OPERATIONAL EVALUATION REPORT

THE BOEING COMPANY

BOEING 737

GRUPO DE AVALIAÇÃO DE AERONAVES – GAA

BRAZILIAN AIRCRAFT EVALUATION GROUP

ORIGINAL – JANUARY 10, 2018

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OPERATIONAL EVALUATION REPORT

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Index

Acronyms

AFCS .....Automatic Flight Control System
AFM .....Airplane Flight Manual
ANAC .....*Agência Nacional de Aviação Civil*
AOM .....Airplane Operations Manual
AIC .....Aeronautic Information Circular
AP .....Autopilot
ATC .....Air Traffic Control
CBT .....Computer Based Training
ECL .....Electronic Checklist
EDFCS .....Enhanced Digital Flight Control System
EFIS .....Electronic Flight Instrument System
EFVS.....Enhanced Flight Visual System
FD .....Flight Director
FFS .....Full Flight Simulator
FMS.....Flight Management System
FSTD .....Flight Simulation Training Device
GAA .....*Grupo de Avaliação de Aeronaves* (Brazilian Aircraft Evaluation Group)
GGCP .....*Gerência Geral de Certificação de Produto*
GS .....Ground School
HUD .....Head-Up Display
IAC .....*Instrução de Aviação Civil*
IS.....*Instrução Suplementar*
LAM .....Landing Attitude Modifier
LOFT.....Line Oriented Flight Training
LSP .....Left Seat Pilot
MDR .....Master Differences Requirements
MEL.....Minimum Equipment List
MMEL .....Master Minimum Equipment List
ND.....Navigation Display
ODR .....Operator Differences Requirements
OTD .....Other Training Device
PDCS .....Performance Data Computer System
PFD .....Primary Flight Display
PIC .....Pilot In Command
PMS .....Performance Management Systems
POI.....Principal Operations Inspector

RBAC.....*Regulamento Brasileiro de Aviação Civil*

RBHA .....*Regulamento Brasileiro de Homologação Aeronáutica*

RCAS .....Roll Control Advisory System

SAR .....*Superintendência de Aeronavegabilidade*

SLF .....Supervised Line Flying

TASE.....Training Areas of Special Emphasis

TCDS .....Type Certification Data Sheet

VREF .....Landing Reference Speed

1. INTRODUCTION

1.1. Background

The Boeing 737 series have been in service for many years in Brazil, even before the ANAC Aircraft Evaluation Group (GAA) was established. For that reason, this is the first Operational Evaluation conducted by ANAC on the B-737, specifically the B-737-8MAX.

An operational evaluation was conducted by ANAC Aircraft Evaluation Group (GAA) in Miami, FL, USA, during October 2017, where the proposed differences training for the B-737-8MAX was evaluated, considering the B-737-800 as the base aircraft. The evaluation was conducted using the methods described in ANAC IAC 121-1009.

The results presented here for the previous B-737 models (737-200, 737-300, 737-400, 737-500, 737-600, 737-700 and 737-800) are based on the Boeing 737 FAA FSB Report revision 14.

1.2. Objective

The objective of this report is to present the results from the operational evaluation of the B-737 series aircraft.

The content of this report is applicable to operations under the framework of ANAC.

1.3. Purpose

The purpose of this report is to:

- Determine the Pilot Type Rating assigned for the B-737 series;
- Recommend the requirements for training, checking and currency applicable to flight crew for the B-737 series, and functionalities; and
- Present the compliance of the B-737 series with the requirements of the RBHA 91 and RBAC 121.

1.4. Applicability

This report is applicable to:

- Brazilian operators of the B-737 series under RBHA 91 and RBAC 121 requirements;
- Approved Training Organizations certified under RBAC 142 (Training Centers);
- Civil Aviation Inspectors related to safety oversight of the B-737 series;
- ANAC Principal Operations Inspectors (POIs) of the B-737 series operators.

1.5. Cancellation

ANAC letter nº 2(SEI)/2017/GAA/GCOI/SPO-ANAC.

2. PILOT TYPE RATING

The GAA stablished 3 (three) different type ratings for the B-737 series aircraft and recommends the update of publication "Instrução Suplementar – IS 61-004" (ANAC type rating list) with the following information:

Table 1 – ANAC IS 61-004 (type rating list) revision proposal

Fabricante *(Manufacturer)*	**Aeronave** *(Aircraft)*		**Observações** *(Remarks)*	**Relatório de Avaliação Operacional ANAC disponível** *(ANAC Operational Evaluation Report available)*	**Designativo** *(Designative)*
	Modelo *(Model)*	**Nome** *(Name)*			
Boeing	737-200	-	D	Relatório de Avaliação Operacional Boeing 737 ANAC Operational Evaluation Report Boeing 737	B737
	737-300/400/500	B-737			B733
	737-600/700/800	B-737NG			B739
	737-8	B-737-8 MAX			

3. SPECIFICATIONS FOR PILOT TRAINING

3.1. Airman Experience

The provisions of this section apply to all 737 training programs, and assume the training will be given to airmen with previous experience. Examples of applicable previous experience may include any of the following: experience in RBAC 121 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 or ANAC GAA.

3.2. Training Areas of Special Emphasis (TASE)

Pilots must receive special emphasis on the following areas:

- Alternate Go-Around Flaps for B-737-700/-800/-800SFP aircraft certified to conduct Flaps 30° approaches using Flaps 5° during go-around. The use of Flaps 5° for go-around creates a substantial increase in approach climb weights in hot and/or high environments. The Flaps 30° approach speeds for Flaps 5° go-around operations require minor-model specific speed additives to the standard Flaps 30° VREF speeds in order to maintain the performance requirements of §25.121(d). Alternate Go-Around Flaps operations require a separate AFM for performance calculation, and a supplementary procedure defining flight crew actions. Operators are encouraged to develop an approach review and briefing card for use by flight crews when conducting any Alternate Go-Around Flaps operation. This training should be given during initial and recurrent training programs, or as determined by the POI.

  a) Ground training for flight crews current in the B-737-700 through B-737-800 series aircraft, ground training is established at Level B. Training may be administered via CBT, stand up lectures or video and should include performance requirements, speed additive use and effect on maneuver margins, alternate go-around procedures, flight crew callouts, and engine failure procedures.

  b) Flight Training. For flight crews current in B-737-700 through B-737-800 series aircraft, flight training is established at Level D. Training should include the following:

  - A two engine flaps 30° approach to a flaps 5 go-around;
  - A two engine flaps 30° approach to an engine failure during a flaps 5 go-around; and
  - A two engine flaps 30° approach in icing conditions to an engine failure during a flaps 5° go-around

- Automatic Landings. Due to the differences among B-737 AP autoland systems, flight training must occur with the appropriate AP autoland systems (i.e. Fail Operational vs. Fail Passive). This training can occur in either a full flight simulator or airplane, and should be conducted during all training programs as applicable. The training must ensure appropriate AFM limitations are addressed and complied with.

- When an EDFCS 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 AP approaches.
- B-737-8: Initial differences ground training from the B-737-800 to the B-737-8 must include the following special emphasis areas:

  a) Elevator Jam Landing Assist System to address the Elevator Jam Landing Assist system

  b) Landing Attitude Modifier (LAM) to address the two LAM system functions and associated flight spoiler deployments

  c) Gear handle operation changes to address standard operating procedure checklist changes

  d) Flight crew alerting
- When HUD is used, the recurrent training programs must address appropriate recurrent training for both HUD and non-HUD operations.

3.3. Seat Dependent Tasks training

Pilots must receive initial training in these seat dependent tasks:

- Head Up Guidance Display (left seat)
- Nosewheel steering (left seat).

3.4. Flight Simulation Training Devices (FSTD)

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

- Particular device characteristics have been specified by the GAA 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. FMS training may be conducted using an ANAC approved training device. If such device is not used, an approved FMS equipped simulator, or airplane must be used. Training devices acceptable for B-737 FMS training must include a cockpit-like environment, which can provide “dynamic” flight training in the integrated operation of B-737 FMS components. The ANAC Simulators Qualifications Coordination must evaluate such training device in consultation with the GAA, prior to receiving credit in an approved training program.
- Enhanced Flight Visual System (EFVS) must be trained in a level C or higher FFS in both day and night conditions.

3.5. Differences Training Between Related Aircraft

Pilots must receive differences training between the B-737-200 through B-737-800 aircraft when mixed fleet flying that series of aircraft. Pilots must receive difference training between the B-737-800 aircraft and B-737-8 aircraft when mixed fleet flying that series of aircraft. The level of training is specified in Appendix 2.

After a pilot receive the proper differences training from the B-737-800 to the B-737-8 aircraft, the GAA recommends two legs of SLF in a B-737-8 aircraft.

3.5.1. PFD/ND differences

A minimum of 12 hours in an interactive CBT and 6 programmed hours in a level 6 FTD. For individuals with EFIS experience, a LOFT session (4 hours) may be substituted for the two legs of SLF in an aircraft following training as required by the supervised line flying table. An exception to the above requirement was successfully tested and may be implemented without further concurrence with the ANAC GAA. Pilots trained and qualified in the B-737-600 through -800 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).

3.5.2. Blended, Split Scimitar, Advanced Technology Winglet.

Operators engaged in mixed fleet flying B-737 series aircraft with and without winglets must address differences at the A/A/A level including:

- Physical/dimensional differences, with emphasis on lower strake clearance considerations during ground operations
- Takeoff crosswind guidelines
- Landing crosswind guidelines
- Ground contact angles for normal landings

3.6. Roll Control Advisory System (RCAS)

RCAS is optional equipment on the B-737-NG and B-737-8. The ANAC GAA found Level B training to be sufficient for initial, transition, and upgrade training in that series aircraft.

4. SPECIFICATIONS FOR CHECKING

4.1. Landing from a No Flap or Non Standard Flap Approach.

The probability of flap extension failure on the B-737 is extremely remote due to system design. Therefore, demonstration of a partial flap approach and landing, using full slats and flaps less than 15°, during pilot certification or a proficiency check, is required.

4.2. Alternating proficiency checks for B-737-200, B-737-300/400/500 and B-737-600/700/800 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 B-737-200, B-737-300/400/500 and/or B-737-600/700/ 800) 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.

4.3. Mixed-fleet B-737 Programs, which do not alternate proficiency checks.

If an air carrier is operating a mixed B-737-200, B-737-300/400/500 and/or B-737 600/700/800 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. B-737-300 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.

4.4. FMS Demonstration of Competency. 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 re-clearance, 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 checking.

4.5. Seat Dependent Tasks

During initial, transition, and upgrade checking, pilots must be checked in these seat dependent tasks:

- Head Up Guidance Display (left seat)

- Nosewheel steering (left seat)

4.6. Other Checking Items

a) **Precision approach using HUD and EFVS.** When HUD use is approved, checking must include suitable demonstration of HUD use for modes and phases of flight authorized. HUD vs. FD and Raw Data. When HUD is installed, proficiency check maneuvers, LOFT, LOS or other demonstrations may be completed using HUD at the check pilot's/inspector's discretion. However, periodic assessment of non-HUD skills should be demonstrated, and at any time a check pilot/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).

4.7. Flight Simulation Training Devices (FSTD)

Enhanced Flight Visual System (EFVS) must be checked in minimum of a level C full flight simulator in both day and night conditions.

5. SPECIFICATIONS FOR RECENT EXPERIENCE AND CURRENCY

Pilots must receive differences currency for mixed fleet flying between the B-737 series aircraft.

6. COMPLIANCE WITH RBHA 91 AND RBAC 121

The compliance checklists provided by the manufacturer for the B737-8MAX only can be found on Annex 1.

7. TECHNICAL PUBLICATIONS

7.1. Master Minimum Equipment List - MMEL

The B-737 MMELs approved by the FAA shall be used by Brazilian operators as a basis for developing their MEL. These documents are available at the FAA website, through the link http://fsims.faa.gov/PICResults.aspx?mode=Publication&doctype=MMEL.

7.2. Airplane Flight Manual - AFM

Brazilian operators shall use the Airplane Flight Manuals – AFMs approved by GGCP/SAR for the B-737 series for developing their Airplane Operation Manuals – AOMs, when applicable.

8. MISCELLANEOUS

8.1. Forward Observer Seat

The B-737 series aircraft forward center observer seat has been evaluated and determined to meet regulatory requirements.

8.2. Aircraft Approach Category

All operators should comply with DECEA publication AIC N07/09 dated 12 Mar 2009 and use an approach category appropriate to the speed of VREF. Air carriers may be further restricted by their operations specifications for circling approaches.

Approach Category for B-737 series aircraft is as follows:

Aircraft	Category
B-737-200/200ADV	C
B-737-300/400/500	C
B-737-600/700/800	C
B-737-8	C

Due to the numerous maximum landing weight options among the B-737-600 through -800 series group and the B-737-8, determining an aircraft approach category may be done using the certificated maximum flap setting of 40° and the particular airplane's AFM maximum certificated landing weight.

Appendix 1 – MASTER DIFFERENCE REQUIREMENTS (MDR) TABLE

These are the minimum levels of training, checking and currency required. Differences levels are arranged as training/checking/currency:

Base Aircraft → **Related aircraft ↓**	**B-737-200**	**B-737-200 ADV**	**B-737-300/400/500 (non EFIS)**	**B-737-300/400/500 (EFIS)**	**B-737-600/700/800**	**B-737-8 MAX**
B-737-200	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	NOT EVALUATED
B-737-200 ADV	B/A/B (1) PDCS – C/B/C (2) NAV – B/B/C (4) AFCS – C/B/C (6) PMS – C/B/C	A/A/A (1) PDCS – C/B/C (2) NAV – B/B/C (4) AFCS – C/B/C (6) PMS – C/B/C	C*/C*/D (1) PDCS – B/B/C (2) NAV – B/B/C (5) LIMITED FMS – C/B/C	C*/C*/D (1) PDCS – B/B/C (2) NAV – B/B/C	D/D/D (1) PDCS – B/B/C (2) NAV – B/B/C	NOT EVALUATED
B-737-300/400/500 (non EFIS)	C*/C*/D (5) LIMITED FMS – C/B/C	C*/C*/D (5) LIMITED FMS – C/B/C	A/A/A (7) CROSS SERIES – A/A/B	C/B/B	(8) C/B/B	NOT EVALUATED
B-737-300/400/500 (EFIS)	(3) C*/C*/D (5) LIMITED FMS – C/B/C	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	NOT EVALUATED
B-737-600/700/800	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	NOT EVALUATED
B-737-8 MAX	NOT EVALUATED	NOT EVALUATED	NOT EVALUATED	NOT EVALUATED	B/B/B	Not Applicable

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 operational evaluation report.

(1) Installation of 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.

(6) Installation of 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 Fail Operational Autoland requires additional training, checking and currency.

(12) Universal Avionics Flat Panel Display/FMS installations (STC ST03355AT/ST03356AT) into -300 series or IS&S Flat Panel Display installation (ST03125NY) into the -400 series is equivalent to differences between -300/-400/-500 EFIS to -600/-700/-800/-900 PFD/ND.

(13) Universal Avionics Flight Management System installations (STC ST03362AT) into -200 series is equivalent to differences between that series to -300 Non-EFIS.

(14) The B-737-8 was not evaluated to aircraft B-737-200, 200ADV, -300, -400, and -500. Mixed fleet flying is not permitted between the B-737-8 and these series of aircraft. Differences from B-737-800 to B-737-8 have been evaluated. Additional training may be applicable when transitioning from the B-737 600/700 to the B-737-8.

(15) 737 MAX to NG to be evaluated in the future.

Appendix 2 – OPERATOR DIFFERENCE REQUIREMENTS (ODR) TABLES

This Design Differences tables, from the Boeing 737-800 to the Boeing 737-8, were proposed by The Boeing Company and validated by ANAC. They list the minimum differences levels operators must use to conduct differences training, checking and currency of flightcrew members.

