

737-300 TO 737-700 SYSTEMS OPERATOR DIFFERENCES REQUIREMENTS TABLE (Cont'd)

SYSTEMS OPERATOR DIFFERENCES REQUIREMENTS TABLE								
DIFFERENCE AIRCRAFT: 737-700 BASE AIRCRAFT: 737-300 APPROVED BY (POI):_____				COMPLIANCE METHOD				
				TRAINING			CHKG/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	FLT CHK	CURR
34 NAVIGATION	-RMI INCORPORATED INTO CDS	NO	NO	TNG HND-OUT				
36 PNEUMATICS	-MINOR SOURCE REVISIONS DUE TO REVISED BLEED LOADS	NO	NO	TNG HND-OUT				
49 APU	-90 KVA CAPABILITY -2 PACK OPERATION CAPABILITY	NO	NO	TNG HND-OUT				
52 DOORS	-"GULL WING" OVERWING EXITS	NO	YES			DOOR TRAINER		B
73,74,77,80 POWER PLANT	-NEW CFM56-7 FADEC ENGINE -NEW CONTROLS AND INDICATORS (CDS, EEC LIGHTS, ENGINE CONTROL LIGHTS, EEC SWITCHES)	NO	YES		CBT/ AVT/ SU			B

737-300 TO 737-700 SYSTEMS OPERATOR DIFFERENCES REQUIREMENTS TABLE (Cont'd)

SYSTEMS OPERATOR DIFFERENCES REQUIREMENTS TABLE								
DIFFERENCE AIRCRAFT: 737-700 BASE AIRCRAFT: 737-300 APPROVED BY (POI):_____				COMPLIANCE METHOD				
				TRAINING			CHKG/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	FLT CHK	CURR
33 WARNING	-ADD'L SYSTEM ANNUNCIATOR LIGHTS ADDED -SPOILER POSITION ADDED TO TAKEOFF WARNING -LANDING SPOILER POSITION ADDED AS BASIC -GPWS ALTITUDES MODIFIED -PSEU LIGHT ADDED	NO	YES		CBT/ AVT/ SU			
PERFORMANCE	-GROWTH RELATED CHANGES	NO	NO	TNG HND-OUT				
LIMITATIONS	-GROWTH RELATED CHANGES -COOLING REQUIREMENT FOR CDS	NO	NO		CBT/ AVT/ SU			B

737-300 TO 737-700 MANEUVER OPERATOR DIFFERENCES REQUIREMENTS TABLE

MANEUVER OPERATOR DIFFERENCES REQUIREMENTS TABLE								
DIFFERENCE AIRCRAFT: 737-700 BASE AIRCRAFT: 737-300 APPROVED BY (POI):_____				COMPLIANCE METHOD				
				TRAINING			CHKG/CURR	
MANEUVER	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	FLT CHK	CURR
NORMAL TAKEOFF, CLIMB, CRUISE, DESCENT, INSTRUMENT APPROACHES, LANDING	- NO CHANGES	NO	NO					
NON-NORMAL MANEUVERS	- NO CHANGES	NO	NO					

737-700 TO 737-800 DESIGN OPERATOR DIFFERENCES REQUIREMENTS TABLE

DESIGN OPERATOR DIFFERENCES REQUIREMENTS TABLE								
DIFFERENCE AIRCRAFT: 737-800 BASE AIRCRAFT: 737-700 APPROVED BY (POI):_____				COMPLIANCE METHOD				
				TRAINING			CHKG/CURR	
DESIGN FEATURE	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	FLT CHK	CURR
CONFIGURATION	- BODY LENGTHENED - TAIL SKID - TWO OVERWING EXITS ADDED	NO	NO	TNG HAND OUTS				
WEIGHT	- INCREASED WEIGHTS REQUIRES NEW FLAP SPEED SCHEDULE; APPROX 10 KNOTS ADDED TO ALL FLAP SPEEDS FOR TAKEOFF OR LANDING	NO	YES	TNG HAND OUTS				B

737-700 TO 737-800 SYSTEMS OPERATOR DIFFERENCES REQUIREMENTS TABLE

SYSTEMS OPERATOR DIFFERENCES REQUIREMENTS TABLE								
DIFFERENCE AIRCRAFT: 737-800 BASE AIRCRAFT: 737-700 APPROVED BY (POI):_____				COMPLIANCE METHOD				
				TRAINING			CHKG/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	FLT CHK	CURR
21 AIR CONDITIONING & PRESSURIZATION	- 3 ZONE AIR CONDITIONING SYSTEM - REVISED CONTROLS AND INDICATORS - ADDITIONAL RECIRC FAN - TRIM AIR	NO	SEE APP	TNG HAND OUT				
LIMITATIONS	- GROWTH RELATED CHANGES	NO	NO	TNG HAND OUT				B

737-800/-900 TO 737-800 SHORT FIELD DESIGN OPERATOR DIFFERENCES REQUIREMENTS TABLE

DESIGN OPERATOR DIFFERENCES REQUIREMENTS TABLE								
DIFFERENCE AIRCRAFT: 737-800SFP (SHORT FIELD PERFORMANCE) BASE AIRCRAFT: 737-800/-900 APPROVED BY (POI):_____				COMPLIANCE METHOD				
				TRAINING			CHKG/CURR	
MANEUVER	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	FLT CHK	CURR
CONFIGURATION	- TWO POSITION TAIL SKI (OPTION; REQUIRES APU DRAIN MAST REPOSITIONING) - SEALED LEADING-EDGE SLATS - INCREASE SPOILER DEFLECTIONS ON THE GROUND - REVISED SPEED BRAKE HANDLE DETENT - REDESIGN (FLAT) AND RELOCATE AFT PRESSUE BULKHEAD	NO	NO	TNG HAND OUTS				
WEIGHT	- INCREASED WEIGHTS	NO	NO	TNG HAND OUTS				

737-800/-900 TO 737-800 SHORT FIELD SYSTEMS OPERATOR DIFFERENCES REQUIREMENTS TABLE

SYSTEMS OPERATOR DIFFERENCES REQUIREMENTS TABLE								
DIFFERENCE AIRCRAFT: 737-800(SFP) BASE AIRCRAFT: 737-800/-900 APPROVED BY (POI):_____				COMPLIANCE METHOD				
				TRAINING			CHKG/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	FLT CHK	CURR
27 FLIGHT CONTROLS	- STALL MANAGEMENT YAW DAMPER (SMYD) SOFWARE REVISED FOR IMPROVED PERFORMANCE	NO	NO	TNG HND OUT				
31 INDICATING/ RECORDING SYSTEMS	- COMMON DISPLAY SYSTEM (CDS) REVISED FOR IMPROVED PERFORMANCE	NO	NO	TNG HND OUT				
34 NAVIGATION	- FLIGHT MANAGEMENT COMPUTER (FMC) REVISED FOR IMPROVED PERFORMANCE	NO	NO	TNG HND OUT				
73 ENGINE FUEL AND CONTROL	- REVISED ELECTRONIC ENGINE CONTROL (EEC) SOFTWARE FOR PERFORMANCE CREDIT	N0	N0	TNG HND OUT				
PERFORMANCE	- GROWTH RELATED CHANGES	NO	NO	TNG HND OUT				
LIMITATIONS	- GROWTH RELATED CHANGES	NO	NO	TNG HND OUT				B

B-737-800/-900 TO 737-900 EXTENDED RANGE DESIGN OPERATOR DIFFERENCES REQUIREMENTS TABLE

DESIGN OPERATOR DIFFERENCES REQUIREMENTS TABLE								
DIFFERENCE AIRCRAFT: 737-900ER (EXTENDED RANGE) BASE AIRCRAFT: 737-800/-900 APPROVED BY (POI):_____				COMPLIANCE METHOD				
				TRAINING			CHKG/CURR	
MANEUVER	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	FLT CHK	CURR
CONFIGURATION	- TWO POSITION TAIL SKID - APU DRAIN MAST REPOSITIONED - SEALED LEADING-EDGE SLATS FOR TAKE-OFF FLAPS 10, 15, & 25 - INCREASE SPOILER DEFLECTIONS ON THE GROUND - REVISED SPEED BRAKE HANDLE DETENT - 1 OR 2 AUX FUEL TANKS (OPTION) - WINGLET (OPTION) - REDESIGN (FLAT) AND RELOCATE AFT PRESSUE BULKHEAD - 1 PAIR MID EXIT DOORS ADDED	NO	NO	TNG HAND OUTS				
WEIGHT	INCREASED WEIGHTS	NO	NO	TNG HAND OUTS				

737-800/-900 TO 737-900 EXTENDED RANGE SYSTEMS OPERATOR DIFFERENCES REQUIREMENTS TABLE

SYSTEMS OPERATOR DIFFERENCES REQUIREMENTS TABLE								
DIFFERENCE AIRCRAFT: 737-800(SFP) BASE AIRCRAFT: 737-800/-900 APPROVED BY (POI):_____				COMPLIANCE METHOD				
				TRAINING			CHKG/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	FLT CHK	CURR
27 FLIGHT CONTROLS	- STALL MANAGEMENT YAW DAMPER (SMYD) SOFWARE REVISED FOR IMPROVED PERFORMANCE	NO	NO	TNG HND OUT				
28 FUEL	- AUXILIARY FUEL TANK(S) ADDED (OPTION) (1 OR 2 TANKS)	NO	YES	TNG HND OUT				
31 INDICATING/ RECORDING SYSTEMS	- COMMON DISPLAY SYSTEM (CDS) REVISED FOR IMPROVED PERFORMANCE	NO	NO	TNG HND OUT				
34 NAVIGATION	- FLIGHT MANAGEMENT COMPUTER (FMC) REVISED FOR IMPROVED PERFORMANCE	NO	NO	TNG HND OUT				
52 DOORS	- 1 PAIR MID EXIT DOORS ADDED	NO	YES			DOOR TRAINER		
73 ENGINE FUEL AND CONTROL	- REVISED ELECTRONIC ENGINE CONTROL (EEC) SOFTWARE FOR PERFORMANCE CREDIT	N0	N0	TNG HND OUT				
PERFORMANCE	- GROWTH RELATED CHANGES	NO	NO	TNG HND OUT				
LIMITATIONS	- GROWTH RELATED CHANGES	NO	NO	TNG HND OUT				B

B-757/767 COMMON LANDING CURRENCY MANEUVER OPERATOR DIFFERENCES REQUIREMENT TABLE

MANEUVER OPERATOR DIFFERENCES REQUIREMENTS TABLE										
DIFFERENCE AIRCRAFT: 757/767 BASE AIRCRAFT: 737-300/-400/-500/-600/-700/-800/-900 APPROVED BY (POI):_____				COMPLIANCE METHOD						
				TRAINING					CHKG/CURR	
MANEUVER	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	LVL E	FLT CHK	CURR
NORMAL TAKEOFF	MINOR DIFFERENCES	YES	YES					FFS	E	E 90 DAY
ENGINE FAILURE/V1	MINOR DIFFERENCES, ACCELERATION USING VERTICAL SPEED MODE	YES	YES					FFS	E	A
MANUAL LANDING	FUNCTIONALLY EQUIVALENT, PILOT EYE HEIGHT DIFFERENT	NO	NO					FFS	E	E 90 DAY
ILS NORMAL + ENG INOP	FUNCTIONALLY EQUIVALENT, DIFFERENT FLAP SETTING FOR ENGINE INOPERATIVE	YES	YES					FFS	E	A
MANUAL LANDING (ONE ENG)	FUNCTIONALLY EQUIVALENT, DIFFERENT FLAP SETTING FOR ENGINE INOPERATIVE, PILOT EYE HEIGHT DIFFERENT	YES	YES					FFS	E	A
NON-ILS APPROACH AND LANDING	FUNCTIONALLY EQUIVALENT, PILOT EYE HEIGHT DIFFERENT	YES	NO					FFS	E	A

NOTE: One Automatic Landing (Autoland) may be credited toward the landing currency.

