Civil Aviation Administration of China (CAAC)

Aircraft Evaluation Group (AEG)

Aircraft Evaluation Report

For

737 Series

(737-600/700/800/900/900ER/8)

Revision 2 **Date: April/14/2023**

Manufacturer: The Boeing Company

Revision Record & Approval

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0	All	Initial Evaluation for 737-900ER and Catch-up for 737-600/700/800/900	Nov. 12, 2014	WANG Jin	XUE Shi Jun	WAN Xiang Dong
1	All	The purpose of this revision is to add 737-8.	Oct. 21, 2017	LIU Yun Lei	XUE Shi Jun	HU Zhen Jiang
2	All	Incorporate MAX RTS evaluation conclusions, and add Sections 1 and 8.	Apr.xx,2023	WANG Jin	XUE Shi Jun	HAN Guang Zhu

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Foreword

The 737 series airplane was first type certificated by the Federal Aviation Administration (FAA) as a transport category airplane in December 1967, which is type designated as 737-100. The 737 family includes the following variants:

- 737-100, -200, -200C (also named as original series)
- 737-300, -400, -500 (also named as classic or CL series)
- 737-600, -700, -700C, -800, -900, -900ER (also named as 737 Next-Generation or 737NG series)
- 737-7, -8, -9 (also named as 737 MAX series)

Other 737 variants include the Boeing Business Jets (BBJ) series: BBJ1, BBJ2, and BBJ3. BBJ1 and BBJ2 are based on 737-700 and 737-800 airframe with PFD/ND and HUD displays respectively; and BBJ3 is based on 737-900ER airframe with PFD/ND and HUD displays.

The 737-900ER model airplane is a new variant modified from 737-900 model airplane with increased design weights, additional exit doors and improved field performance. The 737-900ER was type certificated by the FAA in April 2007.

The 737-8 (737 MAX 8) is a variant of 737-800 model airplane, which is the first model of 737 MAX series airplanes. The Model 737-8 areas of change relative to the 737NG model airplane include new CFM LEAP-1B engine, fly-by-wire spoilers, advanced flight deck displays/systems, aft body aerodynamic improvements, new Advanced Technology (AT) winglet, and new Boeing Sky interior.

The CAAC Aircraft Airworthiness Department has been validating the 737 series airplanes Type Certificate since November 1985. This includes validation of Model 737-300, -400, -500, -600, -700,-800, -900, and -900ER. Type Certificates. The Model 737-8 type validation is approved in October 2017.

The CAAC AEG conducted an operational evaluation of the 737-900ER model airplanes in September 2014. As the 737NG series airplanes share most of the technical documentations and have the same pilot ratings, the CAAC AEG also conducted a catch-up evaluation for the remainder of the 737NG series airplanes (737-600 thru 900) during the evaluation of the 737-900ER.

The initial version of this report was finalized based on the discussions and conclusions of the initial evaluation of the 737NG (737-600- thru 900ER) series airplanes.

The CAAC AEG conducted the operational evaluation of 737-8 model airplanes in June 2017. Revision 1 of this report has been revised to include the 737-8 model airplanes.

The CAAC AEG conducted a special operational evaluation for the 737-8 model airplanes in 2021 for safe return to service (RTS) after grounded because of two fatal accidents related to the airplane's Maneuvering Characteristics Augmentation System (MCAS). The RTS special report will be canceled automatically after all the grounded 737-8 model airplanes of Chinese operators have finished their RTS action. The Revision 2 of this report will cover all updated information included in the RTS special report.

Section 1: Operational Information Related to Aircraft Type Design

1.1 Statement and Explanation:

This section includes the operation related information for 737 Series airplane based on the following aircraft configuration documents:

- FAA Type Certificate Data Sheet (TCDS) No. A16WE, Rev 73, March 15, 2023 (or later approved revisions)
- Boeing 737 series Airplane Flight Manual: D631A001 for Model 737-600/700/-800/-900/900ER and D631A002 for Model 737-8.

Note: *As Boeing 737 series Airplane Flight Manual distributed in manner of customization, the latest revisions were referenced on the approved time of this AER revision 2.*

The information is provided as an aid to support operational approval but should not be considered as an operational approval. If operator is required to show compliance, it remains the responsibility of the Principal Inspector (PI) for operator to approve the appropriate operation.

When the aircraft configuration differs from the above stated airworthiness approval, it is the responsibility of the operator and its Principal Inspector (PI) to evaluate those differences and develop the compliance to the relevant requirements.