FROM BASE AIRCAFT: B-737-800 TO RELATED AIRCRAFT: B-737-8	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING	CURRENCY
	CONFIGURATION	Nose Landing Gear Lengthened 8" Dual Tail Anti-Collision/Position Lights	No	No	A	A	
	PANEL LAYOUT	New MAX DISPLAY SYSTEM (MDS)	No	No	B	B	
	PANEL LAYOUT	New 2 Position Landing Gear Control Lever	No	Yes	B	B	
	LIMITATIONS	Size/type/system limitations	No	No	A	A	
	LIMITATIONS	Ground wind operating envelope	No	No	A	A	
	WEIGHTS	Increased to: Max Taxi Weight 181,700 lbs Max Takeoff Weight 181,200 lbs Max Landing Weight 152,800 lbs Max Zero Fuel Weight 145,400	No	No	A	A	
	21-AIR CONDITIONING and PRESSURIZATION	PACKS: Electronic Pack Flow Control System	No	No	B	B	
	21-AIR CONDITIONING and PRESSURIZATION	PACKS: Revised PACK light logic	No	Yes	A	A	
	21-AIR CONDITIONING and PRESSURIZATION	EQUIPMENT COOLING: EQUIP SMOKE light and Detection System	No	Yes	B	B	
	24- ELECTRICAL POWER	Relocated 4 circuit breakers from aisle stand to P-6	No	No	A	A	
	27- FLIGHT CONTROLS	FLIGHT CONTROL SYSTEMS Fly by Wire Spoiler System	Minor	No	B	B	
	27- FLIGHT CONTROLS	FLIGHT CONTROL SYSTEMS Maneuver Load Alleviation	Minor	No	B	B	
	27- FLIGHT CONTROLS	FLIGHT CONTROL SYSTEMS Maneuver Characteristics Augumentation System (MCAS)	No	No	B	B	
	27- FLIGHT CONTROLS	FLIGHT CONTROL SYSTEMS Landing Attitude Modifier (LAM)	Minor	No	B	B	
	27- FLIGHT CONTROLS	FLIGHT CONTROL SYSTEMS Elevator Jam Landing Assist/Direct Lift Control (DLC)	Minor	Yes	B	B	
	27- FLIGHT CONTROLS	FLAPS/SLATS Slat extension and flap load relief logic	No	No	B	B	
	27- FLIGHT CONTROLS	FLAPS/SLATS Position indicator relocated to MDS	No	No	B	B	
	27- FLIGHT CONTROLS	FLAPS/SLATS LE FLAPS light replaces LE FLAPS TRANSIT	No	Yes	B	B	

FROM BASE AIRCAFT: B-737-800 TO RELATED AIRCRAFT: B-737-8	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING	CURRENCY
	27- FLIGHT CONTROLS	SPEEDBRAKES/SPOILERS Emergency Descent Speedbrakes (EDS)	Minor	No	B	B	
	27- FLIGHT CONTROLS	SPEEDBRAKES/SPOILERS SPEEDBRAKE EXTENDED light logic	No	No	B	B	
	27- FLIGHT CONTROLS	SPEEDBRAKES/SPOILERS SPOILERS light added	No	Yes	B	B	
	27- FLIGHT CONTROLS	SPEEDBRAKES/SPOILERS ASSIST ON light added	No	Yes	B	B	
	27- FLIGHT CONTROLS	STABILIZER TRIM: Stab Trim cutout switches panel nomenclature	No	No	A	B	
	28- FUEL	CONTROLS AND INDICATORS: Additional System Alerts (see section Navigation)	No	Yes	B	B	
	28- FUEL	CONTROLS AND INDICATORS: Revised fuel FILTER BYPASS light logic	No	Yes	B	B	
	29 – HYDRAULIC POWER	CONTROLS AND INDICATORS: System indications relocated to MDS Systems Page	No	No	A	A	
	30- ICE AND RAIN	ENGINE ANTI-ICE ADDITIONAL ENG ANTI-ICE alert	No	Yes	B	B	
	30- ICE AND RAIN	ENGINE ANTI-ICE REVISED COWL VALVE NOMENCLATURE AND COLOR (AMBER)	No	Yes	B	B	
	30- ICE AND RAIN	WING ANTI-ICE L / R VALVE ALERTS COLOR (AMBER)	No	Yes	B	B	
	31- FLIGHT INSTRUMENT DISPLAYS	Incorporation Of MAX DISPLAY SYSTEM (MDS) 4 Large Display LCD Units	No	No	B	B	
	31- FLIGHT INSTRUMENT DISPLAYS	LIGHTING CONTROLS Updated And Relocated Engine Display Control Panel	No	Yes	B	B	
	31- FLIGHT INSTRUMENT DISPLAYS	LIGHTING CONTROLS Revised Display Brightness, Display Select Switch Panels, Master Dim and Test	No	No	B	B	
	31- FLIGHT INSTRUMENT DISPLAYS	ENGINE DISPLAY CONTROL PANEL Added Engine Transfer Switch	No	No	B	B	
	31- FLIGHT INSTRUMENT DISPLAYS	ENGINE DISPLAY CONTROL PANEL Added MFD Info Switch	No	Yes	B	B	
	31- FLIGHT INSTRUMENT DISPLAYS	ENGINE DISPLAY CONTROL PANEL Revised N1 and Speed Set Selectors	No	No	B	B	

FROM BASE AIRCAFT: B-737-800 TO RELATED AIRCRAFT: B-737-8	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING	CURRENCY
	31- FLIGHT INSTRUMENT DISPLAYS	PFD Expanded Sky Ground and Compass Display	No	No	B	B	
	31- FLIGHT INSTRUMENT DISPLAYS	EFIS CONTROL PANEL Dedicated VSD switch	No	No	B	B	
	31- FLIGHT INSTRUMENT DISPLAYS	EFIS CONTROL PANEL ND/WXR Range Selector- revised functionality	No	No	B	B	
	31- FLIGHT INSTRUMENT DISPLAYS	STANDBY FLIGHT INSTRUMENTS INTEGRATED STANDBY FLIGHT INSTRUMENT (ISFD) basic	No	No	B	B	
	31- FLIGHT INSTRUMENT DISPLAYS	AUX DISPLAY-Added Information Displayed	No	No	B	B	
	31- FLIGHT INSTRUMENT DISPLAYS	AUX DISPLAY-Added Flight number, Transponder, Selcal, UTC, Date and Elapsed time	No	No	B	B	
	31- FLIGHT INSTRUMENT DISPLAYS	AUX DISPLAY-Added Clock start/stop switches relocated to glareshield	No	No	B	B	
	31- FLIGHT INSTRUMENT DISPLAYS	MAINT LIGHT (replaces PSEU light)	No	Yes	B	B	
	32- LANDING GEAR, BRAKES	NOSE WHEEL STEERING switch relocated	No	Yes	B	B	
	32- LANDING GEAR, BRAKES	Brake accumulator pressure indicator relocated	No	Yes	B	B	
	32- LANDING GEAR, BRAKES	Auto brake switch relocated	No	Yes	B	B	
	32- LANDING GEAR, BRAKES	Landing Gear Warning Cutout switch relocated	No	Yes	B	B	
	32- LANDING GEAR, BRAKES	Revised landing gear lock override switch	No	Yes	B	B	
	33- WARNING SYSTEMS	No changes	No	No			
	34- NAVIGATION	FLIGHT MANAGEMENT SYSTEM FMC SOFTWARE U13 basic	No	No	B	B	
	34- NAVIGATION	FLIGHT MANAGEMENT SYSTEM Variable Takeoff Rating function	No	No	B	B	
	34- NAVIGATION	FLIGHT MANAGEMENT SYSTEM Fuel Alerting and Fuel Management	No	No	B	B	
	34- NAVIGATION	CDU Pages New or Revised: Perf Init page 1/2	No	No	B	B	
	34- NAVIGATION	CDU Pages New or Revised: N1 Limit	No	No	B	B	
	34- NAVIGATION	CDU Pages New or Revised: Fuel Progress page 5/5	No	Yes	B	B	
	34- NAVIGATION	FMC and Engine Display Alert Messages: USING RSV FUEL	No	Yes	B	B	

FROM BASE AIRCAFT: B-737-800 TO RELATED AIRCRAFT: B-737-8	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING	CURRENCY
	34- NAVIGATION	FMC and Engine Display Alert Messages: FUEL DISAGREE	No	Yes	B	B	
	34- NAVIGATION	FMC and Engine Display Alert Messages: INSUFFICIENT FUEL	No	Yes	B	B	
	34- NAVIGATION	FUEL FLOW (engine display only)	No	Yes	B	B	
	36- PNEUMATIC	BLEED AIR CONTROL PANEL Removed RAM DOOR FULL OPEN lights	No	No	A	A	
	36- PNEUMATIC	BLEED AIR CONTROL PANEL Revised BLEED TRIP OFF nomenclature to BLEED	No	Yes	A	A	
	36- PNEUMATIC	BLEED AIR CONTROL PANEL Revised BLEED light logic	No	Yes	B	B	
	49- APU	SYSTEM OPERATION Removed APU MAINT light	No	No	A	A	
	49- APU	SYSTEM OPERATION Removed APU EGT gauge	No	No	A	A	
	49- APU	SYSTEM OPERATION Added retractable door	No	No	B	B	
	49- APU	SYSTEM OPERATION Added APU DOOR light	No	Yes	B	B	
	72, 73,77,78,80 POWER PLANT	ENGINES: New LEAP-1B engines	No	Yes	B	B	
	72, 73,77,78,80 POWER PLANT	EEC SYSTEM Removal of Overboost rating	No	No	B	B	
	72, 73,77,78,80 POWER PLANT	EEC SYSTEM Addition of Icing Idle speed	No	No	B	B	
	72, 73,77,78,80 POWER PLANT	INDICATORS Revised Display Format	No	No	B	B	
	72, 73,77,78,80 POWER PLANT	INDICATORS Compact engine display removed	No	No	A	A	
	72, 73,77,78,80 POWER PLANT	INDICATORS Added THRUST alert	No	No	B	B	
	72, 73,77,78,80 POWER PLANT	INDICATORS Added MOTORING indication for bowed rotor logic	No	Yes	B	B	
	72, 73,77,78,80 POWER PLANT	THRUST REVERSER SYSTEM Added REVERSER COMMAND and REVERSER AIR/GND alerts	No	Yes	B	B	
	72, 73,77,78,80 POWER PLANT	THRUST REVERSER SYSTEM Replaced REVERSER alert with REVERSER LIMITED	No	Yes	B	B	

This Maneuver Differences table, from the Boeing 737-800 to the Boeing 737-8, was proposed by The Boeing Company and validated by ANAC. It lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

FROM BASE AIRCAFT: B-737-800 TO RELATED AIRCRAFT: B-737-8	MANUEVER	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING	CURRENCY
	PREFLIGHT INSPECTION	Optional installation of two-position tailskid	No	Yes	A	A	
	CLIMB	After take-off checklist – Landing gear handle	No	Yes	B	B	
	NON-NORMAL	Read and do Checklist changes due to annunciation and system changes listed in DESIGN difference tables.	No	Yes	B	B	

ANNEX 1 – BOEING 737-8 MAX RBHA 91 AND RBAC 121 COMPLIANCE CHECKLISTS

Operational Conformity Evaluation

December 5, 2017

Model: 737-8	Regulatory Authority: ANAC

Description

The attached Compliance Checklist shows conformity of the 737 MAX series airplane with the Referenced Agencia Nacional De Aviacao Civil (ANAC) of Brazil RBHA Part 91 aircraft equipment requirements. This report was prepared using the ANAC template, RBHA PART 91, Effective March 2012.

This document is considered to be advisory/guidance information to assist in achieving 737-8 entry into service and operational approval.

The enclosed information is proprietary to The Boeing Company, and is provided on a confidential basis.

Reference

Prepared according to ANAC template, RBHA 91, Effective March 2012

File Reference: 66-CQ-DL4L-17-054

RBHA 91, Effective March 2012

CHECKLIST	ITEM	TITLE	COMPLIANCE	MEANS OF COMPLIANCE / REMARKS	ANAC POSITION
X	91.109 (a)	Dual Controls	N/A - This requirement is operational in nature. The flight deck is designed for a flight crew of two pilots, with additional seats, amenities, and equipment for First aobserver. Cockpit displays and controls are visible and useable by either pilot seated at his duty station.	737 MAX Configuration Specification D019A008, Rev P, ATA 25-10, 27-00, 5-1-2017	
X	91.189	Category II and III operations: General operating rules.	(a) N/A - This requirement is operational in nature; however, the 737 design supports operator compliance with the requirements of this paragraph and relevant procedures are reflected in the manual. (b) N/A - This requirement is operational in nature; however, the 737 design supports operator compliance with the requirements of this paragraph. (c) These requirements are operational in nature and as such compliance is not directly dependent on the 737-8 design. Compliance is the responsibility of the aircraft operator.	737 MAX Airplane Flight Manual; D631A002, Rev 0, 3-7-2017 737 Flight Standardization Board Report, Rev 14, 7-5-2017 737 MAX Flight Crew Operations Manual, Cockpit Voice Recorder System, Rev TBC, 4/13/2017	
X	91.191	Category II and Category III manual.	(a) The 737 is designed to operate in Category II and III operations, and relevant procedures are reflected in the manual. However, this paragraph does not apply to operations conducted under parts 121 or 135, as stated in 91.191(c). (b) The 737 is designed to operate in Category II and III operations, and relevant procedures are reflected in the manual. However, this paragraph does not apply to operations conducted under parts 121 or 135, as stated in 91.191(c). (c) The 737 is designed to operate in Category II and III operations, and relevant procedures are reflected in the manual. However, this paragraph does not apply to operations conducted under parts 121 or 135, as stated in 91.191(c).	737 MAX Airplane Flight Manual; D631A002, Rev 0, 3-7-2017 737 Flight Standardization Board Report, Rev 14, 7-5-2017 737 MAX Flight Crew Operations Manual, Cockpit Voice Recorder System, Rev TBC, 4/13/2017	
X	91.193	Certificate of authorization for certain Category II operations	This paragraph provides definitions for subsequent paragraphs.		
X	91.203 (d)	Certificate of Airworthiness for newly	The 737-8 will be delivered with a current airworthiness certificate appropriately displayed. The holder for the airworthiness certificate,	737 Flight Standardization Board Report, Rev 14, 7-5-2017	

		manufactured aircraft.	registration certificate, and radio license is installed on the forward face of the flight deck's aft bulkhead next to the door.	737 FAA Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017	
X	91.203 (f)	Operation with a fuel tank installed inside the passenger compartment.	The 737-8 design does not include provisions for fuel tanks in the passenger compartment or the baggage compartment.	737 Flight Standardization Board Report, Rev 14, 7-5-2017	
X	91.203 (g)	The correspondent text is: No person may operate a civil airplane (domestic or foreign) into or out of an airport in Brazil unless it complies with the fuel venting and exhaust emissions requirements of RBAC 34.	The 737-8 propulsion system design complies with the relevant requirements of part 34.	737 Flight Standardization Board Report, Rev 14, 7-5-2017 737 FAA Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017	
X	91.205 (b)(1)	Airspeed indicator for each pilot required;	Airspeed is indicated on the PFD and the standby ISFD.	737 MAX Configuration Specification D019A008, Rev P, ATA 31-61, 34-24, 5-1-2017	
X	91.205 (b)(2)	Altimeter for each pilot required;	Altitude is indicated on the PFD and the standby ISFD.	737 MAX Configuration Specification D019A008, Rev P, ATA 31-61, 34-24, 5-1-2017	
X	91.205 (b)(4)	A magnetic direction indicator (compass);	A direct-reading magnetic compass is installed visible to the flight crew.	737 MAX Flight Crew Operations Manual, Cockpit Voice Recorder System, Rev TBC, 4/13/2017	
X	91.205 (b)(5)	Tachometer for each engine.	Primary engine indication are displayed on the forward panel Captain's or First Officer's inboard display unit. The airplane is supplied with 2-spool engines, and the engine display includes N1 & N2 rotational speeds.	737 MAX Configuration Specification D019A008, Rev P, ATA 31-61, 5-1-2017	
X	91.205 (b)(6)	Oil pressure gauge for each engine using pressure system.	Oil pressure is shown on the MDS.	737 MAX Configuration Specification D019A008, Rev P, ATA 31-61, 5-1-2017	
X	91.205 (b)(7)	Temperature gauge for each liquid-cooled engine.	N/A - This requirement does not apply to turbine powered aircraft.		
X	91.205 (b)(8)	Oil temperature gauge for each air-cooled engine.	The engine display in the flight compartment includes an oil temperature indicator.	737 MAX Configuration Specification D019A008, Rev P, ATA 31-61, 5-1-2017	