737-700 EFIS/MAP TO 737-700 PFD/ND OPERATOR DIFFERENCES REQUIREMENTS TABLE

SYSTEMS OPERATOR DIFFERENCES REQUIREMENTS TABLE									
DIFFERENCE AIRCRAFT: B737-700 w/ PFD/ND BASE AIRCRAFT: B737-700 w/ EFIS APPROVED BY (POI):_____				COMPLIANCE METHOD					
				TRAINING				CHKG/CURR	
DESIGN FEATURE	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	FLT CHK	CURR
31 FLIGHT INSTRUMENTS	PFD/ND DISPLAY - FMA DIFFERENCES - AFDS STATUS ANNUNCIATOR - VERTICAL SPEED DISPLAY - AIRSPEED BUGS AND FLAP MANEUVERING SPEEDS - COMPASS ROSE - PITCH LIMIT INDICATOR - AIRSPEED TREND VECTOR - MINIMUM AND MAXIMUM SPEEDS - LANDING ALTITUDE REFERENCE BAR - ALTIMETER SETTING - LOC AND GS DEVIATION - SELECTED ALTITUDE INDICATION (BUG) - GROUND SPEED DISPLAY - RADIO ALTITUDE DISPLAY - TCAS RESOLUTION ADVISORIES - TIME CRITICAL WARNINGS - APPROACH REFERENCE AREA - MARKER BEACON INDICATION - SYSTEM FAILURES AND FLAGS - NO “COMPACT DISPLAY” (DU SWITCHING ONLY)	NONE	Except as noted below for Compact Display NONE. YES			CBT/ SU		B	B

NOTE: Lower DU and Main Panel DU switching functions activated with the conversion from EFIS to PFD/ND.

APPENDIX 3

AIRCRAFT COMPLIANCE CHECKLISTS

B737-400/500 COMPLIANCE CHECKLIST

This checklist applies to both the **B737-400 and B737-500**. Compliance with the following Federal Aviation Regulations and FAA policies has been established, based on the configuration **of Piedmont Airlines B737-401 (PV003) and Southwest B737-5H4 (PU001)**, or equivalent. Items that are identified as "CHDO", need to be evaluated by principal inspectors at the Certificate Holding District Office prior to a **B737-400/-500** aircraft being used in FAR 121 revenue service. Items marked "complies" have either been found to directly comply with the applicable rule, or the necessary data or procedures are available to permit assessment of compliance of a B737 for a particular operation (e.g. as for takeoff obstacle clearance assessment pertinent to FAR 121.189). Items marked NA are not applicable to B737 aircraft.

FAR 91

91.24 Complies
91.27 Complies
91.30 Complies
91.31 Complies
91.32 Complies
91.33 Complies, except (b) (11) CHDO
91.34 If applicable to operations other than FAR 121 complies, otherwise CHDO
91.35 Complies
91.36 Complies
91.37 Complies
91.41 NA
91.42 Complies
91.49 Complies
91.51 Complies, except © CHDO
91.52 NA
91.70 Complies. For the B737-400, speed authorization may be required by ATC for some weights and configurations during holding. CHDO
91.73 Complies
91.169 CHDO
91.171 CHDO
91.172 CHDO
91.183 Complies
91.191 Complies
91.193 Complies, except (b) (1) CHDO
91.197 Complies
91.200 Complies
91.203 Complies
91.209 (b) and (c) comply
91.303 Complies; (Stage 3)

FAR 121

121.141	(a) complies, (b) CHDO
121.157	(b) complies
121.173	(b) and (d) comply
121.189	Complies
121.191	Complies
121.193	NA
121.195	Complies, data provided in AFM
121.197	Complies, data provided in AFM
121.215	Complies
121.217	Complies
121.219	Complies
121.221	Complies, forward and aft compartments are Class C
121.223	Complies
121.231	Complies
121.233	Complies
121.235	Complies
121.237	Complies
121.241	Complies
121.243	Complies
121.245	Complies
121.247	Complies
121.249	Complies
121.251	Complies
121.253	Complies
121.255	Complies
121.257	Complies
121.259	Complies
121.261	Complies
121.263	Complies
121.265	Complies
121.267	Complies
121.269	Complies
121.273	Complies
121.275	Complies
121.277	Complies
121.281	Complies
121.289	Complies
121.291	Complies, except (b) through (e) CHDO
121.303	Complies
121.305	Complies
121.307	Complies
121.308	Complies
121.309	Complies, except (b) (1) CHDO
121.310	Complies

121.311 Equipment is in compliance; use and procedures per (a), (b), and (d) to bereviewed by CHDO
121.312 Complies
121.313 Complies, except (g) CHDO
121.315 Complies - QRH provided; amended procedures, if any, to be reviewed by the CHDO
121.316 Complies
121.317 Complies
121.318 Complies
121.319 Complies
121.323 Complies
121.325 Complies
121.329 Complies, except (b)(3) CHDO
121.333 Equipment and AFM procedures are in compliance; ©(2), (3), (4), (d), and (f) operator specific procedures, if any, to be reviewed by CHDO
121.335 (b) Complies
121.337 Equipment is in compliance, procedures for use in (b) and © to be reviewed by CHDO
121.339 (a) (1) (2) (b) equipment complies, (a) (3) (4) © and procedures to be reviewed by CHDO
121.340 (a) complies, (b) CHDO
121.341 Complies
121.342 Complies
121.343 (a) and (b) comply, © and (d) CHDO
121.345 Complies
121.347 Complies
121-349 Complies, except (d) CHDO
121.351 (a) complies, (b) CHDO
121.353 CHDO
121.355 Complies
121.357 Complies, except © CHDO
121.359 Complies, except (b) NA
121.360 Complies, except (d) and (e) CHDO
121.369 CHDO
121.481 CHDO
121.483 CHDO
121.485 CHDO
121.576 Complies as follows: The B737 meets this requirement with red configuration **(PI B737-401 or SWA B737-5H4)** or equivalent; other configurations CHDO;
121.578 B737-400/500 aircraft meet this requirement by avoiding or limiting flight in areas where high cabin ozone concentration could occur (see “AC 120-38”); CHDO
121.579 Compliance is based on AFM provisions; CHDO
121.581 Complies
121.587 Design is in compliance; operator procedures CHDO
121.589 Design is in compliance; operator procedures CHDO

121.629 Appropriate de-icing and anti-icing issues are addressed in the Boeing B737 Operations Manual, Vol. 1, Section 02.17.01. No reference is made to permitting “under wing frost” due to cold fuel for the B737, as exists for certain other aircraft; CHDO

121.652 Experience in any B737 serie may be credited to satisfy “high limit” minima requirements for a PIC; CHDO

FAR 121 APPENDIX G CHDO

B737-700 COMPLIANCE CHECKLIST

PART 91
Subpart A - General

91.9 Civil aircraft flight manual, marking, and placard requirements
(a) - (b) The 737-700 design supports this requirement by documenting the airplane limitations in the Airplane Flight Manual.
(c) The 737-700 design meets the marking requirements of part 45.
(d) This requirement is for rotorcraft and does not apply to the 737-700.

Subpart B - Flight Rules

91.191 Category II manual
(a) - (c) The 737-700 is designed to operate in Category II operations. However, this requirement does not apply to operations conducted under part 121, as stated in 91.191(c).

Subpart C - Maintenance, preventive maintenance, and alterations

91.203 Civil aircraft: Certifications required
(a) - (b) The 737-700 will be delivered with a current airworthiness certificate appropriately displayed.
(c) The 737-700 design does not include provisions for fuel tanks in the passenger compartment and complies with the requirements of part 34.
(d) The fuel design complies with these requirements.

91.205 Powered civil aircraft with standard category US airworthiness certificates; instrument and equipment requirements
(a) 737-700 instrumentation supports this operational requirement.
(b)(1) - (b)(5) The 737-700 instrumentation meets these requirements.
(b)(6) This requirement does not apply to turbine powered aircraft.
(b)(7) The 737-700 instrumentation meets these requirements.
(b)(8) This requirement does not apply to turbine powered aircraft.
(b)(9) - (b)(10) The 737-700 instrumentation meets these requirements.
(b)(11) 737-700 slide/raft survival kit will includes a smoke flare.
(b)(12) 737-700 seat belt design supports this requirement.(b)(13) This requirement applies to small civil aircraft and as such does not apply to the 737-700.
(b)(14) An emergency transmitter locator is not required by 91.207, however the 737-700 will be furnished with an ELT.
(b)(15) This requirement does not apply to the 737-700.
(b)(16) This requirement applies to rotorcraft and as such does not apply to the 737-700.
(c)(1) Requirements for instruments and equipment in paragraph (a) are addressed above.
(c)(2) - (c)(5) The 737-700 instrumentation meets these requirements.
(c)(6) The 737-700 does not have fuses in the flight deck therefore this requirement does not apply.

(d)(1) Requirements for instruments and equipment in paragraph a and b are addressed above.
(d)(2) 737-700 instrumentation supports this requirement.
(d)(3) This requirement for gyroscopic instruments does not apply to the 737-700 because the 737-700 has a third attitude instrument which meets these requirements.
(d)(4) - (d)(9) The 737-700 instrumentation meets these requirements.
(e) The 737-700 instrumentation meets these requirements.
(f) This paragraph does not apply to operations conducted under part 121.

91.207 Emergency locator transmitters

This requirement does not apply to the 737-700 when it is operated in scheduled flights by scheduled air carriers (paragraph (f)).

91.209 Aircraft lights

737-700 aircraft light design meets all requirements of this paragraph with the exception of the lighting requirements for an anchored airplane (subparagraph c) which do not apply to the 737-700 airplane.

91.211 Supplemental oxygen

(a) Not applicable to a pressurized airplane. 737-700 crew oxygen system supports the operation of the airplane as defined by this requirement.

91.215 ATC transponder and altitude reporting equipment and use

(a) - (c) The 737-700 design includes the controls and displays necessary to support this requirement. This requirement is operational in nature and as such compliance is not directly dependent on the 737-700 design.

91.217 Data correspondence between automatically reported pressure altitude data and the pilots altitude reference

(a) - (c) The 737-700 design includes the instrumentation necessary to support this requirement.

91.219 Altitude alerting system or device; turbojet powered civil airplanes

(a) - (b) The 737-700 altitude alerting system design supports this requirement.
(c) - (d) These requirements are operational in nature and as such compliance is not directly dependent on the 737-700 design.

91.221 Traffic alert and collision avoidance system

(a) - (b) The 737-700 design includes the controls and displays necessary to support this requirement.

91.317 Provisionally certificated civil aircraft; operating limitations

(a) - (k) This requirement applies to provisionally certificated civil aircraft and as such does not apply to the 737-700 airplane.

91.409 Inspections

(a) - (h) These requirements are operational in nature and as such compliance is not directly dependent on the 737-700 design.

91.411 Altimeter system and altitude reporting equipment tests and inspections

(a) - (d) Initial altimeter system and altitude reporting equipment tests will be conducted on the 737-700 airplane prior to delivery, meeting the requirements of this paragraph.

91.413 ATC transponder and inspections

(a) - (c) Initial ATC transponder inspections will be conducted on the 737-700 airplane prior to delivery meeting the requirements of this paragraph.

Subpart D - Large and Turbine-powered multiengined airplanes

91.503 Flying equipment and operating information

(a) Stowage provisions are provided for the necessary flying equipment and aeronautical charts and data required by this subparagraph.

(b) - (c) Checklists for normal and non-normal operation of the 737-700 airplane are provided to the certificate holder. This requirement is operational in nature and as such compliance is not directly dependent on the 737-700 design.

91.517 Passenger Information

(a) The 737-700 design includes the controls and displays necessary to support this requirement.

(b) This requirement does not apply to the 737-700 airplane because the airplane supports the requirements of sub-paragraph (a) above.

(c) - (e) These requirements are operational in nature and as such compliance is not directly dependent on the 737-700 design.

91.521 Shoulder harness

(a) - (b) The flight crew and flight attendant combined seat belt and shoulder harnesses meets the requirements of 25.785.

91.523 Carry-on baggage

(a) - (b) The 737-700 carry-on baggage stowage areas are designed to be used as provided in 91.525 and meet the load requirements of 25.561(b)(3).

91.525 Carriage of cargo

(a) 737-700 cargo compartment design meets the requirements of this paragraph and allows for the operations defined.

(b) This requirement does not apply to the 737-700 airplane because the cargo compartments are not designed to require physical entry of a crewmember to extinguish any fire.

91.527 Operating in icing conditions

(a) This requirement is operational in nature and as such compliance is not directly dependent on the 737-700 design.

(b) - (c) The 737-700 ice protection provisions meets the requirements which allow operations defined in this paragraph. This requirement is operational in nature and as such compliance is not directly dependent on the 737-700 design.

91.603 Aural speed warning devices

The 737-700 aural speed warning device design meets the overspeed warning requirements of 25.1303(c)(1).

91.605 Transport category civil airplane weight limitations

(a) This requirement does not apply to turbine-engine powered airplanes certificated after September 30, 1958.

(b) The 737-700 design and Airplane Flight Manual provide sufficient information necessary for the operator to conduct operations defined in this requirement.

91.607 Emergency exits for airplanes carrying passengers for hire

(a) (d) These requirements are not applicable to the 737-700.

91.609 Flight recorders and cockpit voice recorders

(a) The 737-700 flight data recorder and cockpit voice recorder meet the requirements in section 25.1457 and 25.1459.

(b) This requirement is operational in nature and as such compliance is not directly dependent on the 737-700 design.

(c) - (d) The 737-700 flight data recorder is designed and tested to meet all Part 25, 91, 121, and 125 requirements and approved per the requirements of section 25.1459.

(e) - (f) The 737-700 cockpit voice recorder is designed and tested to meet all Part 25, 91, 121, and 125 requirements and approved per the requirements of section 25.1457.

(g) This requirement is operational in nature and as such compliance is not directly dependent on the 737-700 design.

Appendix A Category II Operations: Manual, Instruments, Equipment and Maintenance

1. The Airplane Flight Manual provided with the 737-700 contains information relating to Category I, II, and III demonstrations.
2. 737-700 instrumentation includes controls and displays necessary to support this requirement.
3 All instruments will be approved for Category II operations upon delivery.
4. Maintenance programs are the responsibility of the airline and as such compliance is not directly dependent on the 737-700 design.

PART 121

Subpart G - Manual requirements

121.141 Airplane or rotorcraft flight manual

(a) The 737-700 will be furnished with an FAA approved Airplane Flight Manual as required per section 25.1581.
(b) This requirement is operational in nature, however the 737-700 design supports the carriage of manuals by providing stowage in the flight deck.

Subpart H - Aircraft requirements

121.157 Aircraft certification and equipment requirements

(a) This section applies to aircraft certified before June 1, 1942 and as such does not apply to the 737-700.
(b) Aircraft certified after June 1, 1942 must comply with 121.73 (a), (b), (d) and (e). Part 121.73 (b) applies to the 737-700. Refer below for compliance with 121.73 (b).
(c) - (e) These sections are not applicable to the 737-700 because they apply to C-46 type airplanes and helicopters.

121.161 Airplane limitations: Type of routes

(a) The 737-700 will be certified for ETOPS.
(b) The 737-700 will be certified under Part 25.

Subpart I - Airplane performance operating limitations

121.173 General

(a) This section applies to reciprocating engine aircraft and is not applicable to the 737-700.
(b) This section requires compliance with sections 121.189 through 121.197 and is applicable to the 737-700. Refer below to FARs 121.189 through 121.197 for specifics.
(c) This section applies to non-transport aircraft and is not applicable to the 737-700.
(d) This section requires compliance with sections 121.189 through 121.197 and is applicable to the 737-700. Refer below to FARs 121.189 through 121.197 for specifics.
(f) This section describes deviation methods and as such is not applicable to the 737-700 design. This requirement is operational in nature and as such compliance is not directly dependent on the 737-700 design.

121.189 Transport category airplanes: Turbine engine powered; takeoff limitations

(a) The 737-700 design and documentation in the Airplane Flight Manual provide the necessary information for operations which comply with this requirement.
(b) This section applies to aircraft certified after August 26, 1957 and before August 30, 1959 and therefore does not apply to the 737-700 design.
(c) - (d) The 737-700 design and the Airplane Flight Manual provides the necessary information for operations which comply with this requirement.
(e) - (g) This section provides definitions for determining compliance to this section.

121.191 Transport category airplanes: Turbine engine powered; enroute limitations: one engine inoperative

(a) The 737-700 design and documentation in the Airplane Flight Manual provide the necessary information for operations which comply with this requirement.

(b) This section provides definitions for determining compliance to this section.

121.195 Transport category airplanes: Turbine engine powered; Landing limitations: Destination airports

(a) - (b) The 737-700 design and the Airplane Flight Manual contain the necessary information for operations which comply with this requirement.

(c) This section applies to turbopropeller powered airplanes and does not apply to the 737-700.

(d) - (e) These requirements are operational in nature and as such compliance is not directly dependent on the 737-700 design.

121.197 Transport category airplanes: Turbine engine powered; Landing limitations: Alternate airports

The 737-700 design and documentation provide the necessary information to determine whether the operation can be conducted with the 737-700 airplane.

Subpart K - Instruments and Equipment Requirements

121.305 Flight and navigation equipment

■ (j). 737-700 instrumentation design provides the necessary controls and displays to meet this requirement.

■

121.307 Engine instruments

(a) - (c) 737-700 engine instrumentation is designed in accordance with 25.1305© and does not have carburetor air, head temperature indications or fuel pressure indications for each engine.

(d) - (e) 737-700 engine instrumentation design has the necessary controls and displays to meet this requirement.

(f) This requirement is not applicable to the 737-700.

(g) - (k) 737-700 engine instrumentation design has the necessary controls and displays to meet this requirement.

(l) This requirement is not applicable to the 737-700.

121.308 Lavatory fire protection

(a) Each lavatory is equipped with a smoke detector which will provide an aural alert in the lavatory and cabin and additionally a light at the associated attendant station.

(b) Each lavatory has an automatic fire extinguisher located in the waste container cabinet.

121.309 Emergency equipment

(a) The 737-700 will provide the emergency equipment listed in this section and in 121.320. Any exceptions to these requirements are listed below.

(b)(1) This requirement is operational in nature and as such compliance is not directly dependent on 737-700 design.

(b)(2)-(b)(3) Emergency and flotation equipment will be readily accessible with its method of operation clearly marked.

(b)(4) This requirement is operational in nature and as such compliance is not directly dependent on 737-700 design.
(c)(1) Water and Halon fire extinguishers will be located throughout the passenger cabin and flight deck.
(c)(2) This requirement is not applicable to the 737-700. The cargo compartment is not accessible to crewmembers during flight.
(c)(3)-(c)(5) 737-700 design provides locations for hand fire extinguishers that meets these requirements.
(d) Two first aid kit locations and one medical kit location are provided on the 737-700. First aid kits are buyer furnished equipment (BFE).
(e) A crash ax is located in the flight deck.
(f) Two megaphone locations, one at the front and one at the rear of the passenger cabin are provided on the 737-700.

121.310 Additional emergency equipment

(a) Each passenger entry door emergency evacuation slide/raft and door opening system contains an assisting means as specified in section 25.809(f).
(b) Interior exit emergency markings are approved per sections 25.811 and 25.812.
(c) Lighting for interior exit emergency markings is approved per section 25.812.
(d) Emergency lighting is controlled by an Emergency Exit Lights switch in the flight deck. This switch can be used to manually activate or arm the system for automatic operation. In addition, a switch on the aft attendants panel will also illuminate emergency lights.
(e) Emergency exit operating handles are approved per section 25.811(e).
(f) Access to emergency exits is approved per section 25.813.
(g) Exterior exit markings are approved per section 25.811(f).
(h) Exterior emergency lighting is approved per section 25.812(g).
(i) Each of the passenger emergency exits is approved per the requirements in Part 25.
(j) This requirement does not apply to the 737-700 as there are no emergency exits in the passenger compartment in excess of the minimum required.
(k) This requirement is not applicable to the 737-700 because there are no ventral or tailcone exits in the passenger compartment.
(l) Each attendant seat bustle contains a flashlight.
(m) No passenger emergency exit is more than 60 feet from any adjacent passenger emergency exit on the same side of the fuselage.

121.311 Seats, safety belt, and shoulder harnesses

(a) These requirements are operational in nature, however the 737-700 passenger seats and safety belts meet the requirements of section 25.562 and 25.785.
(b) - (c) These requirements are operational in nature and as such compliance is not directly dependent on the 737-700 design.
(d) This requirement is not applicable to the 737-700 because there are no side facing seats.
(e) This requirement is operational in nature and as such compliance is not directly dependent on the 737-700 design.
(f) - (g) The flight deck station and flight attendant seats comply with section 25.785. This requirement is operational in nature. Pilot reach to controls with belts fastened is compliant with section 25.777(c).