X	91.205 (b)(9)	Torque gauge and gases temperature gauge for each engine and turbine as applicable;	N/A - this airplane does not have a turbo propeller engine. Torque indication is used on turbo propeller engine.		
X	91.205 (b)(10)	Rotation rotor gauge for each main engine	Primary and secondary engine indications are displayed on the forward panel Captain's or First Officer's inboard display unit.	737 MAX Configuration Specification D019A008, Rev P, ATA 31-61, 5-1-2017	
X	91.205 (b)(11)	Manifold pressure gauge for each altitude engine.	This requirement does not apply to turbine powered aircraft.		
X	91.205 (b)(12)	Fuel gauge indicating the quantity of fuel in each tank.	The fuel quantity indicating system (FQIS) measures fuel quantity, calculates the fuel weight, provides the FMCS with a fuel weight, and shows fuel weight. A digital display of fuel weight for each tank is shown on the CDS engine display and on the refuel panel at the refueling station.	737 MAX Configuration Specification D019A008, Rev P, ATA 73-30, 28-41 5-1-2017	
X	91.205 (b)(13)	Landing gear position indicator, if the aircraft has a retractable landing gear.	The landing gear is controlled by a handle in the flight compartment. The gears are normally powered from the hydraulic system. The engine display in the flight compartment includes an hydraulic pressure indicators. There are two separate and independent landing gear position sensing systems. Lights on the center main panel (P2) in the flight compartment indicate the position of each gear.	737 MAX Configuration Specification D019A008, Rev P, ATA 32-30, 32-60, 5-1-2017	
X	91.205 (b)(14)	Approved flotation gear readily available	Ditching equipment in compliance with 14 CFR 25.1515 is provided.	737 FAA Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017	
X	91.205 (b)(15)	Approved safety belt	Passenger seats and seat belts are installed in accordance with the buyer`s interior arrangement. Seats meet requirements identified in Boeing document, Passenger Seats Design, Installation, and Certification Criteria, D6-83347. The 737 complies with 14 CFR 25.785 for seat, berth, safety belt and harness requirements.	737 Flight Standardization Board Report, Rev 14, 7-5-2017 737 FAA Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017	
X	91.205 (b)(16)	Approved shoulder belts on every front seat;	This requirement does not apply to the 737 since it has more than 9 passenger seats.	737 Flight Standardization Board Report, Rev 14, 7-5-2017	
X	91.205 (b)(17)	An emergency location transmitter, if required by that regulation 91.207;	The airplane has complete provisions for a fixed emergency locator transmitter (ELT) that is automatically activated by an acceleration sensor (a function of a G force and time), and can also be activated manually from the flight deck.	737 Flight Standardization Board Report, Rev 14, 7-5-2017	

			An emergency locator transmitter (ELT) compliant with 91.207 is provided (25.1415 for overwater-equipped airplanes).	737 FAA Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017 737 MAX Configuration Specification D019A008, Rev P, ATA 23-24, 25-62, 5-1-2017	
X	91.205 (b)(18)	Shoulder Harness	This requirement does not apply to the 737-8 since it has more than 9 passenger seats.		
X	91.205 (b)(19)	For rotorcraft built after September 16, 1992, a shoulder belt for each seat;	This requirement does not apply to the 737 since it is a turbine powered aircraft. – FAR91.205(b)(17)		
X	91.205 (b)(20)	Fire extinguisher portable accessible to the members of the crew flight;	Water and Halon fire extinguishers compliant with 25.851 and 25.1411 are located throughout the passenger cabin and flight deck.	737 Flight Standardization Board Report, Rev 14, 7-5-2017 737 FAA Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017	
X	91.205 (b)(21)	For hydroplanes and amphibious aircraft, at least one anchor and one drogue.	This requirement is for hydroplanes and amphibious aircraft, it does not apply to the 737.		
X	91.205 (b)(22)	VHF, bilateral radio-communication	Three independent VHF radios provide two-way radio communications up to a line of sight distance to the horizon.	737 MAX Configuration Specification D019A008, Rev P, ATA 23-10, 23-11, 5-1-2017	

X	91.205 (b)(23)	For small aircraft of type approved after 11 March 1996 according to RBHA 23, an approved white and red collision avoidance system. In the event of failure of any light from the anti-collision light system, the aircraft operator may proceed to a location where repair or replacement may be made.	This requirement applies to small civil aircraft and as such does not apply to the 737-8.		
X	91.205 (c)(1)	Instruments and equipment specified in paragraph (b) of this section being all the instruments adequately illuminated	Instruments and light plates in the flight compartment are integrally lighted. The flight compartment instruments and equipment are illuminated.	737 MAX Configuration Specification D019A008, Rev P, ATA 33-13, 5-1-2017	
X	91.205 (c)(2)	a gyroscopic attitude indicator (artificial horizon);	Such indications are displayed on the PFDs.	737 MAX Configuration Specification D019A008, Rev P, ATA 31-62, 5-1-2017	
X	91.205 (c)(3)	Approved position lights	One LED position light and one LED marker light are on each winglet. The forward position light on the left winglet is red. The forward position light on the right winglet is green. The aft marker lights are white and assist service personnel during ground operations. There is one white LED position light on each side of the tailcone. A switch on the forward overhead panel (P5) in the flight compartment controls these lights.	737 MAX Configuration Specification D019A008, Rev P, ATA 33-43, 5-1-2017	
X	91.205 (c)(4)	Approved anti-collision light	There are red anti-collision strobe lights as follows: • One on the top of the fuselage. • One on the bottom of the fuselage. The light on the top of the fuselage can be replaced from inside the airplane. There are white anti-collision strobe lights as follows: • One on the left forward winglet. • One on the right forward winglet.	737 MAX Configuration Specification D019A008, Rev P, ATA 33-44, 5-1-2017	

X	91.205 (c)(5)	Landing lights	The landing, taxi, and runway turnoff lights are located in each wing root strakelet and provide the lighting necessary for airplane operation.	737 MAX Configuration Specification D019A008, Rev P, ATA 33-42, 5-1-2012 737 MAX Flight Crew Operations Manual, Rev TBC, 4/13/2017	
X	91.205 (c)(6)	An adequate source of electrical energy for all installed electrical and radio equipment.	Primary power for the airplane is provided by an ac power system. A secondary dc power system provides dc power for certain requirements. A battery provides power if power is not available from the primary ac generation system.	737 MAX Configuration Specification D019A008, Rev P, ATA 24-00, 5-1-2017	
X	91.205 (c)(7)	One spare set of fuses, or three spare fuses of each kind required, that are accessible to the pilot in flight	N/A - electrical fuses are not used on the 737. Electrical circuit breakers are installed.		
X	91.205 (c)(8)	A portable electric lantern	Flashlights are available through customer option selection.	737 MAX Configuration Specification D019A008, Rev P, ATA 25-60, 5-1-2017	
X	91.205 (c)(9)	At least one equipment of radio navigational appropriate to each ground station to be used, when flying in controlled area;	Three independent VHF radios provide two-way radio communications up to a line of sight distance to the horizon.	737 MAX Configuration Specification D019A008, Rev P, ATA 23-10, 23-40, 23-11, 5-1-2017	
X	91.205 (d)	IFR Flights. To operate in IFR the aircraft must be type certified for this kind of operation and the following instruments are required:	This paragraph provides definitions for subsequent paragraphs.		
X	91.205 (d)(1)	Instruments and equipment specified in paragraph (b) of this section, and, for night flight, instruments and equipment specified in paragraph (c) of this section.	This paragraph provides definitions for subsequent paragraphs. An FAA-approved (master minimum equipment list) MMEL is available for operators to develop the contents therein.	737MAX Master Minimum Equipment List (MMEL), Rev 0, 3-9-2017	
X	91.205 (d)(2)	a VHF system of radio-communication bilateral	Three independent VHF radios provide two-way radio communications up to a line of sight distance to the horizon.	737 MAX Configuration Specification D019A008, Rev P, ATA 23-10, 23-	

		and at least one equipment of navigation appropriate to the each ground station to be used, including phones (or loudspeakers) and microphones associates;	Baseline configuration of the airplane includes flight crew interphone system, including headsets and microphones for use by all flight crew members.	40, 23-11, 5-1-2017	
X	91.205 (d)(3)	Gyroscopic rate-of-turn indicator for each pilot required	Such indicator is displayed on the PFDs.	737 MAX Configuration Specification D019A008, Rev P, ATA 23-10, 31-62, 5-1-2017 737 MAX Flight Crew Operations Manual, Rev TBC, 4/13/2017	
X	91.205 (d)(4)	Slip-skid indicator for each required pilot	Slip-skid indication is on the PFD.	737 MAX Configuration Specification D019A008, Rev P, ATA 23-10, 31-62, 5-1-2017 737 MAX Flight Crew Operations Manual, Rev TBC, 4/13/2017	
X	91.205 (d)(5)	Sensitive altimeter adjustable for barometric pressure for each pilot required;	The PFD shows altitude indication including barometric setting. Barometric settings are selected in inches of mercury or hectopascals. Altitude indication is calibrated in feet.	737 MAX Configuration Specification D019A008, Rev P, ATA 34-11, 31-62, 5-1-2017	
X	91.205 (d)(6)	a heating system of "pitots" of the anemometric systems;	The pitot probes, TAT probes, and angle of attack sensors are automatically heated electrically during flight.	737 MAX Configuration Specification D019A008, Rev P, ATA 30-30, 5-1-2017	
X	91.205 (d)(7)	a clock displaying hours, minutes and seconds, sweep second pointer or digital presentation for each pilot required	Clock is displayed on the PFD.	737 MAX Configuration Specification D019A008, Rev P, ATA 31-25, 5-1-2017	
X	91.205 (d)(8)	Generator of adequate capacity.	An ac system and a dc system provide electrical power for the airplane. Power for all normal operations is provided by the ac generators. A battery provides power to the standby bus if ac power is not available. The equipment for each generating channel is physically isolated from other channels where possible	737 MAX Configuration Specification D019A008, Rev P, ATA 24-00, 5-1-2017	
X	91.205 (d)(9)	Gyroscopic pitch and bank indicator (artificial horizon) for each required pilot	There are two ARINC 704 ADIRUs with internal sensors (accelerometers and laser gyros) for attitude and direction. Pitch and bank is displayed on the PFD .	737 MAX Configuration Specification D019A008, Rev P, ATA 34-21, 5-1-2017	

X	91.205 (d)(10)	Gyroscopic direction indicator (directional gyro or equivalent) for each required pilot	Such indicator is displayed on the PFDs.	737 MAX Configuration Specification D019A008, Rev P, ATA 31-62, 5-1-2017	
X	91.205 (d)(11)	a vertical speed indicator for each pilot required.	Vertical speed is displayed on the PFD.	737 MAX Flight Crew Operations Manual, Cockpit Voice Recorder System, Rev TBC, 4/13/2017	
X	91.205 (e)	Flight at and above 24,000 ft. MSL (FL 240). DME	Two ARINC 709 frequency-scanning distance measuring equipment (DME) systems are available on the baseline airplane and two VOR receivers are installed. Navigation systems comply with air traffic services guidelines. The Flight Management Computing System (FMCS) is included, and manages PBN-specific data. The FMCS functions with the DFCS to supply data to the FCCs and to the autothrottle. The FMCS has been shown to meet the requirements for RNAV operations (FAA AC 20-130A, JAA AMJ 20X2) with the proper equipment operational at departure.	737 MAX Configuration Specification D019A008, Rev P, ATA 34-21, 02-20, 34-60, 5-1-2017	
X	91.205 (f)	Category II operations. Required equipment and instruments	This paragraph provides definitions for subsequent paragraphs. The airplane and its equipment have FAA certification for low-weather minimum operations for these categories: • Category II approach for landing complies with FAA Advisory Circular 120-29, Appendix I, dated July 26, 1972. • Category II automatic landing complies with FAA Advisory Circular 20-57A, dated January 12, 1971. Two flight directors are supplied. Each flight director shows its steering commands on its attitude indicator. One or both flight directors can be set for climb, cruise, descent, or approach. The autopilot system is fail-passive when the two autopilots are engaged for approach, landing, or go-around.	737 MAX Configuration Specification D019A008, Rev P, ATA 02-26, 5-1-2017 737MAX Master Minimum Equipment List (MMEL), Rev 0, 3-9-2017	

X	91.205 (g)	Category III operations. Required equipment and instruments	This paragraph provides definitions for subsequent paragraphs. The airplane and the installed weather equipment have FAA and EASA certification to support low-weather minima operations to Category I/II/III approach and/or landing with or without autothrottle active An instrument landing system (ILS) is incorporated into the INRs. The localizer and glideslope antennas are installed on the forward pressure bulkhead. The ILS is automatically tuned by the flight management function, or manually tuned through the emulated CDU.	737 MAX Configuration Specification D019A008, Rev P, ATA 02-26, 5-1-2017 737MAX Master Minimum Equipment List (MMEL), Rev 0, 3-9-2017	
X	91.207 (a)(1)	There is attached to the airplane an approved automatic type emergency locator transmitter…	Selections offer installation of an automatic emergency locator transmitter (ELT). When activated, the ELT transmits on three frequencies: 243 MHz, 121.5 MHz, and 406 MHz.	737 MAX Standard Selections Catalog D924A110-6, 23-24, 8-1-2017	
X	91.207 (a)(2)	For operations other than those specified in paragraph (a)(1) of this section, there must be attached to the airplane an approved personal type or an approved automatic type	Selections are required to install: 1. Portable emergency locator transmitters (ELT) 2. Automatic emergency locator transmitter.	737 MAX Standard Selections Catalog D924A110-6, 23-24, 8-1-2017	
X	91.207 (b)	Each emergency locator transmitter required by paragraph (a) of this section must be attached to the airplane in such a manner that the probability of damage to the transmitter in the event of crash impact is minimized. Fixed and deployable automatic type transmitters must be attached to the airplane as far aft as practicable.	The airplane complies with the FAA's "intended function" regulation. The ELT meets the standards of TSO-91A, TSO-126, ETSO-2C91A and ETSO-2C126.	737 FAA Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017	