(i) This requirement is operational in nature, however the flight deck station seats provide the ability to secure the buckle and shoulder harnesses when not in use.

121.312 Materials for compartment interiors

(a) - (b) Materials in compartments used by crewmembers or passengers meet the requirements in section 25.853.

121.313 Miscellaneous equipment

(a) Fuses are not installed on the airplane therefore this requirement is not applicable to the 737-700.
(b) A windshield wiper is installed for each pilot's front window.
(c) The power supply and distribution system is compliant with the specified part 25 FARs.
(d) Displays will not operate without adequate power. Electrical power source failures are annunciated on the Master Caution Switch.
(e) Three pairs of static ports are located on each side of the airplane and are cross-plumbed to pneumatically average the static pressure on each side of the airplane to eliminate the impact of maneuvering and out of trim flight. The 737-700 does not have source selection for the static pressure system.
(f) The flight deck door between the passenger compartment and the flight deck has an electric lock latch mechanism, controlled by a CAB DOOR UNLOCKED switch on the aft aisle stand panel.
(g) A key to the flight deck door will be located outside the flight deck and be accessible to the flight attendants.
(h) This requirement is not applicable to the 737-700 because there is no door that is a means of access to a required passenger emergency exit.
(i) A means to unlock the lavatory doors will be located outside each door.

121.314 Cargo and baggage compartments

(a) - (b) Cargo and baggage compartments ceiling and sidewall liner panels are constructed of glass fiber reinforced resin and meet the test requirements of the specified Part 25 requirements.

121.315 Cockpit check procedure

(a) This requirement is operational in nature, however the 737-700 is furnished with cockpit normal and non-normal procedures as part of the Airplane Flight Manual, and Boeing Operations Manual supplied with the airplane.
(b) Normal and non-normal checklists are provided. Normal checklists will be used to verify that certain critical procedural steps have been accomplished. Non-normal procedures will be used by the flight crew to cope with non-normal situations, including engine and system emergencies.
(c) This requirement is operational in nature, however the 737-700 includes stowage provisions for the procedures specified in this requirement.

121.316 Fuel tanks

The 737-700 meets the requirements specified in 25.963(e).

121.317 Passenger information

(a) The 737-700 is compliant with section 25.791. The passenger cabin signs are controlled by overhead panel selectors in the flight deck.
(b) - (c) These requirements are operational in nature and as such compliance is not directly dependent on the 737-700 design.
(d) The 737-700 is compliant with section 25.791.
(e) This placard is installed on the lavatory ceiling next to the smoke detector.
(f) - (k) These requirements are operational in nature and as such compliance is not directly dependent on the 737-700 design.

121.318 Public address system

(a) Operation of the PA system is independent from operation of the crew interphone system.
(b) The PA system will comply with FAR 21.305 (c).
(c) The location of the PA handset or microphone in the flight deck supports this requirement. The pilot's audio control panels are located on the aft electronic panel.
(d) The attendant stations are equipped with a PA handset.
(e) Operation of the PA can be accomplished within 10 seconds.
(f) Speakers located in the passenger cabin and lavatories ensure the PA system is compliant with this requirement.
(g) The PA system complies with FAR 25.1423.

121.319 Crewmember interphone system

(a) The crew interphone system operation is independent from the PA system operation.
(b) The crew interphone system complies with FAR 21.305 (c) and meets the additional requirements of this subparagraph.

121.323 Instruments and equipment for operations at night

(a) The 737-700 is equipped with white position lights on the rear wing tip of each wing. The left forward wing tip has a red navigation position light. The right forward wing tip has a green navigation position light.
(b) A red strobe anti-collision light is located on the top and bottom of the fuselage.
(c) Left and right landing lights are located in the left and right wing root and optimized for flare and ground roll.
(d) The 737-700 is equipped with lighting controls for all displays and panels. In addition, the main displays, CDU's, and mode control panel displays have automatic brightness controls. To reduce reflections anti-reflective coatings are used to reduce reflections and glare off the displays.
(e) Airspeed is provided to the primary displays by two pitot and two static air data modules (ADM) through the ADIRU. In normal operations, the displayed airspeed will be based on inputs from all four ADMs. In addition, airspeed is provided to the standby airspeed indicator through a dedicated pitot ADM and a dedicated static ADM. Pitot heat is provided to the left, right, and standby pitot ADMs.
(f) Altitude is provided to the primary displays by two static ADMs through the ADIRU. In normal operations, displayed altitude will be based on both static ADMs. In addition, altitude is provided to the standby altimeter through a dedicated static ADM.

121.325 Instruments and equipment for operations under IFR or over-the-top

(a) Airspeed is provided to the primary displays by two pitot and two static air data modules (ADM) through the ADIRU. In normal operations, the displayed airspeed will be based on inputs from all four ADMs. In addition, airspeed is provided to the standby airspeed indicator through a dedicated pitot ADM and a dedicated static ADM. Pitot heat is provided to the left, right, and standby pitot ADMs. Altitude is provided to the primary displays by two static ADMs through the ADIRU. In normal operations, displayed altitude will be based on both static ADMs. In addition, altitude is provided to the standby altimeter through a dedicated static ADM.

(c) The 737-700 is equipped with lighting controls for all displays and panels. In addition, the main displays, CDU's, and mode control panel displays have automatic brightness controls. To reduce reflections anti-reflective coatings are used to reduce reflections and glare off the displays.

121.329 Supplemental oxygen for sustenance: turbine engine powered airplanes

(a)(1) The amount of oxygen provided will contain the quantity necessary to comply with paragraphs (b) and (c).

(a)(2)-(a)(3) The basic chemical passenger oxygen system and the flight crew oxygen system will provide the required quantity of oxygen dependent on the customer's intended route structure.

(a)(4) The basic chemical passenger oxygen system and the flight crew oxygen system is designed and approved per section 25.1441(d).

(b)(1) - (b)(2) The flight crew oxygen system will provide the required quantity of oxygen dependent on the customer's intended route structure.

(b)(3) This requirement is operational in nature and as such compliance is not directly dependent on the 737-700 design.

(c) See response to section 121.329(a)(2).

121.333 Supplemental oxygen for emergency descent and for first aid; turbine engine powered airplanes with pressurized cabins

(a) See response to (b) through (e).

(b) Flight crew oxygen systems are sized to meet the requirements of this requirement (it is one of the primary sizing parameters).

(c)(1) The 737-700 is approved per the requirements in section 25.1447(c)(2).

(c)(2) The 737-700 is approved per the requirements in section 25.1447(c)(2) through ((c)(4).

(c)(3) - (c)(4) These requirements are operational in nature and as such compliance is not directly dependent on the 737-700 design.

(d) Portable oxygen equipment will be available for each required cabin attendant (per 25.1447 (c)(4). For supplemental use during an emergency descent, cabin attendants will use either the oxygen masks that drop at the attendant stations, or for mobility, the spare mask at each passenger seat group.

(e)(1) - (e)(2) The basic chemical passenger oxygen system will be sized to meet requirements based on the customer's intended route structure.

(e)(3) The number and size of portable oxygen bottles will be determined based on these requirements, or 25.1447 (c)(4) whichever is larger.

(h) This requirement is operational in nature and as such compliance is not directly dependent on the 737-700 design.

121.335 Equipment standards

(a) This requirement is for reciprocating engine powered airplanes and does not apply to the 737-700.
(b) The oxygen system meets the equipment standards of section 25.1443.

121.337 Protective breathing equipment

(a) - (b) The protective breathing equipment is buyer furnished equipment (BFE) which must be approved per TSO-C99 (mask and goggles) and TSO-C116 (smoke hoods).
(c) - (d) These requirements are operational in nature and as such compliance is not directly dependent on the 737-700 design.

121.339 Emergency equipment for extended over-water operations

(a) The 737-700 will provide a life preserver equipped with a survivor locator light for each occupant of the airplane, slide/rafts that cover rated capacity, pyrotechnic signaling device for each raft, and an approved emergency locator transmitter.
(b) Slide/rafts will be located at each passenger emergency exit with life preservers located under each passenger seat. Emergency locator transmitters will be located adjacent to emergency exits.
(c) A survival kit will be contained within each slide/raft unit.

121.340 Emergency floatation means

(a) A life vest will be located under each passenger seat.
(b) This requirement is operational in nature and as such compliance is not directly dependent on the 737-700 design.

121.341 Equipment for operations in icing conditions

(a) The 737-700 complies with the FAR part 25 requirements relating to ice protection.
(b) This requirement is operational in nature, however the 737-700 has wing lights installed on the fuselage that will illuminate the leading edge of the wing.

121.342 Pitot heat indication system

(a) The 737-700 complies with section 25.1326 and provides caution level alerts for failure of one or more pitot probe heat systems on a dedicated overhead panel. This requirement is not applicable to the 737-700 because of its date of certification.

121.343 Flight recorders

(a) The 737-700 flight data recorder is designed and tested to meet all Part 25, 91, 121, and 125 requirements and approved per the requirements of section 25.1459.
(b) - (c) These requirements do not apply to the 737-700 because the more restrictive requirement (d) is applicable (see below).
(d) - (g) The 737-700 flight data recorder is designed and tested to meet all Part 25, 91, 121, and 125 requirements and approved per the requirements of section 25.1459.

(h) - (i) These requirements are operational in nature and as such compliance is not directly dependent on the 737-700 design.
(j) - (k) The 737-700 flight data recorder is designed and tested to meet all Part 25, 91, 121, and 125 requirements and approved per the requirements of section 25.1459.

121.345 Radio equipment

(a) This requirement is operational in nature and as such compliance is not directly dependent on the 737-700 design.
(b) The radio systems installed on the 737-700 will have either separate antenna installations or share rigid antennas.
(c) ATC transponder equipment is classified as mode S.

121.347 Radio equipment for operations under VFR over routes navigated by pilotage

(a) The 737-700 contains radio equipment capable of communicating with an appropriate ground station or traffic control facility and be able to receive meteorological information at any point on the route.
(b) The necessary radio equipment is installed to receive navigational signals. The comm devices required under paragraph (a) are operative at night.

121.349 Radio equipment for operations under VFR over routes not navigated by pilotage and for operations under IFR or over-the-top

(a) Radio equipment required under section 121.347(a) is active for this condition. Dual redundant ADF, VOR, and DME are installed. Dual redundant ILS and marker beacon receivers are installed.
(b) Two VORs and at least one ADF are installed.
(c) Two scanning DMEs are installed. This requirement is operational in nature and as such compliance is not directly dependent on the 737-700 design.

121.351 Radio equipment for extended overwater operations and certain other operations

(a) - (b) The 737-700 will be equipped with the radio equipment necessary to comply with 121.349 and contain an independent system that complies with 121.347.

121.353 Emergency equipment for operations over uninhabited terrain areas: flag and supplemental air carriers and commercial operators

(a) Each slide/raft will contain a pyrotechnic signaling device.
(b) There will be a minimum 2 survival type emergency locator transmitters furnished with the 737-700.
(c) This requirement is operational in nature due to the intended airline routes, however each slide/raft will contain a survival kit.

121.355 Equipment for operations on which specialized means of navigation are used

(a)(1) The ADIRU complies with the requirements of FAR 121.355 Appendix G.
(b) This requirement is not applicable to the 737-700.

121.356 Traffic alert and collision avoidance equipment requirements

(a) The 737-700 is equipped with an approved TCAS II and the appropriate Mode S transponder.
(b) This requirement is not applicable to the 737-700.
(c) Information as to procedures and input sources required for the TCAS to function properly is provided in manuals as required by 121.131.

121.357 Airborne weather radar equipment requirements

(a) The 737-700 is equipped with a weather radar system certified to TSO-C63B.
(b) This requirement is not applicable to the 737-700.
(c) - (e) These requirements are operational in nature and as such compliance is not directly dependent on the 737-700 design.

121.358 Low-altitude windshear equipment requirements

(a) The 737-700 is equipped with an approved airborne windshear warning system.
(b) - (d) These requirements are not applicable to the 737-700 because of its date of manufacture.

121.359 Cockpit voice recorders

(a) The 737-700 cockpit voice recorder is designed and tested to meet all Part 25, 91, 121, and 125 requirements and approved per the requirements of section 25.1457.
(b) This requirement is not applicable to the 737-700 because it is installed with a cockpit voice recorder that meets the requirements of paragraph (a).
(c) - (e) The 737-700 cockpit voice recorder is designed and tested to meet all Part 25, 91, 121, and 125 requirements and approved per the requirements of section 25.1457.
(f) This requirement is operational in nature and as such compliance is not directly dependent on the 737-700 design.

121.360 Ground proximity warning-glide slope deviation alerting systems

(a) The 737-700 is equipped with a TSO approved ground proximity warning system.
(b) This requirement is not applicable to the 737-700 because of its date of certification.
(c) The Airplane Flight Manual will contain the appropriate procedures for items (c)(1)(i) through (c)(1)(iv) and provide an outline of all input sources that must be operating.
(d) - (e) These requirements are operational in nature and as such compliance is not directly dependent on the 737-700 design.
(f) The 737-700 is equipped with a ground proximity warning glide slope deviation alerting system that meets the requirements of this subparagraph.
(g) - (h) These requirements are not applicable to the 737-700 because of its date of certification.
(i) The ground proximity warning glide slope deviation alerting system meets the requirements of this subparagraph.

Subpart L - Maintenance, Preventive Maintenance and Alterations

121.369 Manual requirements

(a) - (c) These requirements are operational in nature and as such compliance is not directly dependent on the 737-700 design.

Subpart T - Flight Operations

121.574 Oxygen for medical use by passengers

(a) - (c) These requirements are operational in nature and as such compliance is not directly dependent on the 737-700 design.

121.576 Retention of items of mass in passenger and crew compartments

The 737-700 complies with the requirements in section 25.787.

121.577 Food and beverage service equipment during takeoff and landing

(a) - (e) These requirements are operational in nature and as such compliance is not directly dependent on the 737-700 design.

121.578 Cabin ozone concentration

(a) - (c) The 737-700 meets the cabin ozone requirements of section 25.832.

(d) - (e) These requirements are operational in nature and as such compliance is not directly dependent on the 737-700 design.

121.581 Forward observer's seat: enroute inspections

The forward observer's seat complies with these requirements.

121.587 Closing and locking of flight crew compartment door

(a) - (b) These requirements are operational in nature and as such compliance is not directly dependent on the 737-700 design.

121.589 Carry-on baggage

(a) - (e) These requirements are operational in nature and as such compliance is not directly dependent on the 737-700 design.

(f) The 737-700 complies with the requirements in section 25.787.

(g) This requirement is operational in nature and as such compliance is not directly dependent on the 737-700 design.

PART 125
Subpart C - Manual Requirements

125.75 Airplane Flight Manual
(a) The 737-700 is furnished with an FAA approved Airplane Flight Manual as required per section 25.1581.
(b) This requirement is operational in nature, however the 737-700 design supports the carriage of manuals by providing stowage in the flight deck.

Subpart D - Airplane Requirements

125.93 Airplane limitations
The 737-700 will have an approved DITCHING PREPARATION non-normal procedure in the Boeing Operations Manual.

Subpart E - Special Airworthiness Requirements

125.183 Carriage of cargo in passenger compartments
(a) - (c) These requirements are operational in nature and as such compliance is not directly dependent on the 737-700 design.

125.185 Carriage of cargo in cargo compartments
This requirement is not applicable to the 737-700 as the cargo compartment is not designed for entry by a crewmember to extinguish a fire during flight.

Landing gear: aural warning device
(a) - (c) These requirements are not applicable as the 737-700 complies with the requirements of section 25.729.

125.189 Demonstration of emergency evacuation procedures
(a) - (b) Demonstration of emergency evacuation procedures will be conducted as required in this section.
(c) - (d) These requirements are airline dependent.

Subpart F - Instrument and Equipment

125.203 Radio and navigation equipment

(a) Three independent VHF radios provide two-way radio communications up to a line of sight distance to the horizon.
(b) Over-the-top operations are supported with the required radio navigation equipment.
(c) - (d) The 737-700 contains the radio communication and navigational equipment necessary to support these requirements.

125.205 Equipment requirements: airplanes under IFR

(a) Vertical speed is indicated at each pilot's station.
(b) Total air temperature is indicated on the Engine display.
(c) The air data inertial reference system contains three heated pitot probes (2 primary, 1 standby).
(d) If AC power to the air data inertial reference unit (ADIRU) fails, the ADIRU will be powered by the DC standby hot battery bus. ADIRU failure will cause the "On DC" caution message to be displayed to the flight crew on a dedicated overhead panel.
(e) Two air data modules (ADM) serve as the sources of static pressure for the flight displays; an independent port provides static pressure input to the standby displays.
(f) An integrated drive generator (IDG) on each engine and an auxiliary power unit (APU) generator are installed and rated at 90 KVA. Each individual generator is able to provide sustained non-essential loads.
(g) The engine IDG's are independent as is the APU generator.
(h) This definition is consistent with compliance to paragraph (f).
(i) The air data inertial reference system contains three heated pitot probes (2 primary, 1 standby).
(j) Barometric pressure is sensed by the two static air data modules and the standby static air data module.

The 737-700 is equipped with lighting controls for all displays and panels. In addition, the main displays, CDU's, and mode control panel displays have automatic brightness controls. To reduce reflections anti-reflective coatings are used to reduce reflections and glare off the displays.

125.206 Pitot heat indication systems

(a) The 737-700 complies with section 25.1326 and provides caution level alerts for failure of one or more pitot probe heat systems on a dedicated overhead panel.
(b) This requirement is not applicable to the 737-700 because of its date of certification.

125.207 Emergency equipment requirements

(a) Two first aid kit locations and one medical kit location will be provided in the passenger cabin. First aid kits are buyer furnished equipment (BFE). A crash ax is located in the flight deck. Passenger signs compliant with section 25.791 are provided with the signs controlled by overhead panel selectors in the flight deck. The 737-700 is compliant with the additional emergency equipment specified in Appendix A.
(b) Two megaphone locations, one at the front and one at the rear of the passenger cabin will be provided. Megaphones are buyer furnished equipment (BFE).

125.209 Emergency equipment: extended overwater operations

(a)(1) A life preserver with a survivor locator light will be provided under each passenger seat.

(a)(2) Slide/rafts will be approved under the requirements in TSO-C69B.

(b) This requirement is operational in nature, however a survival type emergency locator transmitter will be on the 737-700.

125.211 Seat and safety belt

(a) These requirements are operational in nature, however the 737-700 passenger seats and safety belts meet the requirements of sections 25.562 and 25.785.

(b) - (c) These requirements are operational in nature and as such compliance is not directly dependent on the 737-700 design.

(d) This requirement is not applicable to the 737-700 because there are no side facing seats.

(e) This requirement is operational in nature and as such compliance is not directly dependent on the 737-700 design. This requirement is operational in nature and as such compliance is not directly dependent on the 737-700 design. Passenger seats do not include shoulder harnesses. Flight attendant seat shoulder harnesses are required per section 25.785(h)(6); flight deck station seats shoulder harnesses are required per section 25.785(g).

125.213 Miscellaneous equipment

(a) This requirement is not applicable to the 737-700 because fuses are not installed on the airplane.

(b) A windshield wiper is installed for each pilot's front window.

(c) The power supply and distribution system are compliant with the specified part 25 FARs.

(d) Displays do not operate without adequate power. Electrical power source failures are annunciated on the Master Caution Switch.

(e) Three pairs of static ports are located on each side of the airplane and are cross-plumbed to pneumatically average the static pressure on each side of the airplane to eliminate the impact of maneuvering and out of trim flight. The 737-700 does not have source selection for the static pressure system.

(f) This requirement is not applicable to the 737-700 because there is no door that is a means of access to a required passenger emergency exit.

(g) A means to unlock the lavatory doors will be located outside each door.

125.215 Operating information required

(a) These requirements are operational in nature, however the 737-700 will be furnished with cockpit normal and non-normal procedures, and one engine inoperative performance data as part of the Airplane Flight Manual.

(b) The 737-700 normal procedures checklist contains the procedures to meet this requirement.

(c) The 737-700 non-normal procedures contain the categories of procedures specified in this requirement.

125.217 Passenger information

(a) This requirement is operational in nature, however the 737-700 is compliant with section 25.791, with the passenger cabin signs controlled by overhead panel selectors in the flight deck.
(b) - (d) These requirements are operational in nature and as such compliance is not directly dependent on the 737-700 design.

125.219 Oxygen for medical use by passengers

(a) - (e) These requirements are operational in nature and as such compliance is not directly dependent on the 737-700 design.

125.221 Icing conditions: Operating limitations

(a) - (b) These requirements are operational in nature and as such compliance is not directly dependent on the 737-700 design.
(c) - (d) The 737-700 complies with the FAR part 25 requirements relating to ice protection.
(e) This requirement is operational in nature and as such compliance is not directly dependent on the 737-700 design.

125.223 Airborne weather radar equipment requirements

(a) The 737-700 is equipped with a weather radar system certified to TSO C63B.
(b) - (d) These requirements are operational in nature and as such compliance is not directly dependent on the 737-700 design.
(e) This requirement is not applicable to the 737-700.

125.224 Traffic alert and collision system

(a) The 737-700 is equipped with an approved TCAS II and the appropriate Mode S transponder.
(b) Information as to procedures and input sources required for the TCAS to function properly is provided in manuals as required by 125.71.