X	91.207 (f)	Paragraph (a) of this section does not apply to--	This paragraph provides definitions for subsequent paragraphs.		
X	91.207 (h)	Each ELT on board of an aircraft registered in Brazil must meets the requirements of section 91.225 of this regulation.	Selections offer installation of an automatic emergency locator transmitter (ELT). When activated, the ELT transmits on three frequencies: 243 MHz, 121.5 MHz, and 406 MHz. The ELT meets the standards of TSO-91A, TSO-126, ETSO-2C91A and ETSO-2C126.	737 MAX Standard Selections Catalog D924A110-6, 23-24, 8-1-2017 737 FAA Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017	
X	91.207 (i)	From 01 of January of 2007 any new ELT to be installed in airplane registered in Brazil it must possess the frequencies of 121.5 and 406 MHz…	Selections offer installation of an automatic emergency locator transmitter (ELT). When activated, the ELT transmits on three frequencies: 243 MHz, 121.5 MHz, and 406 MHz.	737 MAX Standard Selections Catalog D924A110-6, 23-24, 8-1-2017	
X	91.211 (a)	General.	The passenger compartment oxygen system can support all passengers and flight attendants during an emergency descent after cabin decompression per the altitudes and duration requirement.	737 MAX Configuration Specification D019A008, Rev P, ATA 35-20, 5-1-2017	
X	91.211 (b)	Pressurized cabin aircraft.	Portable oxygen equipment is installed for each attendant (per 25.1447(c)(4)). While attendants are between attendants' seat locations, oxygen is available from the additional oxygen masks installed (vs. number of passenger seats) at the Passenger Service Units (per 25.1447(c)(l)). The passenger compartment oxygen system is certified to supply oxygen for at least 12 minutes. Chemical oxygen generators can supply oxygen for 12 or 22 minutes. Longer durations require a gaseous system. A customer selection is required. It is the operator’s responsibility to ensure the appropriate quantity of cylinders and/or oxygen is installed on the airplane to meet requirements.	737 MAX Configuration Specification D019A008, Rev P, ATA 35-20, 5-1-2017 737 FAA Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017	
X	91.213 (a)	List of minimum equipment and instruments for operation.	A FAA-approved Master Minimum Equipment List (MMEL) is available for operators to develop their Minimum Equipment List (MEL).	737MAX Master Minimum Equipment List (MMEL), Rev 0, 3-9-2017	
X	91.215	ATC transponder and altitude reporting equipment and use.	The customer selection ATC transponders installed in production meet DO-260B ADS-B Out requirements and comply with the intent of ARINC Characteristic 718.	737 MAX Standard Selections Catalog D924A110-6, 34-53, 8-1-2017	

X	91.217 (b)	The equipment was tested and calibrated to transmit altitude data corresponding within 125 feet of the indicated or calibrated datum of the altimeter normally used to maintain flight altitude,	An air traffic control (ATC) system with two Mode S transponders which comply with the intent of ARINC Characteristic 718 is installed.	737 MAX Standard Selections Catalog D924A110-6, 34-53, 8-1-2017	
X	91.217 (c)	Unless the altimeters and digitizers in that equipment meet the standards of TSO-C10b and TSO-C88, respectively.	An air traffic control (ATC) system with two Mode S transponders which comply with the intent of ARINC Characteristic 718 is installed.	737 MAX Standard Selections Catalog D924A110-6, 34-53, 8-1-2017	
X	91.221 (a)	All airspace: Brazil-registered civil aircraft. Any traffic alert and collision avoidance system installed in a Brazil - registered civil aircraft must be approved by the Administrator.	This requirement requires operator action; however, the 737 design supports operator compliance with the requirements of this paragraph.	737 MAX Standard Selections Catalog D924A110-6, 34-45, 8-1-2017	
X	91.221 (c)	(Airspace RVSM (Reduced Vertical Separation Minimum). Notwithstanding the provide one in paragraph (b) of this section, when operating an aircraft in airspace RVSM, no person can shall have ACAS system on and operating unless this system is of type ACAS II (TCAS II, type 7.0).	Airplane configurations that meet FAA RVSM equipment requirements are accepted by EASA as being in compliance with EASA regulations for RVSM airplane equipment requirements. Before beginning RVSM operations, it is the responsibility of the operator to obtain operational approval from its regulatory agency. Any additional equipment, operational requirements, or future changes to RVSM requirements are the responsibility of the operator. An ARINC 735 traffic alert and collision avoidance system (TCAS) is installed. The system is TCAS Change 7 compliant.	737 MAX Standard Selections Catalog D924A110-6, 02-20, 34-45, 8-1-2017	

X	91.221 (d)	Aircraft transport category configured with more than 30 seats, that they have received its first one Airworthiness Certified (independent of the issuer country) in or after 01 of January of 2008, must be equipped with a system ACAS II (TCAS II, type 7.0 or superior).	An ARINC 735 traffic alert and collision avoidance system (TCAS) is installed. The system is TCAS Change 7 compliant.	737 MAX Standard Selections Catalog D924A110-6, 34-45, 8-1-2017	
X	91.221 (e)	Aircraft transport category configured with more than 30 seats, that they have received its first one Airworthiness Certified (independent of the issuer country) in or after 01 of January of 2010, must be equipped with a system ACAS II (TCAS II, type 7.0 or superior).	An ARINC 735 traffic alert and collision avoidance system (TCAS) is installed. The system is TCAS Change 7 compliant.	737 MAX Standard Selections Catalog D924A110-6, 34-45, 8-1-2017	
X	91.223 (a)	Airplanes manufactured after December 31, 2003....	An ARINC 723 enhanced ground proximity warning system (EGPWS) that complies with FAA FAR 121.354 and TSO C151A warns the flight crew of unsafe ground clearance is included.	737 MAX Standard Selections Catalog D924A110-6, 34-45, 8-1-2017	
X	91.223 (b)	Airplanes manufactured on or before January 01, 2004....	The 737-8 was manufactured after January 01, 2004		
X	91.223 (c)	Airplane Flight Manual. The Airplane Flight Manual shall contain appropriate procedures	The airplane flight manual contain appropriate procedures is available for operator.	737 MAX Airplane Flight Manual; D631A002, Rev 0, 3-7-2017	

X	91.225	All the electronic equipment on board required by this regulation and the RBHA 121 and 135 that they receive and/or they transmit radio signals of/to control systems stations of air traffic, meteorology and search and rescue must comply with norms and specifications established by Department of Control of Airspace (Departamento de Controle do Espaço Aéreo – DECEA).	All VHF communication equipment, ILS Localizer and VOR receivers have been approved as complying with the FM immunity performance standards	737 MAX Configuration Specification D019A008, Rev P, ATA 34-00, 5-1-2017	
X	91.317	Provisionally certificated civil aircraft: Operating limitations.	This requirement is operational in nature. However, The 737 meets FAA and EASA Type Certification requirements.	737 Flight Standardization Board Report, Rev 14, 7-5-2017 737 FAA Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017 737 MAX Airplane Flight Manual; D631A002, Rev 0, 3-7-2017 737MAX Master Minimum Equipment List (MMEL), Rev 0, 3-9-2017 737 MAX Flight Crew Operations Manual, Rev TBC, 4/13/2017 737 EASA Type Certificate Data Sheet EASA.IM.A.120, Issue 13, 7/28/2017	

X	91.319	Aircraft having experimental certificates: Operating limitations.	N/A - The 737-8 is a production aircraft		
X	91.321	Civil aircraft with certificate of flight authorization. Operation limits	N/A - The 737-8 is an air transport aircraft (91.321 Carriage of candidates in elections)		
X	91.323	Primary Category Aircraft: Operating limitations	N/A - The 737-8 is an air transport aircraft (91.325 - Primary category aircraft: Operating limitations)		
X	91.409 (f)(3)	A current inspection program recommended by the manufacturer.	This requirement is operational in nature and as such compliance is not directly dependent on the 737 design. However, inspection requirements are documented in the Maintenance Planning Document delivered with the airplane.	737 MAX Airplane Maintenance Manual 737 Flight Standardization Board Report, Rev 14, 7-5-2017	
X	91.410 (a)	Limitation on number of cycle / aircraft.	This requirement is operational in nature and as such compliance is not directly dependent on the 737-8 design.		
X	91.410 (b)	Instructions for maintenance and inspection of fuel tank system.	This requirement is operational in nature and as such compliance is not directly dependent on the 737-8 design.		
X	91.507	Equipment requirements: night VFR operations	Over-the-top and night VFR operations on the 737 can be supported by the following: 2 VOR/ILS systems and 2 DME systems.	737MAX Master Minimum Equipment List (MMEL), Rev 0, 3-9-2017	
X	91.511	Radio communication equipment appropriate to the facilities	Three independent VHF radios provide two-way radio communications up to a line of sight distance to the horizon. Baseline configuration of the airplane includes flight crew interphone system, including headsets and microphones for use by all flight crew members.	737 MAX Configuration Specification D019A008, Rev P, ATA 23-10, 23-40, 23-11, 5-1-2017	
X	91.517 (a)	Passenger Information	Passenger signs compliant with section 25.791, controlled by overhead panel selectors in the flight deck, are incorporated.	737 FAA Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017 737 Flight Standardization Board Report, Rev 14, 7-5-2017	
X	91.517 (b)(c)(d)(e)	Passenger Information	(a) This requirement requires operator action; however, the 737 design supports operator compliance with the requirements of this paragraph.	737 FAA Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017	

			(b) This requirement requires operator action; however, the 737 design supports operator compliance with the requirements of this paragraph. Passenger signs compliant with section 25.791, controlled by overhead panel selectors in the flight deck, are incorporated. Sufficient number of loudspeakers are installed in the passenger compartment to supply audio to all passengers and attendants. (c) This requirement requires operator action; however, the 737 design supports operator compliance with the requirements of this paragraph. A smoke detector is installed in each lavatory. When smoke is detected in a lavatory, the smoke detector produces a warning sound that can be heard in the passenger compartment. A reset button is located on the smoke detector. (d) This requirement requires operator action; however, the 737 design supports operator compliance with the requirements of this paragraph. (e) This requirement requires operator action.	737 Flight Standardization Board Report, Rev 14, 7-5-2017	
X	91.521	Shoulder harness	This airplane complies with the FAA's 14 CFR 25.785 for seats, berths, safety belts and harnesses requirements.	737 FAA Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017 737 EASA Type Certificate Data Sheet EASA.IM.A.120, Issue 13, 7/28/2017	
X	91.525	Carriage of cargo	This requirement is not applicable since the 737 cargo compartments are not designed to require the physical entry of a crewmember to extinguish a fire (an integral cargo fire protection system is installed). The lower lobe cargo compartments are Class C compartments per 14 CFR 25.857.	737 MAX Configuration Specification D019A008, Rev P, ATA 25-50, 5-1-2017	
X	91.527	Operating in icing conditions	This requirement requires operator action; however, the 737 design supports operator compliance with the requirements of this paragraph.	737 MAX Configuration Specification D019A008, Rev P, ATA 30-00, 5-1-2017	
X	91.805	Operating limitations. Subsonic reaction	This 737 model is certified based on 14 CFR Part 36, Noise Standards: Aircraft Type Certification and Airworthiness Certification, through Amendment 36-24. The certification basis for noise also includes compliance to ICAO Annex 16, Volume I, Fifth Edition (Amendment 9), dated July 9, 2008.	737 FAA Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017	

Operational Conformity Evaluation

December 5, 2017

Model: 737-8	Regulatory Authority: ANAC

Description

The attached Compliance Checklist shows conformity of the 737 MAX series airplane with the Referenced Agencia Nacional De Aviacao Civil (ANAC) of Brazil RBAC Part 121 aircraft equipment requirements. This report was prepared using the ANAC template, RBAC PART 121, Effective March 2012.

This document is considered to be advisory/guidance information to assist in achieving 737-8 entry into service and operational approval.

The enclosed information is proprietary to The Boeing Company, and is provided on a confidential basis.

Reference

Prepared according to ANAC template, RBAC 121, Effective March 2012

File Reference: 66-CQ-DL4L-17-055

RBAC 121, Effective March 2012

CHECKLIST	ITEM	TITLE	COMLIANCE	METHOD OF COMPLIANCE / REMARKS	ANAC POSITION
X		**Subpart G – Manual Requirements:**	Title Only		
X	121.141	Airplane flight manual.	The airplane flight manual is available for operator.	737 MAX Airplane Flight Manual; D631A002	
X		**Subpart H – Aircraft Requirements:**	Title Only		
X	121.157	Aircraft certification and equipment requirements.	(a) This section applies to aircraft certificated before June 1, 1942 and as such does not apply to the 737. (b) This section requires compliance with sections 121.189 through 121.197 and is applicable to the 737. Refer to entries for FARs 121.189 through 121.197. This section requires compliance with sections 121.175 through 121.197; sections 121.175 through 121.187 apply to aircraft with reciprocating engines or four or more engines; sections 121.189 through 121.197 are applicable to the 737. Refer to FARs 121.189 through 121.197 for specifics. (c) This section is not applicable to the 737 because it applies to C-46 type airplanes. (d) This section is not applicable to the 737 because it applies to C-46 type airplanes. (e) This section is not applicable to the 737 because it applies to non-transport category airplanes. (f) This section is not applicable to the 737 because it applies to non-transport category airplanes. (g) This requirement does not apply to the 737. (Appendix K applies to turboprop-powered airplanes). (h) The 737 is type certificated under Part 25.	(b) 737 Flight Standardization Board Report, Rev 14, 7-5-2017	

X	121.161	Airplane limitations: type of route.	(a) The type design reliability and performance of the 737-8 airplane has been evaluated in accordance with the requirements of FAR § 25.3(b)(1) and 25.1535 and found suitable for up to and including 180- minute Extended Operations (ETOPS) when operated and maintained in accordance with Boeing Document No. D044A032, "737 MAX ETOPS Configuration, Maintenance, and Procedures." This finding does not constitute approval to conduct ETOPS. The Airplane Flight Manual (AFM), Type Certificate Data Sheet (TCDS) and Configuration, maintenance and Procedures (CMP) document provide the necessary information for an operator seeking approval for ETOPS operation. (b) The 737 design is intended for certification under Part 25, including ditching provisions. (c) This paragraph does not apply to the 737 (applies to non-transport category airplanes not certificated under part 25). (d) N/A This airplane is supplied with turbine engines.	737 MAX Airplane Flight Manual; D631A002 737 MAX ETOPS CMP; D044A032, Rev E, 10-25-2017 737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	
X	121.162	Type Approval for ETOPS Operations	The type design reliability and performance of the 737-8 airplane has been evaluated in accordance with the requirements of FAR § 25.3(b)(1) and 25.1535 and found suitable for up to and including 180- minute Extended Operations (ETOPS) when operated and maintained in accordance with Boeing Document No. D044A032, "737 MAX ETOPS Configuration, Maintenance, and Procedures." This finding does not constitute approval to conduct ETOPS. The Airplane Flight Manual (AFM), Type Certificate Data Sheet (TCDS) and Configuration, maintenance and Procedures (CMP) document provide the necessary information for an operator seeking approval for ETOPS operation.	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	
X	121.163	Operational evaluation.	This requirement is operational in nature, and as such compliance is not directly dependent on the 737 airplane design.		
X		**Subpart J – Special Airworthiness Requirements:**	Title Only		
X	121.215	Cabin interiors.	This airplane complies with FAR 25.853 for compartment interiors requirements.	737 Flight Standardization Board Report, Rev 14, 7-5-2017	

			Illuminated No Smoking signs are installed to be visible to all passengers and cabin crew. Ashtrays are located in the flight deck and lavatories.	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	
X	121.217	Internal doors.	Does not apply to the 737 flight deck door (no louvers or other ventilating means).		
X	121.219	Ventilation.	The 737 environmental control system is designed to maintain CO concentration in passenger & crew compartments in compliance with 25.831. The 737 flight deck door has no louvers or other ventilating means.	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	
X	121.221	Fire precautions.	(a) - (e) Flight deck interior, passenger compartment, and cargo bay materials and components comply with the applicable requirements of this paragraph and FAR 25.853 and 25.855.	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	
X	121.223	Proof of compliance with 121.221.	(a) - (f) Flight deck interior, passenger compartment, and cargo bay materials and components comply with the applicable requirements of this paragraph and FAR 25.853 and 25.855.	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	
X	121.227	Pressure crossfeed arrangements.	The 737 meets the requirements of FAR 25.963, 25.967, 25.1185 and 25.1182, and 25.995 .	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	
X	121.229	Location of fuel tanks.	The 737 meets the requirements of FAR 25.963, 25.967, 25.1185 and 25.1182.	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	
X	121.231	Fuel system lines and fittings.	The 737 meets the requirements of FAR 25.993 for fuel system lines and fittings	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	
X	121.233	Fuel lines and fittings in designated fire zones.	The 737 meets the requirements of FAR 25.1183 and 25.1185.	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	
X	121.235	Fuel valves.	The 737 meets the requirements of FAR 25.1189 and 25.993 and 25.995.	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	
X	121.237	Oil lines and fittings in designated fire zones.	The 737 meets the requirements of FAR 25.1017, 25.1183 and 25.1185.	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	
X	121.239	Oil valves.	The 737 meets the requirements of FAR 25.1189 and 25.993.	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	
X	121.241	Oil system drains.	The 737 meets the requirements of FAR 25.1021 for oil system drains.	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	

X	121.243	Engine breather line.	The 737 meets the requirements of FAR 25.1017.	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	
X	121.245	Fire walls.	The 737 meets the requirements of FAR 25.1191 for firewalls.	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	
X	121.247	Fire walls construction.	The 737 meets the requirements of FAR 25.1191 for firewalls.	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	
X	121.249	Cowling.	The 737 meets the requirements of FAR 25.1193 for cowling and nacelle skin.	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	
X	121.251	Engine accessory section diaphragm.	The 737 meets the requirements of FAR 25.1192 for engine accessory section diaphragm.	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	
X	121.253	Powerplant fire protection.	The 737 meets the requirements of FAR 25.1195.	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	
X	121.255	Flammable fluids	The 737 meets the requirements of FAR 25.1185.	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	
X	121.257	Shutoff means.	The 737 meets the requirements of FAR 25.1189.	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	
X	121.259	Lines and fittings.	The 737 meets the requirements of FAR 25.1182, 25.993 and 25.1017.	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	
X	121.261	Vent and drain lines.	The 737 meets the requirements of FAR 25.1187.	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	
X	121.263	Fire extinguishing system.	The 737 design is compliant with this requirement via FAR 25.1195 and 25.1201.	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	
X	121.265	Fire extinguishing agents.	The 737 design is compliant with this requirement via FAR 25.1197 and 25.1201.	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	
X	121.267	Extinguishing agent container pressure relief.	The 737 meets the requirements of FAR 25.1199.	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	
X	121.269	Extinguishing agent container compartment temperature.	The 737 meets the requirements of FAR 25.1199.	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	

X	121.271	Fire extinguishing systems materials.	The 737 meets the requirements of FAR 25.1201.	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	
X	121.273	Fire detector systems.	The 737 meets the requirements of FAR 25.1203.	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	
X	121.275	Fire detectors.	The 737 meets the requirements of FAR 25.1203.	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	
X	121.277	Protection of other airplane components against fire.	The 737 meets the requirements of FAR 25.1182.	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	
X	121.279	Control engine rotation.	The 737 meets the requirements of FAR 25.1182.	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	
X	121.281	Fuel system independence.	The 737 meets the requirements of FAR 25.1953.	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	
X	121.283	Induction system ice prevention.	The 737 meets the requirements of FAR 25.1093.	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	
X	121.285	Carriage of cargo in passenger compartment.	The 737 design is compliant with this requirement via FAR 25.787, and 25.789.	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	
X	121.287	Carriage of cargo in cargo compartment.	This requirement is not applicable since the 737 cargo compartments are not designed to require the physical entry of a crewmember to extinguish a fire (an integral cargo fire protection system is installed).		
X	121.289	Landing gear: aural warning device.	(a) This requirement is not applicable to the 737 because it complies with the requirements of section FAR 25.729. (b) Landing warning cannot be inhibited. (c) This subpart provides technical installation guidelines.	737 MAX Configuration Specification D019A008, Rev P, ATA 32-30, 5-1-2017	
X	121.291	Demonstration of emergency evacuation procedures.	The 737 demonstrated compliance with the requirements of FAR 25.803 during type certification. Per 121.291(a)(1), an additional demonstration is not required for this paragraph.	737 FAA Type Certificate Data Sheet No. A16WE, Rev 59, 7-27-2017	
X		**Subpart K – Instrument and Equipment Requirements:**	Title Only		
X	121.303	Airplane instrument and equipment.	(a) N/A - Carburetors are not found on this airplane. This airplane is supplied with turbine engines.		

X	121.305	Flight and navigation equipment.	(a) Airspeed is indicated on the PFD and the standby ISFD. Electrical power automatically provides continuous thermal anti-icing for the pitot-static probes, total air temperature probes, and angle-of-attack sensors. (b) Altitude is indicated on the PFD the standby ISFD. PFD display is drum and pointer with digital indication of current altitude in feet. (c) Clock is displayed on the PFD. (d) True air temperature (numeric - degrees Celsius) is displayed on the PFD (e) Such indications are displayed on the PFDs.. (f) Slip-skid indication is on the PFD. (g) Such indicator is displayed on the PFDs. (h) One standby magnetic compass is installed. (i) Vertical speed is displayed on the PFD. (j) Attitude is indicated on the PFD and standby ISFD. The earth reference system (ERS) provides inertial/GPS source data and backup inertial navigation for use by flight control and systems. (k) Such indicator is displayed on the ISFD. When this indicator is being operated by emergency power, it will be shown on the MFD. System synoptics are shown on the MFD. A dedicated unit that includes a battery and a battery charger in the main equipment center provides supplemental standby power to the ISFD. Standby power is available for a minimum of 30 minutes.	737 MAX Configuration Specification D019A008, Rev P, ATA 34-00, 34-01, 31-25, 34-21, 34-23, 24-33, 34-11, 34-62, 5-1-2017	
X	121.307	Engine instruments.	(a) N/A - Carburetors are not found on this airplane. This airplane is supplied with turbine engines.	737 MAX Configuration Specification D019A008, Rev P, ATA 28-42, 73-00, 28-42, 31-61, 31-62, 24-33, 34-11, 31-62, 5-1-2017	

			(b) N/A - cylinders are not found on this airplane. This airplane is supplied with turbine engines. (c) A fuel pressure indication system monitors pressure in the fuel pumps and alerts the flight crew if pressure is low. Each fuel pump has a dedicated amber low-pressure light in the flight compartment. A master caution light illuminates in the flight compartment when both amber low-pressure lights illuminate for any one tank. (d) Fuel flow transmitters provide fuel flow information to the flight compartment. Fuel flow rate for each engine and the total fuel consumed by each engine are displayed in the flight compartment. (e) The engine display in the flight compartment includes a fuel quantity indicator for each fuel tank (f) N/A - cylinders are not found on this airplane. This airplane is supplied with turbine engines. (g) The engine display in the flight compartment includes an oil pressure indicator for each engine. (h) The engine indicating and crew alerting system displays oil quantities. (i) The engine display in the flight compartment includes an oil temperature indicator. (j) The airplane is supplied with multi-spooled engines, and the engine display includes N1 & N2 rotational speeds. (k) A fuel pressure indication system monitors pressure in the fuel pumps and alerts the flight crew if pressure is low. Each fuel pump has a dedicated amber low-pressure light in the flight compartment. A master caution light illuminates in the flight compartment when both amber low-pressure lights illuminate for any one tank. (l) N/A - The airplane is supplied with turbojet engines.	11; 91-82; 5-1-2017	

X	121.308	Lavatory fire protection.	Each lavatory is equipped with a smoke detector system compliant with 25.854(a) and thus meets this requirement.	737 Type Certificate Data Sheet No A16WE, 14 CFR 25.854(a), Rev 59, 7-27-2017	
X	121.309	Emergency equipment.	(a) The 737 is designed to accommodate emergency equipment compliant with the requirements of this paragraph and 121.310. (b) Emergency equipment provided with the 737 complies with FAR 25.851 and 25.1411, and meets the design requirements of this paragraph.	737 Flight Standardization Board Report, Rev 14, 7-5-2017 737 Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017	
X	121.31	Additional emergency equipment.	(a) The airplane has escape systems that are designed to accommodate the number of passengers and crew in the airplane for both land and water evacuation. An escape slide is on the lower inboard face of each entry door and each service door. The escape slides are automatically inflated when the slide is armed and the door is opened. Each passenger entry door emergency evacuation slide/raft and pneumatic door opening system contains an assisting means approved per FAR 25.809. (b) Placards, markings, and lighted signs in the passenger compartment provide information for passengers, attendants, and maintenance personnel. Symbolic signs are used whenever possible. A floor proximity escape path lighting system in the passenger compartment shows the escape path to the exits if the emergency lighting system is activated. There are electrically powered EXIT signs above each emergency exit and in the overhead area of the aisle near each exit. The application for the type certificate was filed after to May 1, 1972. This requirement is operational in nature. However, the 737 emergency exit markings are certified based on the design requirements under FAR 25.811. N/A The 737 is a transport category airplane. (c) An emergency lighting system provides lighting if an emergency evacuation is necessary and normal power is not available.	737 MAX Configuration Specification D019A008, Rev P, ATA 25-66, 11-35, 33-50, 33-51, 33-52, 5-1-2017 737 Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017	

			White LED emergency lights in the flat ceiling panels and valances above the overhead stowage bins illuminate the aisle in the passenger compartment. An emergency dome light illuminates the flight compartment. All exit signs in the passenger compartment are illuminated by a separate dc source. The forward and aft entry doors and service doors are identified by exit identifiers on the forward and aft galleys or lavatories near the sidewall. Exit lights above the left and right overwing hatches provide light for the hatch handle and operating instructions. An exterior emergency light is located aft of each entry and service door on the left and right side of the airplane and illuminates the escape slide when the slide is deployed. Overwing emergency lights are positioned to illuminate the escape path area on the wings. Offwing ground illumination lights are located aft of each wing. All emergency lights are powered by separate dc sources (battery packs). A floor proximity escape path lighting system in the passenger compartment shows the escape path to the exits in the event of an emergency evacuation. (d) All emergency lights are powered by separate dc sources (battery packs). If essential ac and dc power is lost, the emergency lights and signs automatically illuminate. A three-position ON-ARMED-OFF master switch on the forward overhead panel (P5) in the flight compartment controls the emergency lights as follows: • ON: Each emergency light and sign is energized by its related battery.		

			• OFF: Emergency light circuits are de-energized and disarmed. Batteries for the lights are charged by their individual rectifiers when airplane or ground power is available. • ARMED: The emergency lights and signs are off if the dc bus is energized. Batteries for the lights are charged through their individual rectifiers. If essential ac and dc power is lost, the emergency lights and signs automatically illuminate. A light illuminates in the flight compartment if the master switch is not in the ARMED or ON position. The emergency lights are also controlled by an emergency override switch on the aft attendant panel. This is operational in nature. Emergency lights are certified based on the design specifications under FAR 25.812. (e) Emergency exit operating handles are certified based on FAR 25.811 specifications. The application for the type certificate was filed after May 1, 1972. (f) Access to emergency exits is designed to meet the requirements of this paragraph and FAR 25.813. Type III emergency overwing exit doors are installed. Curtains are installed for class dividers and attendant work areas. The curtains are made of fabric that is pleated and have tie-backs as necessary. It is not necessary to pass through doors in the passenger cabin of the 737 to reach an emergency exit.		
X	121.311	Seats, safety belts, and shoulder harnesses.	(a) Passenger seats and seat belts are installed in accordance with the customer's interior arrangement, and are approved passenger to meet the requirements of this paragraph, FARs 25.562 and 25.785.	737 MAX Configuration Specification D019A008, Rev P, ATA 25-11, 25-25, 5-1-2017 737 Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017	

			(b) This requirement is operational in nature, and as such is not directly dependent on the airplane configuration. (c) This is operational in nature, and as such is not directly dependent on the airplane configuration. (d) This airplane model has been type certified in accordance with the said FAR part 25 requirement. (e) This is operational in nature, and as such is not dependent on the airplane configuration. (f) The captain's and first officer's seats include these features: • An integrated restraint system with an inertial reel shoulder harness and a manual lock • A lap belt • An adjustable crotch strap • Stowable armrests • An adjustable headrest The flight deck station and flight attendant seats fully comply with FAR part 25.562 and 25.785 specifications. (g) Passenger seats and seat belts are installed in accordance with the customer's interior arrangement. The flight deck station and flight attendant seats fully comply with FAR part 25.562 and 25.785 specifications. (h) This requirement is operational in nature. However, pilot reach to controls with all belts fastened is designed to be compliant with 14 CFR 25.777(c). (i) This requirement is operational in nature. However, pilot reach to controls with all belts fastened is designed to be compliant with 14 CFR 25.777(c). (j) Passenger and flight attendant seats meet the requirements of FAR 25.562.		

			(k) This is operational in nature, and as such does not directly depend on the airplane configuration.		
X	121.312	Material for compartment interiors.	(a) This 737 model was type certified after January 1, 1965. (b) Seat cushions are certified in accordance with FAR part 25.853 specifications . (c) Materials for compartment interiors are certified in accordance with FAR part 25.853 specifications. (d) Materials in compartments used by crewmembers or passengers meet the requirements in FAR 25.853. (e) This part provides technical clarification for the subsequent paragraphs. This 737 model was manufactured after September 2, 2005. Thermal / acoustic insulation materials installed in the fuselage meet the requirements of FAR Part 25.856.	737 Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017	
X	121.313	Miscellaneous equipment.	(a) N/A - electrical fuses are not used on the 737. Electrical circuit breakers are installed. (b) There are two electric windshield wipers, one on each forward windshield. The wipers are independently operated by switches on the forward overhead panel (P5). Each switch has speed selections for park, intermittent (INT), low (LO), and high (HI). The two forward number 1 windshields have a hydrophobic coating to improve visibility during rain. This coating causes liquid droplets to bead and roll off the windshield. (c) The power supply and distributions systems are certified in accordance with the said FAR Part 25 requirements.	737 MAX Configuration Specification D019A008, Rev P, ATA 30-41, 31-60, 34-11, 52-51, 52-00, 25-40, 11-30, 52-51, 23-75, 5-1-2017 737 Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017	

			(d) System synoptics are shown on the MFD. Annunciator lights on the forward overhead panel alert the flight crew to electrical system faults and conditions when electrical buses are unpowered. (e) A total of five separate pitot probes sense the total air pressure. Three static port pairs, mounted flush with the fuselage skin, sense static pressure. Two pitot probes, two static port pairs, and four air data modules (ADM) provide air pressure data to the air data inertial reference units (ADIRU). One pitot probe provides air pressure data to the standby instrument. One static port pair provides air pressure data to the standby instrument and to the cabin differential pressure indicator. (f) There is a door between the flight compartment and the passenger compartment that includes these features: • Door construction that incorporates intrusion and ballistic characteristics compliant with FAR 25.795 • Electronic door latching and access system • Access keypad in the passenger compartment and chime module in the flight compartment • Status/access request indication lights and access control switch on the pilot's panel • Power-down switch in the flight compartment • Deadbolt lock keyed on the passenger compartment side • Wide-angle lens for passenger compartment viewing • Mirror and certificate/license holder on the forward face of the door (g) N/A - it is not necessary to pass through doors in the passenger cabin of the 737 to reach an emergency exit. Access to emergency exits is approved in accordance with 14 CFR 25.813. (h) N/A - There is no need to pass through a doorway to reach an emergency exit. There is a placard that reads "Fasten curtain open during taxi, takeoff and landing - main cabin" (i) Only lavatory doors may be locked by passengers. Lavatory doors can be unlocked from the passenger compartment side of the door without the use of special tools.		