125.225 Flight recorder

(a) - (c) These requirements are not applicable to the 737-700 because the more restrictive requirement (d) will be applicable (see below).
(d) The 737-700 flight data recorder is designed and tested to meet all Part 25, 91, 121, and 125 requirements and approved per the requirements of section 25.1459.
(f) - (g) These requirements are operational in nature and as such compliance is not directly dependent on the 737-700 design.
(h) - (i) The 737-700 flight data recorder is designed and tested to meet all Part 25, 91, 121, and 125 requirements and approved per the requirements of section 25.1459.

125.227 Cockpit voice recorders

(a) The 737-700 cockpit voice recorder is designed and tested to meet all Part 25, 91, 121, and 125 requirements and approved per the requirements of section 25.1457.
(b) This requirement is operational in nature and as such compliance is not directly dependent on the 737-700 design.
(c) - (e) The 737-700 cockpit voice recorder is designed and tested to meet all Part 25, 91, 121, and 125 requirements and approved per the requirements of section 25.1457.

(f) This requirement is operational in nature and as such compliance is not directly dependent on the 737-700 design.

Subpart G - Maintenance

125.249 Maintenance manual requirements

(a) - (b) These requirements are operational in nature and as such compliance is not directly dependent on the 737-700 design.

Subpart H - Airman and Crewmember Requirements

125.269 Flight attendants

(a) - (b) These requirements are operational in nature and as such compliance is not directly dependent on the 737-700 design.

(c) This requirement is operational in nature, however flight attendant seats are located next to emergency exits.

Subpart J - Flight Operations

125.327 Briefing of passengers before flight

(a) - (e) These requirements are operational in nature and as such compliance is not directly dependent on the 737-700 design.

125.329 Minimum altitudes of autopilot

(a) - (d) These requirements are operational in nature and as such compliance is not directly dependent of the 737-700 design. However, the 737-700 Airplane Flight Manual provides certificate limitations as to minimum altitude autopilot engagement.

MISCELLANEOUS ADVISORY CIRCULARS

AC	Title	Remarks
AC 00-50A	Low Level Wind Shear	Recommended aircraft operating procedures are consistent with this AC and the FAA "Windshear Training Aid" - Windshear alerting and flight guidance system installed meets FAR 121.358; CHDO for operator procedures.
ACs 20-129, 20-130, 25-15 and 90-45A	VNAV/Multi Sensor Navigation Systems in US NAS/FMS/Area Navigation	Meets or exceeds all requirements for enroute or approach area navigation systems when radio updating is taking place, including use of VNAV and LNAV modes. Aircraft may file "/R" flight plan suffix for routes having suitable VOR/DME coverage.
AC 90-79	Use of Electronic Navigation in Remote Areas	Aircraft systems and procedures are consistent with this AC.
AC 90-101	Approval Guidance For RNP Procedures with SAAAR	-600 through -900ER series aircraft systems and procedures are consistent with this AC; CHDO.
AC 91-6A	Water. Slush, and Snow on Runway	Aircraft systems and recommended procedures are consistent with this AC. Consideration of use of "minimum V1" concept is recommended by the manufacturer.
AC 91-53	Noise Abatement Departure Profile	Aircraft systems and recommended procedures are consistent with this AC.
AC 120-28D	Category III	FAA Approved AFM lists systems, equipment, configurations, and recommended procedures which were demonstrated and found acceptable; other provisions of AC 120-28D - CHDO. Cat III minima are based on use of "fail passive" autoland, and are limited to Cat IIIa.
AC 120-29	Category II	FAA Approved AFM lists systems, equipment, configurations, and recommended procedures which were demonstrated and found acceptable; other provisions of AC 120-29 - CHDO.
AC 120-33	Navigation Systems For Use In MNPS Airspace	Some B737-400/500 and 737-NG aircraft with multiple IRS, ACDU, and FMS may satisfy provisions of this AC; CHDO.
AC 120-35A	LOFT	B737 FSB provisions related to LOFT are addressed by paragraph 6.5.1 of this report; CHDO.
AC 120-38	Cabin Ozone Concentrations	B737-400/500 and B737-NG aircraft meet requirements of FAR 121.578 by limiting or

AC	Title	Remarks
		avoiding flight in areas where high cabin ozone concentration could occur; CHDO.
AC 120-42A	Extended Range Operation with Two-Engine Airplanes (ETOPS)	Means to obtain approval to operate two-engine airplanes over a route that contains a point farther than one hour flying time from an adequate airport; CHDO.
AC 120-53	Crew Qualification and Pilot Type Rating Requirements for Transport Category Aircraft Operated Under FAR Part 12	Provides an acceptable means regarding qualification and type rating of flight crewmembers operating under Part 121 of the FAR; AEG.
AC 121-13	Self Contained Navigation Systems/INS	Some B737-400/500 and 737-NG aircraft with multiple IRS, ACDU, and FMS may satisfy provisions of this AC; CHDO.
AC 121-31	Flightcrew Sleeping Quarters and Rest Facilities	Regards the adequacy of onboard sleeping quarters for compliance with FAR121.485(a) and 121.523(b).

FAA DIRECTIVES, POLICIES, AND US AIRMAN's INFORMATION MANUAL:

1) B737s are considered "large, non-heavy" aircraft and flight plans should be so designated. Wake turbulence characteristics are similar for all B737 series.
2) For some B737 aircraft, airspeeds in excess of US standard limits (e.g. holding below 14,000 MSL...) may require crew requests for ATC deviation from speed limits when operating at heavy gross weights.
3) Flight Plan designators are B737 for all series. No unique air traffic requirements are applicable to the B737.
4) Order 7110.118 (Land and Hold Short Operations) places B737 aircraft into categories 7 and 8.

APPENDIX 4

EXAMPLE HUD TRAINING PROGRAM

HEAD UP DISPLAY TRAINING PROGRAM

The HUD pilot training requirements consists of those related to initial and recurrent ground and flight training. Unless covered concurrently during an initial or transition type rating course, a prerequisite to beginning this course of training is prior training, qualification and currency in the B-737 airplane. It should be noted that the program focuses principally upon training events flown in the left seat by the pilot-in-command (PIC) in FAR 121 operations. Nevertheless, first officer indoctrination and training is also essential.

1. INITIAL GROUND TRAINING: For airline operators, initial training should be conducted in accordance with the applicable provisions of FAR 121.415, 121.419, 121.424, 121.427, FAA AC 120-28C and the airline operation specifications. For all operators, the initial ground training program should include the following elements:

   A. Classroom instruction covering HUD operational concepts, crew duties and responsibilities and operational procedures including preflight, normal and non-normal pilot activities. For operators wishing credit for low visibility operations predicated on use of the HUD, information should be provided on the operational characteristics, capabilities, and limitations of the ground facilities (surface movement guidance control system) and airborne CAT III system. Airline policies and procedures concerning low visibility operations should include a reporting process, MEL issues, operation following a missed approach, IOE and currency requirements.

   B. Classroom instruction (or CBT) on the HUD symbology set and it's inter-relationship with airplane aerodynamics, inertial factors and environmental conditions.

   C. A HUD pilot training manual or equivalent material in the Operations Manual which explains all modes of operation, the use of various HUD controls, clear descriptions of HUD symbology including limit conditions and failures, and incorporating a crew procedures guide clearly delineating pilot-flying (PF) and pilot-not-flying (PNF) duties, responsibilities and procedural call-outs and responses during all phases of flight during which HUD operations are anticipated. Emphasis on the availability and limitations of visual cures encountered on approach both before and after DH. This would include:

- procedures for unexpected deterioration of conditions to less than minimum RVR encountered during approach, flare and rollout
- demonstration of expected visual references with weather at minimum conditions
- expected sequence of visual cues during an approach in which visibility is at or above landing minima.

   D. A video tape demonstrating all modes of operation complete with sound. For operators wishing credit for low visibility operations predicated on use of the HUD,

this should include narrative descriptions and several low weather approach demonstrations with procedural call-outs and responses. All critical procedural call-out possibilities should be covered.

E. If the HUD is used as a CAT II/CAT III landing system, emphasis on the need for rigorous crew discipline, coordination and adherence to procedural guidelines as is required for other CAT II/CAT III landing systems.

2. Initial Flight Training: Unless integrated with initial or transition type rating training, flight training dedicated to HUD familiarization and proficiency is in addition to other required elements. For FAR 121 operators, initial flight training should be conducted in accordance with the applicable provisions of FAR 121.424. Flight training dedicated to HUD familiarization and proficiency is in addition to other required elements. When a simulator is used, only FAA approved B-737 simulators with both a visual and the Heads Up Guidance System installed may be used. For flight simulator training, all required approaches should be flown from no closer than the final approach fix (FAF) for instrument approaches and from no closer than approximately 1000 feet AGL (3 - 4 NM) to the runway threshold for visual approaches.

The following flight training program is generic in nature and should not be construed to dictate what the flight course of instruction must consist of. Each operator has his own unique requirements, route structure, fleet composition and operations policies to consider in developing their training program. Therefore, what follows might be considered as a guide to an operator who is tailoring a HUD training program to fit his own needs.

A. Airwork - Airwork should include:

- Straight and level flight, accelerations and decelerations
- Normal and steep turns, climbs and descents
- Approach to stall and recovery and unusual attitudes
- Vectors to intercept and track selected VOR courses

Note: Emphasis should be placed on HUD unique symbology, i.e., flight path, flight path acceleration, airspeed error tape, AOA limit bracket, and excessive pitch chevrons. When this training is complete, the trainee should have a thorough understanding of the relationship between aircraft flight path parameters and the HUD symbology.

B. Visual Approaches (VMC mode)

- Perform one approach showing deviations above and below glideslope for symbology/runway relationship
- Straight-in landings, no wind, repeat with 10 kt cross wind and at night
- Circling approaches and landing with 10 kt crosswind

Note: It is desirable to fly half of these approaches at different airports that have dissimilar approach and runway lighting systems. Special emphasis should be placed on optimizing circling approach techniques and procedures. Approaches with the aircraft in an non-normal flap configuration should be included.

C. Instrument Approaches:

➢ a) For all operators.

- Perform a CAT I approach to 200 foot DH, 2400 RVR, wind calm
- Demonstrate failures and incorrect settings on approach, i.e., mis-set runway elevation, airspeed, selected course, etc.
- Illustrate unique characteristics of symbology in wind shear conditions, i.e., erratic wind speed and direction, flight path, flight path acceleration and speed error, etc.
- Non-precision approach, VOR approach, 600-2, 15 knot crosswind

➢ b) For operators wishing credit for low visibility operations predicated on use of the HUD.