			(j) The flight compartment door and bulkhead construction incorporate intrusion and ballistic characteristics compliant with FAR 25.795, keyless locking system and crew alerting through the engine indication and crew alerting system. A placard with the text 'crew only' is affixed to the door. (k) The door includes a wide-angle lens (viewing port) for passenger compartment viewing. Customers can select a Flight Deck Entry Video Surveillance System (FDEVSS). The FDEVSS will enable the flight crew to view a person approaching the flight deck on the Electronic Flight Bag displays. The system includes three video surveillance cameras, which are installed in standard locations.		
X	121.314	Cargo and baggage compartments.	(a) All lower deck cargo compartments are Class C compartments per FAR Part 25, Section 25.857. Cargo and baggage compartment ceiling and sidewall liner panels are constructed of glass fiber reinforced resin and meet the test requirements of the specified Part 25 requirements. (b) This part provides technical clarification to the subsequent paragraphs. (c) All lower deck cargo compartments are Class C compartments per FAR Part 25, Section 25.857. (d) This is operational in nature. All lower deck cargo compartments are Class C compartments per FAR Part 25, Section 25.857.	737 MAX Configuration Specification D019A008, Rev P, ATA 50-10, 5-1-2017 737 Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017	
X	121.315	Cockpit check procedures.	(a) This is operational in nature. Boeing provides training materials and manuals to help satisfy this requirement. (b) This is operational in nature. Boeing provides training materials and manuals to help satisfy this requirement. (c) This is operational in nature. Boeing provides training materials and manuals to help satisfy this requirement.		
X	121.316	Fuel tanks.	This airplane meets the requirements set forth by FAR 25.963.	737 Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017	

X	121.317	Passenger information Requirements. Smoke Prohibition and additional requirements for seat belts	(a) Passenger information signs are prepared and installed in accordance with FAR 25.791 requirements. (b) This is operational in nature. Illuminated, symbolic FASTEN SEAT BELT and NO SMOKING signs are visible for all seated passengers and attendants. (c) Illuminated, symbolic FASTEN SEAT BELT and NO SMOKING signs are visible for all seated passengers and attendants. (d) Fasten seat belt and no smoking signs are installed. The 737 model design is compliant with the requirements of this paragraph and section 25.791. (e) Customer-defined placards and markings are available through selectable options. This placard is installed on the lavatory ceiling next to the smoke detector per 25.1541. (f) This is operational in nature. Passenger seats and seat belts are installed in accordance with the customer's interior arrangement. Illuminated, symbolic FASTEN SEAT BELT and NO SMOKING signs are visible for all seated passengers and attendants. (g) This is operational in nature. Illuminated, symbolic FASTEN SEAT BELT and NO SMOKING signs are visible for all seated passengers and attendants. (h) This is operational in nature. Each lavatory has information and instruction placards, including a "NO SMOKING" sign. (i) This is operational in nature. Each lavatory has smoke detecting equipment. If smoke is detected, a warning sound is produced that can be heard in the passenger compartment. A reset button is on the smoke detector. (j) This is operational in nature, and as such is not directly dependent on the airplane configuration. Illuminated symbolic FASTEN SEAT BELT sign and NO SMOKING placards are installed in view of all passenger and attendant seats.	737 MAX Configuration Specification D019A008, Rev P, ATA 11-30, 33-24, 25-23, 25-25, 35-40, 35-40, 5-1-2017 737 Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017	

			(k) This is operational in nature, and as such is not directly dependent on the airplane configuration. (l) N/A - This 737 model is a transport category airplane.		
X	121.318	Public address system.	(a) The Passenger Address system operates independently of the Interphone System. PA announcements are given through the flight compartment and service interphone systems. The flight crew accesses the PA system through the flight compartment microphones. The audio selector panels include a PA selection. The attendants access the PA system with a switch on their handsets. (b) The PA system is approved in accordance with FAR 21.305(c) (c) The PA handset on the flight deck is located on the aisle stand between the two pilots. The pilot audio control panels are located on the aisle stand. Reach to all flight deck controls is shown to be compliant to 25.777(c). (d) Handsets are installed in the flight compartment and at each attendant station. PA Announcements can be made using the push-to-talk switch on these handsets. Additional capabilities are the customer's responsibility. The 737 model complies with 25.1423(g) and therefore meets this requirement. (e) An attendant switch panel and handset is installed at each attendant station. This 737 model complies with the requirements of 14 CFR 25.1423 for public address system performance. Operation of the PA can be accomplished within three seconds. (f) The airplane complies with 25. 1423(c) and hence the PA system complies with this requirement. The PA system is configured to provide announcements to the entire passenger compartment (one PA area). A PA amplifier unit in the E/E bay operates an electronic chime for call signals. Speakers in the passenger compartment provide audio to all passengers and attendants. Each lavatory has a speaker. Speakers for the attendants are in the ceiling above the forward galley area and above the aft entry and service doors.	737 MAX Configuration Specification D019A008, Rev P, ATA 23-31, 5-1-2017 737 Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017	

			(g) The public address system is approved in accordance with FAR 25.1423 specifications.		
X	121.319	Crewmember interphone system.	(a) The Flight Interphone and Cabin Interphone systems are included in the baseline airplane. The public address (PA) and Interphone systems can be operated independently. The crew interphone system operation is designed to meet the requirements of this paragraph. (b) The crew interphone system was approved in accordance with FAR 21.305(c) and meets the additional requirements of this subparagraph. The service/cabin interphone system enables communication between the flight compartment and the passenger compartment, and the flight compartment and the service connections. There is cabin interphone access at the attendant handset installed at the forward and aft attendant stations, along with access by the Pilot, 1st Officer and Observer stations on the flight deck. This access is included in the baseline airplane. The 737 airplane does not have galley or flight crew compartments other than the main passenger deck. The flight interphone system enables communication between: • Flight crew members • Flight crew and ground crew The flight crew and the first observer access the system through the (audio control panels) ACPs. Each flight crew member has access to the Interphone system. Attendant handsets are installed at the forward and aft attendant stations. Each attendant handset can access the Flight Interphone and Cabin Interphone, and is included in the baseline airplane. An attendant switch panel and handset is installed at each attendant station. The crew interphone system was approved in accordance with FAR 21.305(c) and meets the additional requirements of this subparagraph	737 MAX Configuration Specification D019A008, Rev P, ATA 23-51, 23-40, 5-1-2017 737 Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017	

			Attendant handsets are installed at the forward and aft attendant stations. Each attendant handset can access the Flight Interphone and Cabin Interphone, and is included in the baseline airplane. The Cabin Crew can alert the Flight Crew by dialing “2” (Pilot Call) on any Attendant handset. A Pilot Call illuminates a Call Light and HI Chime in the flight deck. The Flight Crew can alert the Cabin Crew by selecting the Cabin Interphone on the Audio Selector Panel. A Cabin Call illuminates Call Lights in the exit locators and a HI/LO Chimes over cabin speakers. This functionality is included in the baseline airplane. In compliance for Pilot Call. The Cabin Crew alert to the Flight Crew can indicate an emergency (Alert) situation by pressing the “2” multiple times (per airline operations. The Flight Deck Chime will sound in the flight deck for each press. This Alert is identified on the placard installed on the back of each Cabin Attendant Handset. Priority calls from the cabin display on the MFD. Priority calls automatically disconnect lower priority cabin interphone calls. The service/cabin interphone system enables communication between the flight compartment and the passenger compartment, and the flight compartment and the service connections.		
X	121.323	Instruments and equipment for operations at night.	(a) One LED position light and one LED marker light are on each winglet. The forward position light on the left winglet is red. The forward position light on the right winglet is green. The aft marker lights are white and assist service personnel during ground operations. There is one white LED position light on each side of the tailcone. A switch on the forward overhead panel (P5) in the flight compartment controls these lights. (b) There are red anti-collision strobe lights as follows: • One on the top of the fuselage. • One on the bottom of the fuselage. The light on the top of the fuselage can be replaced from inside the airplane. There are white anti-collision strobe lights as follows:	737 MAX Configuration Specification D019A008, Rev P, ATA 33-43, 33-44, 33-42, 33-10, 31-62, 34-11, 5-1-2017 737 Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017	

			• One on the left forward winglet. • One on the right forward winglet. • One on the tailcone. The lights on the tailcone are colocated with the position lights. A switch on the forward overhead panel (P5) in the flight compartment controls these lights. (c) The landing, taxi, and runway turnoff light (LTRTL) assembly is inside the left and right wing strakelets and uses light emitting diodes (LED) as the light source. There are two landing lights, one in each wing root. The orientation of each light is designed to ensure sufficient beam spread during approach, flare, and ground roll. (d) The airplane is equipped with lighting controls for all displays and panels. In addition, the main displays will have automatic and manual brightness controls. Anti-reflective coatings are used to reduce reflections and glare off the displays. Instrument lighting reflections, and illumination intensity controls comply with section 25.1381. (e) Airspeed is indicated on the PFD and the standby ISFD. Airspeed is calibrated in knots. Electrical power automatically provides continuous thermal anti-icing for the pitot-static probes, total air temperature probes, and angle-of-attack sensors. (f) The PFD shows altitude indication including barometric setting. Barometric settings are selected in inches of mercury or hectopascals. Altitude indication is calibrated in feet.		
X	121.325	Instruments and equipment for operations under IFR.	(a) Airspeed is indicated on the PFD and the standby ISFD. Electrical power automatically provides continuous thermal anti-icing for the pitot-static probes, total air temperature probes, and angle-of-attack sensors. (b) The PFD shows altitude indication including barometric setting. Barometric settings are selected in inches of mercury or hectopascals. Altitude indication is calibrated in feet.	737 MAX Configuration Specification D019A008, Rev P, ATA 30-00, 22-10, 34-11, 33-10, 5-1-2017	

			(c) The airplane is equipped with lighting controls for all displays and panels. In addition, the main displays will have automatic and manual brightness controls. Anti-reflective coatings are used to reduce reflections and glare off the displays. Instrument lighting reflections, and illumination intensity controls comply with section 25.1381.		
X	121.327	Supplemental oxygen: conventional engine airplanes.	N/A - the 737 is a turbine engine powered airplane.		
X	121.329	Supplemental oxygen for sustenance: turbine powered airplanes.	(a) 737 Crew and passenger oxygen systems that are compliant with Parts 25. 1441, 25. 1443, 25. 1445, and 25. 1447 are provided for emergency supplemental oxygen use. The systems can be operated in accordance with 121.329. Individual oxygen masks are released above the passenger seats, attendant seats, and in each lavatory. The system can also be activated by a switch in the flight compartment. The passenger compartment oxygen system is certified to supply oxygen for at least 12 minutes. Chemical oxygen generators can supply oxygen for 12 or 22 minutes. Longer durations require a gaseous system. A customer selection is required. It is the operator's responsibility to ensure the appropriate quantity of cylinders and/or oxygen is installed on the airplane to meet requirements. The quantity of masks is at least 10% more than the sum of passenger seats and attendant seats to ensure the FAA's 10% overage requirement. (b) The equipment standards for oxygen dispensing units in the 737 has been shown to meet the requirement of 14 CFR 25.1447. Two hours' worth of oxygen is provided to meet this requirement. The flight (crew) compartment oxygen system can supply sufficient oxygen to the flight compartment occupants for protective breathing of 300 liters per occupant (normal temperature and pressure dry [NTPD]) during a Boeing-approved emergency descent profile. The flight compartment oxygen system can be replenished by replacing the oxygen cylinder.	737 MAX Configuration Specification D019A008, Rev P, ATA 25-10, 25-20, 35-10, 5-1-2017 737 MAX Standard Selections Catalog D924A110-6, 35-20, 8-1-2017 737 Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017	

			(c) 737 Crew and passenger oxygen systems that are compliant with Parts 25. 1441, 25. 1443, 25. 1445, and 25. 1447 are provided for emergency supplemental oxygen use. The systems can be operated in accordance with 121.329. Individual oxygen masks are released above the passenger seats, attendant seats, and in each lavatory. The system can also be activated by a switch in the flight compartment. The passenger compartment oxygen system is certified to supply oxygen for at least 12 minutes. Chemical oxygen generators can supply oxygen for 12 or 22 minutes. Longer durations require a gaseous system. A customer selection is required. It is the operator's responsibility to ensure the appropriate quantity of cylinders and/or oxygen is installed on the airplane to meet requirements. The quantity of masks is at least 10% more than the sum of passenger seats and attendant seats to ensure the FAA's 10% overage requirement.		
X	121.331	Supplemental oxygen requirements for pressurized cabin airplanes: conventional engine airplanes.	N/A - the 737 is a turbine engine powered airplane.		
X	121.333	Supplemental oxygen for emergency descent and for first aid; turbine powered airplanes with pressurized cabins.	(a) An oxygen system compliant with Parts 25.144 1, 25.1443, 25.1445, and 25.1447 is provided. It is the operator's responsibility to ensure the appropriate quantity of cylinders and/or oxygen is installed on the airplane to meet requirements. The flight crew oxygen system is supplied by high-pressure oxygen cylinders that can be replenished by replacing the cylinders or by refilling them through a remote port. As for the passenger compartment oxygen system, chemical oxygen generators can supply oxygen for 12 or 22 minutes. Longer durations require a gaseous system.	737 MAX Configuration Specification D019A008, Rev P, ATA 25-10, 25-20, 35-10, 5-1-2017 737 MAX Standard Selections Catalog D924A110-6, 25-10, 25-20, 35-20, 8-1-2017 737 Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017	

			(b) The equipment standards for oxygen dispensing units in the 737 has been shown to meet the requirement of 14 CFR 25.1447. Two hours' worth of oxygen are provided to meet this requirement. The flight compartment oxygen system can supply sufficient oxygen to the flight compartment occupants for protective breathing of 300 liters per occupant (normal temperature and pressure dry [NTPD]) during a Boeing approved emergency descent profile. The flight crew oxygen system is supplied by high-pressure oxygen cylinders that can be replenished by replacing the cylinders or by refilling them through a remote port. The passenger compartment oxygen system is replenished by replacing the chemical oxygen generating unit in each passenger service unit, lavatory service unit, and attendant service unit. Chemical oxygen generators can supply oxygen for 12 or 22 minutes. Longer durations require a gaseous system. It is the operator’s responsibility to ensure the appropriate quantity of cylinders and/or oxygen is installed on the airplane to meet requirements. (c) The equipment standards for oxygen dispensing units in the 737 has been shown to meet the requirement of 14 CFR 25.1447. Flight Crew oxygen masks are provided that allow the operator to comply with this operational requirement. The flight compartment oxygen system can supply sufficient oxygen to the flight compartment occupants for protective breathing of 300 liters per occupant (normal temperature and pressure dry [NTPD]) during a Boeing-approved emergency descent profile. The flight compartment oxygen system can be replenished by replacing the oxygen cylinder. It is the operator’s responsibility to ensure the appropriate quantity of cylinders and/or oxygen is installed on the airplane to meet requirements.		

			(d) Portable oxygen equipment is installed for each attendant (per 25.1447(c)(4)). While attendants are between attendants' seat locations, oxygen is available from the additional oxygen masks installed (vs. number of passenger seats) at the Passenger Service Units (per 25.1447(c)(l)). The passenger compartment oxygen system is certified to supply oxygen for at least 12 minutes. Chemical oxygen generators can supply oxygen for 12 or 22 minutes. Longer durations require a gaseous system. A customer selection is required. It is the operator’s responsibility to ensure the appropriate quantity of cylinders and/or oxygen is installed on the airplane to meet requirements. (e) The equipment standards for oxygen dispensing units in the 737 has been shown to meet the requirement of 14 CFR 25.1447. The flight compartment oxygen system can supply sufficient oxygen to the flight compartment occupants for protective breathing of 300 liters per occupant (normal temperature and pressure dry [NTPD]) during a Boeing approved emergency descent profile. The flight crew oxygen system is supplied by high-pressure oxygen cylinders that can be replenished by replacing the cylinders or by refilling them through a remote port. The passenger compartment oxygen system is replenished by replacing the chemical oxygen generating unit in each passenger service unit, lavatory service unit, and attendant service unit. Chemical oxygen generators can supply oxygen for 12 or 22 minutes. Longer durations require a gaseous system. It is the operator’s responsibility to ensure the appropriate quantity of cylinders and/or oxygen is installed on the airplane to meet requirements. (f) This is operational in nature, and as such does not directly depend on the airplane configuration.		
X	121.335	Oxygen system standards.	(a) N/A - This 737 model is equipped with turbojet engines.	737 Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017	

			(b) 737 Crew and passenger emergency oxygen systems are compliant with the requirements of 14CFR 25.1441, 14CFR 25.1443, and 14 CFR 25.1447.		
X	121.337	Protective breathing equipment.	(a) This part provides technical clarification for the subsequent paragraph(s). Protective breathing equipment is provided that is compliant with this paragraph and FAR part 25.1439. (b) Protective breathing equipment is provided that is compliant with this paragraph and FAR part 25.1439. The protective breathing equipment (PBE) will protect the eyes, nose and mouth of each flight crew member while on flight deck duty and to provide oxygen for more than 15 minutes. If more than one PBE is needed, it must be chosen by selectable option. Customer selection is also required for PBE in the passenger cabin. (b.1) The protective breathing equipment (PBE) will protect the eyes, nose and mouth of each flight crew member while on flight deck duty and to provide oxygen for more than 15 minutes. If more than one PBE is needed, it must be chosen by selectable option. Customer selection is also required for PBE in the passenger cabin. (b.2) This is operational in nature, and as such is not directly dependent on the airplane configuration. (b.3) The Protective breathing equipment will not impair the wearer's vision. The PBE provided is compliant with 14 CFR 25.1439 and 14CFR 121.337. (b.4 -b.5) The flight crew can communicate using radio equipment and interphone as required while using PBE. The Protective breathing equipment provided is compliant with 14 CFR 25.1439 and 14 CFR 121.337. (b.6) This part provides applicability information regarding the use of PBEs as oxygen sources.	737 Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017 737 MAX Standard Selections Catalog D924A110-6, 25-60, 25-64, 35-10, 8-1-2017	

			(b.7) The protective breathing equipment (PBE) will protect the eyes, nose and mouth of each flight crew member while on flight deck duty and to provide oxygen for more than 15 minutes. If more than one PBE is needed, it must be chosen by selectable option. Customer selection is also required for PBE in the passenger cabin. (b.8) One portable protective breathing equipment (PBE) device or smoke hood can be installed in the flight compartment closet. Customer selection is required. (b.9) Protective breathing equipment is provided that is compliant with this paragraph and FAR part 25.1439. A portable PBE can be provided for each required hand-held fire extinguisher via customer selection. Detachable emergency equipment selections install equipment in customer-selected locations in the passenger compartment. (c) This requirement clarifies the technical compliance standards. (c.1) This is operational in nature, and as such is not directly dependent on the airplane configuration. (c.2) This is operational in nature, and as such is not directly dependent on the airplane configuration. Detachable emergency equipment selections install equipment in customer-selected locations in the passenger compartment. A PBE can be installed at cabin crew stations via customer selection.		
X	121.339	Emergency equipment form extended overwater operations.	(a) The 737 model design complies with FAR part 25.1415, and includes a life preserver equipped with a survivor locator light for each occupant of the airplane, slide/raft to cover rated capacity, a flare for each raft, and an ELT. (a.1) Emergency equipment are installed in the flight deck and passenger compartments to satisfy FAR Part 25. Life vests, that include a survivor locator light, are installed in the flight deck for use by pilots and observers, each flight attendant seat and every passenger seat location.	737 Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017 737 MAX Standard Selections Catalog D924A110-6, 25-60, 23-24, 8-1-2017 737 MAX Configuration Specification D019A008, Rev P, ATA 25-62, 5-1-2017	

			(a.2) Slide-rafts that can be used for life rafts are installed at all emergency exits. If necessary, additional life rafts can be installed per customer selection. Both slide-rafts and life rafts include a locator light for finding the raft at night and a survival kit. (a.3) A pyrotechnic signaling (flare) device can be installed in rafts to comply with regulatory agency requirements. (a.4) An automatic emergency locator transmitter (ELT) is installed that is fixed to the airplane and is activated automatically by an acceleration sensor (a function of a G force and time). Additional ELTs are per customer selection. Selections are required to install: 1. Portable emergency locator transmitters (ELT) 2. Automatic emergency locator transmitter. (b) Detachable emergency equipment selections install equipment in customer-selected locations in the airplane. Emergency equipment is readily accessible, as required for compliance with FAR part 25.1411. (c) Each slide-raft and life raft contains a locator light, pyrotechnic signaling devices and a survival kit.		
X	121.340	Emergency flotation means required.	(a) Emergency equipment are installed in the flight deck and passenger compartments to satisfy FAR Part 25. Life vests, that include a survivor locator light, are installed in the flight deck for use by pilots and observers, each flight attendant seat and every passenger seat location. (b) This requirement is operational in nature and as such compliance is not directly dependent on the airplane configuration.	737 MAX Standard Selections Catalog D924A110-6, 25-60, 8-1-2017	
X	121.341	Equipment for operations in icing conditions	(a) The 737 model airplane provides for the prevention /removal of ice with thermal ice protection systems for the wings and engines, and electrical heating for flight deck windows and air data probes.	737 MAX Configuration Specification D019A008, Rev P, ATA 30-30, 5-1-2017	

			Electrical power automatically provides continuous thermal anti-icing for the pitot-static probes, total air temperature probes, and angle-of-attack sensors. The ice detection system and exterior lights installed do not cause glare or reflection that would handicap crew members in the performance of their duties. (b) The ice detection system and exterior lights installed do not cause glare or reflection that would handicap crew members in the performance of their duties. (c) N/A - This 737 model is a transport category airplane. (d) This requirement is operational in nature and as such compliance is not directly dependent on the airplane design.		
X	121.342	Pitot heat indication system.	The 737 model airplane complies with section 25.1326 and provides amber annunciator lights that alert for failure of one or more pitot probe heat systems. Pitot heater failures are indicated on the MFD.	737 MAX Configuration Specification D019A008, Rev P, ATA 31-61, 5-1-2017 737 Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017	
X	121.343	Flight Data Recorders.	(a) An ARINC 717 flight data recorder system (FDRS) records and stores data for the last 25 hours of flight. The system includes an ARINC 747 digital flight data recorder (DFDR). The system also includes an ARINC 757 solid state flight compartment voice recorder system with two-hour voice and data link recording capability. (b) This 737 model was type certified after September 30, 1969. (c) The 737 model airplane's flight data recorder uses a digital solid state recording medium and is compliant with section 121.344.	737 MAX Configuration Specification D019A008, Rev P, ATA 31-31, 23-71, 5-1-2017 737 Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017 737 MAX Standard Selections Catalog D924A110-6, 31-31, 8-1-2017	

			(d, e, f) The 737 model airplane's flight data recorder was designed and tested to meet all Part 25, 91 , 121, and 125 requirements, and approved the requirements of section 25.1459. The ARINC 747 flight data recording system (FDRS) records and stores data for the last 25 hours of flight. The system automatically operates when either engine is operating or the airplane is in the air. The FDRS records parameter groups as specified by mandatory regulatory agency requirements. The available FDR system is of Type IA. (g) An FDR system is installed that begins recording as early as possible during flight compartment checks (before engine start at the beginning of the flight) and continues recording until flight compartment checks cease at the end of the flight (after engine shutdown). The 737 complies with the requirements of 14 CFR 121.359 for continuous operation. (h) This requirement is operational in nature. The flight data recording system records the last 25 hours of flight parameters. It records parameters that are required by either FAR 121.344 or JAR-OPS 1. (i) This requirement is operational in nature. The flight data recording system records the last 25 hours of flight parameters. It records parameters that are required by either FAR 121.344 or JAR-OPS 1. (j) The FDR system is installed in accordance with FAR part 25.1459 specifications. (k) An underwater locator beacon is attached to the DFDR.		

			(l) This is operational in nature. An ARINC 717 flight data recorder system (FDRS) records and stores data for the last 25 hours of flight. The system includes an ARINC 747 digital flight data recorder (DFDR). The system also includes an ARINC 757 solid state flight compartment voice recorder system with two-hour voice and data link recording capability. (m) This part provides technical clarification for the general applicability of sub-regulations.		
X	121.344	Digital flight data recorders for transport category airplanes.	(a) The 737 model airplane's flight data recorder was designed and tested to meet all Part 25, 91 , 121, and 125 requirements, and approved the requirements of section 25.1459. (b) This 737 model was manufactured after October 11, 1991. (b.1) This 737 model was manufactured after October 11, 1991. This 737 model has installed a digital flight data acquisition function (DFDAF) in the airplane information management system (AIMS) cabinet. The DFDAF formats and sends the data to the digital flight data recorder (DFDR), which stores it in a crash-resistant container. (b.2) This 737 model was manufactured after October 11, 1991. The flight data recording system records the last 25 hours of flight parameters. It records parameters that are required by either FAR 121.344 or JAR-OPS 1. Airplane systems send digital, discrete, and analog data to the digital flight data acquisition function (DFDAF) in the airplane information management system (AIMS) cabinet. The DFDAF formats and sends the data to the digital flight data recorder (DFDR), which stores it in a crash-resistant container. (b.3) This 737 model was manufactured after October 11, 1991. (c) This 737 model was manufactured after October 11, 1991. (c.1) This 737 model was manufactured after October 11, 1991.	737 MAX Configuration Specification D019A008, Rev P, ATA 31-31, 5-1-2017 737 Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017 737 MAX Standard Selections Catalog D924A110-6, 31-31, 8-1-2017	

			(c.2) This 737 model was manufactured after October 11, 1991. (c.3) This 737 model was manufactured after October 11, 1991. (d) This part provides technical clarification for regulation applicability in subsequent paragraphs. (d.1) The flight data recording system records the last 25 hours of flight parameters. It records parameters that are required by either FAR 121.344 or JAR-OPS 1. Airplane systems send digital, discrete, and analog data to the digital flight data acquisition function (DFDAF) in the airplane information management system (AIMS) cabinet. The DFDAF formats and sends the data to the digital flight data recorder (DFDR), which stores it in a crash-resistant container. (d.2) The flight data recording system records the last 25 hours of flight parameters. It records parameters that are required by either FAR 121.344 or JAR-OPS 1. Airplane systems send digital, discrete, and analog data to the digital flight data acquisition function (DFDAF) in the airplane information management system (AIMS) cabinet. The DFDAF formats and sends the data to the digital flight data recorder (DFDR), which stores it in a crash-resistant container. (e) The 737 model airplane's flight data recorder was designed and tested to meet all Part 25, 91, 121, and 125 requirements, and approved the requirements of section 25.1459. (e.1-3) The flight data recording system records the last 25 hours of flight parameters. It records parameters that are required by either FAR 121.344 or JAR-OPS 1. Airplane systems send digital, discrete, and analog data to the digital flight data acquisition function (DFDAF) in the airplane information management system (AIMS) cabinet. The DFDAF formats and sends the data to the digital flight data recorder (DFDR), which stores it in a crash-resistant container.		

			(f) The 737 model airplane's flight data recorder was designed and tested to meet all Part 25, 91 , 121, and 125 requirements, and approved the requirements of section 25.1459. (f.1) The flight data recording system records the last 25 hours of flight parameters. It records parameters that are required by either FAR 121.344 or JAR-OPS 1. Airplane systems send digital, discrete, and analog data to the digital flight data acquisition function (DFDAF) in the airplane information management system (AIMS) cabinet. The DFDAF formats and sends the data to the digital flight data recorder (DFDR), which stores it in a crash-resistant container. (f.2) The flight data recording system records the last 25 hours of flight parameters. It records parameters that are required by either FAR 121.344 or JAR-OPS 1. Airplane systems send digital, discrete, and analog data to the digital flight data acquisition function (DFDAF) in the airplane information management system (AIMS) cabinet. The DFDAF formats and sends the data to the digital flight data recorder (DFDR), which stores it in a crash-resistant container. (g) An FDR system is installed that begins recording as early as possible during flight compartment checks (before engine start at the beginning of the flight) and continues recording until flight compartment checks cease at the end of the flight (after engine shutdown). The 737 complies with the requirements of 14 CFR 121.359 for continuous operation. The 737 model airplane's flight data recorder was designed and tested to meet all Part 25, 91, 121, and 125 requirements, and approved the requirements of section 25.1459. (h) This is operational in nature, and as such is not directly dependent on the airplane configuration. (i) This is operational in nature, and as such is not directly dependent on the airplane configuration.		

			(j) The 737 model airplane's flight data recorder was designed and tested to meet all Part 25, 91, 121, and 125 requirements, and approved the requirements of section 25.1459. (k) An underwater locator beacon is attached to the DFDR. (l) This 737 model was manufactured after August 18, 1997. (l.1) This 737 model was manufactured after August 18, 1997. (l.2) This 737 model was manufactured after August 18, 1997. (m) The flight data recording system records the last 25 hours of flight parameters. It records parameters that are required by either FAR 121.344 or JAR-OPS 1. Airplane systems send digital, discrete, and analog data to the digital flight data acquisition function (DFDAF) in the airplane information management system (AIMS) cabinet. The DFDAF formats and sends the data to the digital flight data recorder (DFDR), which stores it in a crash-resistant container. (n) The 737 model airplane's flight data recorder was designed and tested to meet all Part 25, 91, 121, and 125 requirements, and approved the requirements of section 25.1459. The flight data recording system records the last 25 hours of flight parameters. It records parameters that are required by either FAR 121.344 or JAR-OPS 1. Airplane systems send digital, discrete, and analog data to the digital flight data acquisition function (DFDAF) in the airplane information management system (AIMS) cabinet. The DFDAF formats and sends the data to the digital flight data recorder (DFDR), which stores it in a crash-resistant container.		

X	121.344a	Digital flight data recorders for 10-19 seat airplanes	(a) The 737 model airplane's flight data recorder was designed and tested to meet all Part 25, 91, 121, and 125 requirements, and approved the requirements of section 25.1459.	737 MAX Configuration Specification D019A008, Rev P, ATA 31-31, 5-1-2017 737 MAX Standard Selections Catalog D924A110-6, 31-31, 8-1-2017	
X	121.345	Radio equipment.	(a) It is the operator's responsibility to ensure the airplane radio communication equipment meets the requirements of the applicable authorities. The baseline airplane includes a dual VHF communications system and space and structural provisions for a single HF antenna and dual HF couplers. A triple VHF system and single or dual HF communications system for long-range communication is optional. The installation of a BFE/SPE single SATCOM system is optional on the 737 models. This system provides flight compartment voice and data capability for long distances over water or remote regions where normal radio communication is not possible. (b) The baseline airplane includes a dual VHF communications system and space and structural provisions for a single HF antenna and dual HF couplers. A triple VHF system and single or dual HF communications system for long-range communication is optional. The installation of a BFE/SPE single SATCOM system is available via customer selection. The radio systems installed on the 737 model airplane have either separate antenna installations or share rigid antennas.	737 MAX Standard Selections Catalog D924A110-6, 23-00, 8-1-2017 737 MAX Configuration Specification D019A008, Rev P, ATA 34-53, 23-00, 5-1-2017	

			(c) An air traffic control (ATC) system with two Mode S transponders which comply with the intent of ARINC Characteristic 718 is installed. The transponders have altitude reporting capability.		
X	121.347	Radio equipment required for VFR operations in routes where navigation by pilotage is authorized.	(a) The 737 model airplane 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. The baseline airplane includes a dual VHF communications system and space and structural provisions for a single HF antenna and dual HF couplers. A triple VHF system and single or dual HF communications system for long range communication is optional. The installation of a BFE/SPE single SATCOM system is available via customer option selection. (a.1) The baseline airplane includes two ARINC 750 very high-frequency (VHF) communications systems with digital tuning, providing line-of-sight voice communication from air to ground or air to air. VHF-1 is at the captain's station and VHF-2 is at the first officer's station. Partial provisions are included to accommodate 8.33 kHz channel spacing. The baseline airplane also includes two air traffic control (ATC) Mode S (SSR) Transponders, located in the E/E Bay. (a.2) The baseline airplane includes two ARINC 750 very high-frequency (VHF) communications systems with digital tuning, providing line-of-sight voice communication from air to ground or air to air. VHF-1 is at the captain's station and VHF-2 is at the first officer's station. Partial provisions are included to accommodate 8.33 kHz channel spacing. The baseline airplane also includes two air traffic control (ATC) Mode S (SSR) Transponders, located in the E/E Bay. (a.3) The following systems are provided: • Weather radar (WXR) system	737 MAX Standard Selections Catalog D924A110-6, 23-00, 8-1-2017 737 MAX Configuration Specification D019A008, Rev P, ATA 23-00, 34-53, 34-00, 5-1-2017	