- Perform a CAT II approach to 100 foot DH, 1200 RVR, 5 - 10 kts crosswind
- Perform a CAT IIIa ILS approach and landing starting on a 30 degree intercept to the ILS, below glideslope, weather clear and calm
- CAT IIIa ILS with 700 RVR, wind calm - another ILS with a 10 knot crosswind
- CAT IIIa ILS with 0/0 weather. After touchdown, raise weather to demonstrate position on runway
- CAT IIIa ILS with various reasons for a missed approach (system downgrade, "APCH WARN", etc.)
- CAT IIIa ILS with various RVRs and crosswinds, include light turbulence

Note: Several of the instrument approaches should include a variety of ground and airborne system failures requiring pilot recognition and appropriate procedural actions. Demonstrate system/component failures could include flap asymmetry problems, engine out operations, HGS sensor failures, etc. Demonstration how HUD failure modes can reduce precision and increase pilot workload unless PF/PNF duties and responsibilities are clearly delineated and understood.

D. Takeoff: For operators wishing credit for low visibility takeoff operations predicated on use of the HUD.

- Normal takeoff, clear and calm, repeated with gusty winds
- Takeoff, 600 foot RVR, 5 knot crosswind

- Takeoff, 300 foot RVR, 5 knot crosswind, engine failure prior to V1
- Takeoff, 300 foot RVR, 5 knot crosswind, engine failure after V1
- Takeoff with HGS failure, 300 foot RVR

For airline operators; within 60 days subsequent to completion of HUD training, pilots must have completed their Initial Operating Experience (IOE) for HUD CAT II/IIIa operations. All previously qualified (in aircraft) pilots should be certified upon satisfactory completion of the HUD ground and flight training programs.

All initial, upgrade and transition captains must be certificated by a check airman during their IOE. This requirement should include three HUD assisted takeoffs: one visual approach and three instrument approaches in conditions not less than RVR 1800. First Officers should be certificated to perform Category II/IIIa PNF duties upon satisfactory completion of the HUD training program.

For all operators; prior to utilizing the HUD in IMC conditions below RVR 1800, each PIC must accomplish at least twenty-five manually flown HUD approaches to Category II/IIIa minima in VMC conditions. Each approach must terminate in a manually controlled HUD assisted landing or HUD assisted go-around. In addition, each PIC must accomplish at least twenty-five HUD assisted takeoffs in VMC conditions prior to using the HUD mode in IMC conditions. Upon completion of this requirement the HUD qualified pilot would then be certificated to conduct HUD approaches to company authorized minima as set forth in their Operations Specifications.

RECURRENCY REQUIREMENTS

For operators wishing credit for low visibility operations on use of the HUD, during the six month recurrent training and proficiency checks, the following low visibility operations should be performed in addition to regular requirements:

- Approach and landing, 700 foot RVR, 10 knot crosswind
- Approach, 700 foot RVR, 10 knot crosswind, light turbulence with missed approach
- Takeoff, 300 foot RVR, 10 knot crosswind
- Takeoff, 300 foot RVR, engine failure either before or after V1

Selected ground training subjects should be reviewed annually.

APPENDIX 5

EXAMPLE TRAINING PROGRAM AS REQUIRED BY

AD 93-07-15 (COMBI AIRCRAFT)

AD 93-07-15 TRAINING PROGRAM

This Appendix specifies the recommended training standards for individuals assigned to monitor and to fight cargo fires on aircraft operating in a combined passenger and cargo configuration on the main deck (Combi aircraft). The standards for the development of an operator's training program takes into account the limited fire fighting intervention required by the different options specified in Airworthiness Directive (AD) 93-07-15.

The following minimum standards assume that individuals assigned to fight cargo fires have already successfully completed the appropriate aircraft type training including basic fire fighting and practical training in donning and use of Protective Breathing Equipment (PBE), (Note – credit may be taken under FAR 121.401(d) if appropriate). Inability to demonstrate proficiency in the use of the PBE should result in an individual being reassessed in respect of their abilities for flying duties. Individuals who do not successfully complete the proficiency requirements of paragraph 4 must not be assigned cargo fire fighting duties. Not all aircraft crewmembers will be suited to undertake the duties in fighting cargo compartment fires, which will take place in a relatively alien and hostile environment.

1. TRAINING REQUIREMENTS

1.1 THEORETICAL TRAINING: The theoretical training shall include an introduction to potential hazards associated with main deck cargo compartments on applicable Class "B" Combi aircraft; the chemistry of fire and extinguishing agent; description of all types of equipment provided and the appropriate method of use; details of all relevant operational procedures (including fire and smoke procedures), and the principles of working and searching in heat and smoke as appropriate to the operations being contemplated.

1.2 PRACTICIAL TRAINING: Practical training, including actual fire fighting, must be carried out. It is essential that training be conducted using equipment, which is representative of the type and size with which individuals will be required to work under operational circumstances.

1.3 FAMILIARZIATION WITH COMBI CARGO COMPARTMENT: Individuals must complete a supervised inspection of a fully loaded main deck cargo compartment of a Class "B" Combi aircraft with the cargo loading door closed. This supervised inspection must take place prior to an individual being assigned cargo fire fighting duties on board a Class "B" Combi aircraft.

NOTE: This supervised inspection can be achieved during a revenue flight on a Class "B" Combi aircraft on which the individual is assigned cargo fire fighting duties, but must be completed prior to aircraft departure.

1.4 RECURRENT TRAINING: Minimum standards for recurrent training are to be agreed with the applicable Regulatory Authority in accordance with existing operating rules based upon the content of this document.

NOTE: Familiarization with a Combi installation as specified in paragraph 1.3 must be completed if an individual has not been assigned to cargo fire fighting responsibilities in the previous 12 month period.

2. MINIMUM STANDARDS FOR COMBI PRACTICAL FIRE FIGHTING TRAINING FACILITY

1.5 The facility which is to provide a totally enclosed environment during training sessions shall be representative of a typical Class "B" Combi aircraft main deck cargo compartment on which trainees will be required to operate.

1.6 Specifically it shall be representative of:

a) Access into the compartment including access door, and lock and key type;
b) The barrier net, including method of unfastening and fastening;
c) Lighting typical of a Class "B" Combi aircraft main deck cargo compartment;
d) Communication equipment including interphone;
e) A typical configuration under which cargo is arranged and carried on the company's aircraft;
f) Floor construction, to include step-ups, restricted areas and roller loading equipment; and
g) Access routes and restrictions, as appropriate, throughout the compartment.

1.7 Fire fighting equipment, representative of a type, size and quantity provided on board the company's aircraft is to be readily available in the relevant locations prior to and during the practical training. This includes such items as PBE, protective garments, flashlights, halon and water extinguishers with extension lances/wands, axes, and any non-mandatory equipment associated with cargo fire fighting carried as an operator option.

1.8 When actual fire fighting is not conducted in this training facility there must be a simulated fire source and provision to generate dense cosmetic smoke inside the facility.

3. TRAINING COURSE REQUIREMENTS

3.1 The course objective must ensure that individuals assigned to fight cargo fires on board Class “B” Combi aircraft receive personal instruction that will enable them to safely and efficiently perform the following duties:

a) Pre-flight and in-flight inspections in order to identify potential hazards and to rectify them or deal with them in an appropriate manner;
b) In the event of an in-flight smoke detector activation make a speedy confirmation or denial of smoke or fire to the flight deck using the relevant procedures and equipment; and
c) In the event of a requirement to undertake fire-fighting action, make a speedy assessment and effective intervention using the relevant procedures and equipment.

3.2 On completion of the course, individuals shall demonstrate their proficiency in the required procedures and practical use of all fire fighting related equipment. The number of individuals assigned to a course of training should be limited on order to ensure that each individual receives adequate practical experience and that the instructional staff can assess their performance.

3.3 Introduction to class “B” Combi aircraft operations.

a) A brief description on Class “B” Combi aircraft operations, and the potential problems of cargo and passengers on the same deck;
b) A review of in-flight cargo fires and incidents to include information on the south African Airways accident involving a B747 Combi;
c) An explanation of the requirements imposed on operators by the applicable Airworthiness Directive;
d) A review of the applicable dangerous goods regulations with emphasis on unacceptable cargoes, labeling requirements and notification to the aircraft commander.

3.4 An explanation of the required elements of combustion is heat, fuel, oxygen, and chemical reaction. How various extinguishing agents interfere with the required elements to extinguish a fire. Explanations of available agents including appropriate practical uses, their illuminations and associated hazards including their affect on various hazardous cargoes.

3.5 Cargo Compartment Layout.

a) Cargo loading requirements;
b) Types of hazardous cargo, its location, and appropriate procedures prior to and during flight;
c) Detailed explanation of the Class “B” aircraft cargo compartment;
d) Restricted access conditions;
e) Orientation options of pallets and containers;
f) General fire prevention measures;

g) Smoke and fire detection systems, together with monitoring systems (if installed);
h) Fire protection systems including Fire Container Covers and/or halon Suppression Systems;
i) Lighting;
j) Communications equipment;
k) Access door and key locations;
l) Barrier net; and
m) Trip hazards including floor rollers, container/pallet restraints and cargo loading device step.

3.6 Location within each aircraft type and serie of all fire fighting equipment. The instructor shall demonstrate all equipment including the practical method of wearing and operation as appropriate. This session includes protective garments, fire extinguishers, PBE, communication systems, and any other non-mandatory equipment associated with cargo fire fighting.

3.7 Duties of individuals assigned to fight cargo fires.

3.7.1 PRE-FLIGHT DUTIES: Individuals assigned to fight cargo fires shall be made aware of any fire detection and fire suppression systems installed, and shall ensure:
a) The key to the main deck cargo compartment access door is readily available;
b) That access is available on at least two sides of each pallet and container; and
c) All required equipment is available, serviceable and correctly stowed.

3.7.2 IN-FLIGHT DUTIES: Include, but are not limited to:
a) Inspection of cargo compartment as required by the applicable Regulatory Authority. Emphasis being given to the likelihood that such inspections when required will provide early warning of developing problems (i.e., use of smell, observation of leakage, movement of cargo, etc);
b) Inspections following turbulence. This is to ascertain accessibility and to ensure that no unsafe condition has been caused by turbulence. Where, due to turbulence, etc; it is not possible to carry out the above inspection, this shall be carried out as soon as possible;
c) Keeping the flight deck informed of any problems associated with the cargo compartment; and
d) Company in-flight fire procedures. Alerting of individuals assigned to fight cargo fires. Fire fighting procedures. Communication with the flight deck. Provision of additional equipment on board.

3.8 FIRE AND SMOKE PROCEDURES. Individuals assigned to fight cargo fires shall be instructed in the following fire and smoke procedures taking into consideration the options of Fire Containment Covers (FCCs) and/or halon suppression systems:

a) Fire and smoke detection system activation including procedures for false alarms;
b) Communications with the flight deck emphasizing the necessity for immediate and continuous communication;
c) Fire and smoke procedures;
d) Location of the fire source in heat and smoke;
e) In the event that it is necessary, access to the pallet, container or other configured cargo;
f) Extinguishing procedures and techniques taking into account the FCC and halon suppression system options;
g) Post intervention procedures to include the problems of re-ignition and subsequent monitoring of the fire area;
h) Procedures for search and rescue in main deck cargo compartments; and
i) Emergency medical care.