			• Traffic alert and collision avoidance system (TCAS) • Enhanced ground proximity warning system (EGPWS) (b) The necessary radio equipment is installed to receive navigational signals. The communication devices required under paragraph (a) are operative at night. (b.1) The baseline airplane includes a dual VHF communications system and space and structural provisions for a single HF antenna and dual HF couplers. A triple VHF system and single or dual HF communications system for long-range communication is optional. The installation of a BFE/SPE single SATCOM system is optional on the 737 models. This system provides flight compartment voice and data capability for long distances over water or remote regions where normal radio communication is not possible. It is the operator's responsibility to ensure the airplane radio communication equipment meets the requirements of the applicable authorities. (b.2) The following navigation systems are included: • Air data inertial reference system (ADIRS) • Air traffic control (ATC) system • Automatic direction finder (ADF) system • Distance measuring equipment (DME) system • Enhanced ground proximity warning system (EGPWS) • Flight management computing system (FMCS) • Global positioning system (GPS) • Head-up display (HUD) (structural provisions only) • Instrument landing system (ILS) • Pitot-static system • Radio altimeter (RA) system • Standby attitude and direction • Traffic alert and collision avoidance system (TCAS) • VOR/marker beacon system • Weather radar (WXR) system		

X	121.349	Navigation and Communication equipment general requirements.	(a) Radio equipment required under section 121.347(a) is active for this condition. VOR and DME systems are installed. Dual redundant ILS and marker beacon receivers are installed. (a.1) The following navigation systems are included: • Pitot-static system • Air data inertial reference system (ADIRS) • Integrated standby flight display (ISFD) • Instrument landing system (ILS) • Radio altimeter (RA) system • Head-up display (HUD) (structural provisions) • Weather radar (WXR) system • Traffic alert and collision avoidance system (TCAS) • Enhanced ground proximity warning system (EGPWS) • VOR/marker beacon system • Air traffic control (ATC) system • Distance measuring equipment (DME) system • Global positioning system (GPS) • Flight management computing system (FMCS) (a.2) The following navigation systems are included: • Pitot-static system • Air data inertial reference system (ADIRS) • Integrated standby flight display (ISFD) • Instrument landing system (ILS) • Radio altimeter (RA) system • Head-up display (HUD) (structural provisions) • Weather radar (WXR) system • Traffic alert and collision avoidance system (TCAS) • Enhanced ground proximity warning system (EGPWS) • VOR/marker beacon system	737 MAX Standard Selections Catalog D924A110-6, , 8-1-2017 737 MAX Configuration Specification D019A008, Rev P, ATA 23-00, 34-00, 34-60, 5-1-2017	

			• Air traffic control (ATC) system • Distance measuring equipment (DME) system • Global positioning system (GPS) • Flight management computing system (FMCS) (a.3) This requirement is operational in nature and as such compliance is not directly dependent on the airplane configuration. The Flight Management Computing System (FMCS) is included, and manages PBN-specific data. The FMCS functions with the DFCS to supply data to the FCCs and to the autothrottle. The FMCS has been shown to meet the requirements for RNAV operations (FAA AC 20-130A, JAA AMJ 20X2) with the proper equipment operational at departure. (b) The baseline airplane includes a dual VHF communications system and space and structural provisions for a single HF antenna and dual HF couplers. A triple VHF system and single or dual HF communications system for long-range communication is optional. The installation of a BFE/SPE single SATCOM system is available via customer selection. This system provides flight compartment voice and data capability for long distances over water or remote regions where normal radio communication is not possible. (c) The following navigation systems are included: • Pitot-static system • Air data inertial reference system (ADIRS) • Integrated standby flight display (ISFD) • Instrument landing system (ILS) • Radio altimeter (RA) system • Head-up display (HUD) (structural provisions) • Weather radar (WXR) system • Traffic alert and collision avoidance system (TCAS) • Enhanced ground proximity warning system (EGPWS) • VOR/marker beacon system • Air traffic control (ATC) system		

			• Distance measuring equipment (DME) system • Global positioning system (GPS) • Flight management computing system (FMCS) (d) The following navigation systems are included: • Pitot-static system • Air data inertial reference system (ADIRS) • Integrated standby flight display (ISFD) • Instrument landing system (ILS) • Radio altimeter (RA) system • Head-up display (HUD) (structural provisions) • Weather radar (WXR) system • Traffic alert and collision avoidance system (TCAS) • Enhanced ground proximity warning system (EGPWS) • VOR/marker beacon system • Air traffic control (ATC) system • Distance measuring equipment (DME) system • Global positioning system (GPS) • Flight management computing system (FMCS)		
X	121.351	Radio equipment for extended overwater operations and other operations.	(a) The 737 model airplane is equipped with the radio equipment necessary to comply with 121.349 and contains an independent system that complies with 121.347. It is the operator's responsibility to determine the required communication and navigation systems for appropriate use on intended routes. Boeing provides a wide array of appropriate systems to meet the customer's needs based on local regulatory agency mandates. Customer option selections may be required. (b) The 737 model airplane is equipped with the radio equipment necessary to comply with 121.349 and contains an independent system that complies with 121.347.	737 MAX Configuration Specification D019A008, Rev P, ATA 23-00, 34-00, 5-1-2017	

			It is the operator's responsibility to determine the required communication and navigation systems for appropriate use on intended routes. Boeing provides a wide array of appropriate systems to meet the customer's needs based on local regulatory agency mandates. Customer option selections may be required. (c) This requirement is operational in nature and as such compliance is not directly dependent on the 737 model airplane design.		
X	121.354	Terrain awareness and warning system.	(a) An ARINC 723 enhanced ground proximity warning system (EGPWS) that complies with FAA FAR 121.354 and TSO C151A warns the flight crew of unsafe ground clearance is included. The obstacles feature provides visual and aural alerts when the EGPWS identifies potential conflicts with man-made obstacles stored in the EGPWS look-ahead database. (b) This 737 model was manufactured after March 29, 2002. (c) Appropriate documentation is provided in the AFM.	737 MAX Configuration Specification D019A008, Rev P, ATA 34-46, 02-28, 5-1-2017 737 MAX Airplane Flight Manual; D631A002, Rev 0, 3-7-2017	
X	121.355	Equipment for operations on which specialized means of navigation are used.	(a) This is operational in nature. The ADIRU complies with the requirements of FAR 121.355 Appendix G. (b) This part provides technical clarification for compliance standards. This 737 model was not certificated prior to 1972.	737 Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017	
X	121.356	Traffic alert and collision avoidance system.	(a) An ARINC 735 TCAS Change 7.1 (ACAS II) compliant traffic alert and collision avoidance system (TCAS) informs the flight crew about collision threats with other aircraft. The TCAS also provides recommended vertical maneuvers to avoid collision. The 737 model airplane contains an ATC Mode S transponder system. (b) This 737 model is certificated to accommodate passenger configuration beyond 30 seats. (c) This 737 model is equipped with turbojet engines.	737 MAX Configuration Specification D019A008, Rev P, ATA 34-45, 5-1-2017	
X	121.357	Airborne weather radar equipment requirements.	(a) An ARINC 708A weather radar (WXR) system is included, and provides the flight crew with information about weather hazards ahead of the airplane. Visual and aural alerts are provided in the flight compartment. The WXR includes a predictive windshear system (PWS), which provides windshear detection, alerts, and guidance features. The system is certified to TSO-C63B.	737 MAX Configuration Specification D019A008, Rev P, ATA 34-43, 02-28, 5-1-2017	

			(b) No requirement (c) This is operational in nature. Boeing provides training materials and manuals to help satisfy this requirement. (d) This part provides technical clarification for compliance applicability standards. (e) This part provides technical clarification for related subparagraphs.		
X	121.358	Low altitude windshear detection system requirements.	(a) An ARINC 708A weather radar (WXR) system is included, and provides the flight crew with information about weather hazards ahead of the airplane. Visual and aural alerts are provided in the flight compartment. The WXR includes a predictive windshear system (PWS), which provides windshear detection, alerts, and guidance features. (b) This 737 model was manufactured after January 3, 1991. (c) This is operational in nature, and as such is not directly dependent on the airplane configuration. (d) This part provides technical clarification for compliance standards.	737 MAX Configuration Specification D019A008, Rev P, ATA 34-43, 5-1-2017	
X	121.359	Cockpit voice recorders.	(a) A CVR system with two-hour voice recording with data link capability is installed, upon customer selection of desired supplier. The system is designed and tested to meet all Part 25, 91, 121, and 125 requirements, and approved per the requirements of section 25.1457. The CVR records from preflight checklist to five minutes after last engine shutdown. The Cockpit Voice Recorder - Manual-On/Auto-Off Switch Installation is available for customer selection. (b) No requirements (c) The CVR system is designed and tested to meet all Part 25, 91, 121, and 125 requirements, and approved per the requirements of section 25.1457.	737 MAX Configuration Specification D019A008, Rev P, ATA 23-71, 01-33, 5-1-2017 737 Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017 737 MAX Standard Selections Catalog D924A110-6, 23-71, 23-22, 8-1-2017 737 MAX Flight Crew Operations Manual, Cockpit Voice Recorder System, Rev TBC, 4/13/2017	

			The recorder unit includes an underwater locator beacon. Signal transmission is initiated by a water-activated switch in the unit. (d) This 737 model is certificated to accommodate a passenger configuration beyond 19 seats. (e) This 737 model is certificated to accommodate a passenger configuration beyond 30 seats. (f) This part provides instructions for the operator in approved circumstances. (g) The voice recorder receives input from these sources: • Captain's headset audio mixed with the captain's hot microphone circuit audio • First officer's headset audio mixed with the first officer's hot microphone circuit audio • First observer's headset audio mixed with the first observer's hot microphone circuit audio • Area microphone Time reference by ARINC 429 GMT input. (h) This is operational in nature, and as such is not directly dependent on the airplane configuration. (i) This 737 model was first manufactured after April 7, 2010. (i.1) The CVR system complies E102with the requirements set forth in FAR part 25.1457. (i.2) A CVR system with two-hour voice recording with data link capability is installed, upon customer selection of desired supplier. (i.3) The CVR records from preflight checklist to five minutes after last engine shutdown. The Cockpit Voice Recorder - Manual-On/Auto-Off Switch Installation is available for customer selection.		

			(1.4) The CVR system complies with the requirements set forth in FAR part 25.1457. (j) A CVR system with two-hour voice recording with data link capability is installed, upon customer selection of desired supplier. (j.1) The CVR system complies with the requirements set forth in FAR part 25.1457. (j.2) A CVR system with two-hour voice recording with data link capability is installed, upon customer selection of desired supplier. (j.3) The CVR records from preflight checklist to five minutes after last engine shutdown. The Cockpit Voice Recorder - Manual-On/Auto-Off Switch Installation is available for customer option selection. (j.4) The CVR system complies with the requirements set forth in FAR part 25.1457. (k) Communication messages can be recorded in the CVR by customer option selection for data link recording.		
X		**Subpart L – Maintenance, Preventive Maintenance, and Alterations:**			
X	121.365	Maintenance, preventive maintenance, and alteration organization.	N/A - This requirement applies to manuals developed by the operator and as such compliance is not directly dependent on the 737 design.		
X	121.367	Maintenance, preventive maintenance, and alteration program.	N/A - This requirement applies to manuals developed by the operator and as such compliance is not directly dependent on the 737 design.		
X	121.369	Manual requirements.	N/A - This requirement applies to manuals developed by the operator and as such compliance is not directly dependent on the 737 design.		
X	121.373	Continuing analysis and surveillance.	N/A - This requirement is operational in nature. Compliance is not directly dependent on the 737 design.		
	121.374	Continuous airworthiness program	N/A - This requirement is operational in nature.	737 MAX ETOPS CMP; D044A032, Rev E, 10-25-2017	

		for two-engine ETOPS operation	737-600/700/800/900/900ER Configuration, Maintenance & Procedures Supplement document defines required configuration and maintenance requirements. The 737 airplane flight manual (AFM) provides ETOPS operational procedures.	737 MAX Airplane Flight Manual; D631A002, Rev 0, 3-7-2017	
X	121.375	Maintenance and preventive maintenance training program.	N/A - This requirement is operational in nature and as such compliance is not directly dependent on the airplane configuration. Boeing provides an MMEL, AFM, FCOM and other documents as well as training, training aids and data to support this requirement.	737 MAX Airplane Flight Manual; D631A002, Rev 0, 3-7-2017 737MAX Master Minimum Equipment List (MMEL), Rev 0, 3-9-2017 737 MAX Flight Crew Operations Manual, Rev TBC, 4-13-2017 737 MAX ETOPS CMP; D044A032, Rev E, 10-25-2017	
X		**Subpart T – Flight Operations:**			
	121.574	Oxygen for medical use by passengers.	Portable oxygen is provided via customer selection of portable pulse oxygen cylinders. It is the operator's responsibility to ensure the appropriate quantity of cylinders and/or oxygen is installed on the airplane to meet requirements.	737 MAX Configuration Specification D019A008, Rev P, ATA 25-60, 5-1-2017	
X	121.576	Retention of item of mass in passenger and crew compartments.	The 737 is designed to comply with the requirements in sections 25.787 and 25.789. Suitcase stowage for the flight crew is provided in multiple places on the flight deck.	737 Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017	
	121.578	Cabin ozone concentrations.	(a) This paragraph provides definitions for subsequent paragraphs. (b) The 737 has gained approval per the cabin ozone concentration requirements of section 25.832. (c) The 737 has gained approval per the cabin ozone concentration requirements of section 25.832. (d) This requirement is operational in nature and as such compliance is not directly dependent on the 737 design.	737 Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017	

			(e) This requirement is operational in nature and as such compliance is not directly dependent on the 787 design.		
X	121.581	Forward observer's seat, enroute inspections.	(a) The first observer's seat installed on the 737 flight deck is suitable for conducting enroute inspections. (b) This requirement is operational in nature and as such compliance is not directly dependent on the 737 design. (c) This requirement does not apply to the 737-8 since it was certificated after December 20, 1995.	737 MAX Configuration Specification D019A008, Rev P, ATA 25-10, 5-1-2017	
X	121.587	Closing and locking of flight crew compartment door.	(a) This requirement is operational in nature and as such compliance is not directly dependent on the 737 design. The 737 flight deck door is lockable in accordance with 121.313. (b) This requirement is operational in nature and as such compliance is not directly dependent on the 737 design. The 737 flight deck door is lockable in accordance with 121.313.	737 MAX Configuration Specification D019A008, Rev P, ATA 25-10, 5-1-2017	
	121.589	Carry on baggage.	(a) This requirement is operational in nature and as such compliance is not directly dependent on the 787 design. Passenger compartment stowage areas are designed for compliance with all applicable requirements in Parts 25, 91, 121, and 125. (b) This requirement is operational in nature and as such compliance is not directly dependent on the 787 design. Passenger compartment stowage areas are designed for compliance with all applicable requirements in Parts 25, 91, 121, and 125. (c) This requirement is operational in nature and as such compliance is not directly dependent on the 787 design. Passenger compartment stowage areas are designed for compliance with all applicable requirements in Parts 25, 91, 121, and 125. (d) This requirement is operational in nature and as such compliance is not directly dependent on the 787 design. Passenger compartment stowage areas are designed for compliance with all applicable requirements in Parts 25, 91, 121, and 125.	737 Type Certificate Data Sheet No A16WE, Rev 59, 7-27-2017 737-8 Flight Standardization Board Report	

			(e) This requirement is operational in nature and as such compliance is not directly dependent on the 787 design. Passenger compartment stowage areas are designed for compliance with all applicable requirements in Parts 25, 91, 121, and 125. (f) The 787 passenger seats are approved per the requirements in sections 25.787 and 25.789. (g) This requirement is operational in nature and as such compliance is not directly dependent on the 787 design.		