3.9 USE OF PBE AND PROTECTIVE GARMENTS. Following a demonstration, trainees must don PBE and protective garments, and be shown PBE start up procedures. Emphasis must be placed on the need to follow the procedures carefully to ensure a proper face/neck seal, and correct PBE activation. Trainees should be instructed as to how individual types of PBE equipment will indicate when the unit is nearing depletion of breathable air and how much time remains for safe egress from the cargo compartment.

3.10 PRACTICAL DEMONSTRATION AND USE OF HAND HELD FIRE EXTINGUISHERS. The instructor shall initially demonstrate the method of operation of the various types of extinguisher and extension devices, and the effect of the extinguisher agents. Particular emphasis shall be placed on the way the different agents affect fire; trainees should understand quite clearly that while halon 1211 looks initially like water, it is the vaporization of liquid that effectively deals with fire. It should also be pointed out that a concentration of only 5% halon 1211 within the atmosphere is sufficient to extinguish most fires. Adding more halon merely wastes agent and increases the toxicity of the atmosphere. A decrease of halon 1211 below 3% may result in a flare up, especially in the case of deep-seated fires.

NOTE: Demonstration of the effects of halon 1211 can be achieved by a video presentation.

4. REQUIREMENTS FOR PRATICAL TRAINING

4.1 The training must be under the supervision of an instructor who has knowledge, ability and experience to conduct such training.

4.2 Practical exercises as specified in paragraph 4.3 must be conducted inside the training facility described in paragraph 2 except for actual fire fighting which may be performed outside the training facility but in a partially enclosed environment. An instructor must check the trainees prior to PBE practical wearing sessions to ensure that they have correctly donned the PBE equipment and activated it appropriately. Training PBE units may be used in this exercise.

4.3 The exercises must incorporate procedures relevant to an in-flight fire and incorporate all company operating procedures. As an introduction to this exercise a video presentation of selected cargo fires shall be included. They must be conducted by trainees working in pairs inside the training facility and shall include the use of communications equipment and procedures to report the fire status and the actions being taken to deal with the situation. The exercises must include the following:

a) Pre-flight inspection – cargo loading configuration, and all cargo fire fighting equipment;
b) Response to fire and smoke alarms;
c) Verification of fire and/or smoke;
d) Status report to the flight deck;
e) Donning of protective garments;
f) Donning and activation of PBE;
g) Selection and retrieval of fire fighting equipment located in the cabin;
h) Retrieval of access door key, unlocking and closing of access door, and access through the barrier net as appropriate;
i) Selection and retrieval of fire fighting equipment located in the cargo compartment; and
j) Following identification and location of the fire source, implementation of appropriate procedures.

APPENDIX 6

TRAINING PROGRAM NECESSARY INFORMATION;

CABIN ALTITUDE WARNING OR RAPID DEPRESSURIZATION & WARNING HORN – CABIN ALTITUDE OR CONFIGURATION NON-NORMALS

1. PURPOSE. This Appendix specifies the recommended training standards necessary to call attention to flight crews of the possibility that they might incorrectly interpret the Cabin Altitude warning horn as the Takeoff Configuration horn while in flight, and to emphasize the importance of donning oxygen masks immediately any time the intermittent warning horn sounds during flight.

2. BACKGROUND. During the investigation of a fatal accident by the Air Accident Investigation and Aviation Safety Board of Greece in August 2005, it was found the Boeing Model 737-300 series airplane was not pressurized during the climb from the departure airport, and the flightcrew subsequently became incapacitated. They found the pressurization mode selector was improperly set for flight, and the flightcrew subsequently misinterpreted the cabin altitude warning horn as a takeoff configuration warning horn. The same warning horn provides both warning functions on Model 737 airplanes.

Subsequent data gathering reveal~~l~~ed other instances involving both US and non-US operators where flight crews didn't recognize the Cabin Altitude Warning Horn promptly. The FAA issued Airworthiness Directive (AD) 2006-13-13 making certain emergency procedures in the Airplane Flight Manual immediate action items (also known as recall or memory items). That AD may be downloaded at:
http://www.airweb.faa.gov/Regulatory_and_Guidance_Library/rgAD.nsf/0/817975EE9A57B8DC862571950054A6DA?OpenDocument&Highlight=2006-13-13).

3. DISCUSSION**.** A crew's awareness of the possibility for confusion is essential to their quick response in donning an oxygen mask and avoiding hypoxia. In flight the intermittent horn, even when the CABIN ALTITUDE Warning Light is installed and operational, must result in the oxygen mask being donned immediately. Upon completion of the CABIN ALTITUDE WARNING OR RAPID DEPRESSURIZATION Non-normal checklist memory (AFM Recall) items other alerts and indications on the flight deck (e.g. air/ground sensing system failures, EQUIP COOLING, etc.) may then be addressed.

4. REQUIREMENTS FOR PRACTICAL TRAINING

4.1 PRE AND POST TRAINING DEVICE OR SIMULATOR BRIEFINGS:

4.1.1 Pre-briefings should remind crews that All B-737 models have an intermittent warning horn that alerts the flight crew to a loss of cabin pressurization when cabin pressure reaches 10,000 feet in flight (higher on aircraft equipped with a "High Altitude" option), or alerts them to an incorrect takeoff configuration on the ground. Briefings should emphasize that in flight donning of the oxygen mask must be performed immediately even if;

4.1.1.1 Horn sounds faint,

4.1.1.2 It's accompanied by other seemingly unrelated equipment failures (such as EQUIP COOLING OFF light, loss of TCAS,

transponder failure, radio problems, autopilot/autothrottle disconnect, etc.),

4.1.1.3 Horn is initially believed to be caused by air/ground sensing problems, or

4.1.1.4 An emergency descent is performed or anticipated.

4.1.2 Depressurization Training briefings should include discussion about the potential for confusion about the meaning of the Altitude Warning horn during flight due to:

4.1.2.1 Identical aural indications for Cabin Altitude Warning and Takeoff Configuration Warning,

4.1.2.2 Effects of hypoxia which may reduce the crew's ability to properly respond to the Cabin Altitude Warning horn,

4.1.2.3 Other indications that may occur following loss of pressurization that may distract the crew from diagnosing a loss of cabin pressure.

4.2 FLIGHT CREW PRE-FLIGHT DUTIES:

4.2.1 For normal operations, ensure the pressurization mode selector is in AUTO prior to takeoff.

4.2.2 Perform a pre-departure briefing that emphasizes;

4.2.2.1 "WHENEVER THE INTERMITTENT WARNING HORN SOUNDS IN FLIGHT, BOTH PILOTS MUST DON OXYGEN MASKS IMMEDIATELY",

4.2.2.2 That flight crews are to leave their masks on while analyzing the situation, and

4.2.2.3 Verify cabin altitude is below 10,000' before removing their masks.

4.2.2.4 This briefing is important to further reduce the risk of flight crew incapacitation due to hypoxia. Because of the dual purpose of the intermittent cabin altitude/configuration warning horn, this briefing serves to remind flight crews that the sounding of the cabin altitude horn in flight requires immediate action beginning with the donning of oxygen masks, and that this horn should not be confused with any other alert.

4.3 SIMULATOR/TRAINING DEVICE SCENARIOS

4.3.1 Pressurization event training scenarios should be structured to ensure flight crews are trained to don their oxygen masks due to the Altitude Warning horn.

4.3.2 Training only for rapid depressurization and its accompanying escaping air sound is counter-productive and suggests the masks are donned immediately for these events and perhaps no others.

5. REQUIREMENTS FOR CHECKING

5.1 Flight crews should be checked on the proper response to QRH procedures WARNING HORN – CABIN ALTITUDE OR CONFIGURATION and CABIN ALTITUDE WARNING OR RAPID DEPRESSURIZATION.

5.2 Checking should ensure flight crews continue use of the oxygen masks throughout the scenario and until reaching a safe cabin altitude.

APPENDIX 7

TRAINING PROGRAM NECESSARY INFORMATION;

Flight Crew Monitoring During Automatic Flight

1. PURPOSE. Flight deck automation has generally been well received by flight crews and the aviation industry. There is little doubt that the addition of flight deck automation has made significant contributions to the safety and efficiency of operations. This appendix specifies the recommended training standards necessary for simulator training programs to stress the need for flight crew monitoring during automatic flight.

2. BACKGROUND. Recent incidents and accidents involving advanced autoflight systems have shown that flight crews seem to expect autoflight performance to be infallible and, therefore, become complacent in their monitoring function. This complacency has also been reported to the FSB to be present during some training scenarios. Simulator training programs should stress the need for pilots to stay alert and maintain vigilance during all phases of flight using automation and especially during coupled approaches.

3. DISCUSSION**.** Automatic systems give excellent results in the vast majority of situations. Faults can occur at any point during an automatic approach. Many non-normal situations or scenarios are possible. The flight deck is designed so that a quick analysis and decision can be made for virtually all non-normal or fault situations using the autopilot or autothrottle indicators, FMA, master caution system and, for fail operational airplanes, autoland status annunciations. Deviations in intended flight path or unexpected thrust lever movement may also be an indication of an automation fault.

4. REQUIREMENTS FOR PRACTICAL TRAINING

4.1. PRE AND POST TRAINING DEVICE OR SIMULATOR BRIEFINGS:

4.1.1. Pre-briefings. Special attention should be given as to how to recognize and manage the use of the automatic features whenever the flight crew becomes aware of a degraded Autopilot Flight Director Systems (AFDS) mode.

4.1.1.1. Early intervention prevents unsatisfactory airplane performance or a degraded flight path.

4.1.1.2. When the automatic systems are engaged (or selected) and do not perform as expected, the PF should reduce the level of automation to ensure proper control of the airplane is maintained.

4.1.1.3. The PF should attempt to restore higher levels of automation only after aircraft control is assured.

4.1.1.4. The PF should guard the flight controls (control wheel, rudder pedals and thrust levers) throughout automatic approaches and landings.

4.2. SIMULATOR/TRAINING DEVICE SCENARIOS

4.2.1. Enhance the existing autoland training for situations wherein the autoland status annunciation changes unexpectedly (e.g. erroneous LRRA resulting in RETARD on FMA).

4.2.2. The equipment (autopilot, autothrottle or flight director) required for the approach fails.

4.2.3. Inability to engage both autopilots in dual channel approach (APP) mode.

4.2.4. Unexpected removal of the Flight Director Command Bars during approach.

4.2.5. Special attention should be given to Stabilized Approach Recommendations. Any significant deviation from planned flight path, airspeed, or descent rate should be announced and appropriate corrective procedures discussed and followed.

B-737 FLIGHT STANDARDIZATION BOARD REPORT - PART II

BOARD RECORD

(PERMANENT RECORD OF FSB CONSIDERATIONS INCLUDING PLANS, TESTS, MEETINGS, FINDINGS, AND COMMENTS)

B-737-100, -200, -300, -400, -500, -700, -800; -900

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