1.2 737NG Series (737-600/700/800/900/900ER)

(1) General Information

Item		Type Related Information	Reference
1.1	Category	Transport Category Airplane	TCDS
1.2	Dimensions	**737-600:** Span: 112 ft. 7 in (34.3 m) Length: 102 ft. 6 in (31.2 m) Height: 41 ft. 3 in (12.6 m) **737-700:** Span: 112 ft. 7 in (34.3 m) Length: 110 ft. 4 in (33.6 m) Height: 41 ft. 2 in (12.5 m) **737-800:** Span: 112 ft. 7 in (34.3 m) Length: 129 ft. 6 in (39.5 m) Height: 41 ft. 2 in (12.5 m) **737-900ER:** Span: 112 ft. 7 in (34.3 m) Length: 138 ft. 2 in (42.1 m) Height: 41 ft. 3 in (12.5 m)	WBM
1.3	Engines	2 CFM 56-7B or -7B/2 or -7B/3 or -7BE Series Turbofan Engines.	TCDS
1.4	APU	Allied Signal AS 131-9	TCDS
1.5	Propellers	N/A	
1.6	Maximum Operating Altitude	41,000 ft. pressure altitude (12, 497 m)	TCDS
1.7	Approach category	Category C or D- depending on Maximum Landing Weight at which the aircraft is operated, the approach category can be	TCDS
1.8	Maximum Certified Weights	**737-600:** Maximum Takeoff Weight (MTOW) 145,500 lbs. (65,997 KG) Maximum Landing Weight (MLW) 120,500 lbs. (54,657 KG) **737-700:** Maximum Takeoff Weight (MTOW) 154,500 lbs. (70,080 KG) Maximum Landing Weight (MLW) 129,200 lbs. (58, 604 KG) **737-800:** Maximum Takeoff Weight (MTOW) 174,200 lbs. (79,015 KG) Maximum Landing Weight (MLW) 146,300 lbs. (66,360 KG)	TCDS

Item		Type Related Information	Reference
		737-900ER: Maximum Takeoff Weight (MTOW) 187,700 lbs.(85,139 KG) Maximum Landing Weight (MLW) 157,300 lbs. (71,350 KG)	
1.9	Minimum Flight Crew	Two (Pilot and Co-pilot) for all type of flight.	TCDS
1.10.	Maximum Occupants	**737-600:** 149 maximum passenger capacity **737-700:** 149 maximum passenger capacity **737-800:** 189 maximum passenger capacity **737-900:** 189 maximum passenger capacity **737-900ER:** Three exit configurations based on the activation and classification of the Mid-Cabin Emergency Door (MED) • 189 maximum passenger capacity - two door arrangement with MED de-activated – • 215 maximum passenger capacity - three door arrangement with MED activated and rated as a Type II exit – • 220 maximum passenger capacity - three door arrangement with MED activated and rated as a Type I exit –	TCDS
1.11.	Baggage/ Cargo Compartment	**737-600:** FWD: 2858 lbs. (1295 KG) AFT: 5678 lbs. (2574 KG) **737-700:** FWD: 4424 lbs. (2006 KG) AFT: 6998 lbs. (3172 KG) **737-800:** FWD: 7846 lbs. (3558 KG) AFT: 10694 lbs. (4849 KG) **737-900:** FWD: 7995 lbs. (3625 KG) AFT: 12080 lbs. (5478 KG) **737-900ER (Line Numbers 001 – 5109):** FWD: 7995 lbs. (3625 KG) AFT: 12080 lbs. (5478 KG) **737-900ER (Line Numbers 5110 and on):** Front FWD: 7851 lbs. (3559 KG) Rear AFT: 12080 lbs. (5478 KG)	TCDS/WBM
1.12	Serial Numbers Eligibility	Not specified.	TCDS/STC/AFM

(2) Kind of Operation

Item		Information	Reference
2.1	Visual Flight Rules(VFR)	Approved as basic type design	TCDS/AFM
2.2	Instrument Flight Rules (IFR)	Approved as basic type design	TCDS/AFM
2.3	Night and over-the-top	Approved as basic type design	TCDS/AFM
2.4	Icing conditions	Approved as basic type design	TCDS/AFM
2.5	Extended Overwater Operation	The airplane has been approved for Extended Over-Water operation. A customer selection is required for life vests in the flight compartment. Life vests for passengers, attendants and/or supernumeraries are available by customer selection.	TCDS
2.6	Extended Range Operation	The type design reliability and performance of this airplane has been evaluated in accordance with FAA Advisory Circular 120-42A and found suitable for up to 180 minutes extended range operations when configured in accordance with Boeing Document D044A007 "737-600/-700/-800/-900/-900ER ETOPS Configuration, Maintenance and Procedures". This finding does not constitute approval to conduct extended range operations.	TCDS

(3) Communication, Navigation and Surveillance

Item		Information	Reference
3.1	ATC transponder	There are two ATC Mode S transponders in the E/E bay.	AFM
3.2	Data Link Communication	Data Link is available by customer selection.	AFM
3.3	Satellite Communication (SATCOM)	SATCOM is available by customer selection.	AFM
3.4	RVSM	The airplane is certified capable of RVSM operations.	TCDS/AFM
3.5	Performance Based Navigation	Performance based navigation approved for the type design as follows: - Approach: RNP AR, RNP APCH - Terminal: RNAV 1, RNAV 2, RNP 1, Baro-VNAV - En-route: RNAV 1, RNAV 2, RNAV 5 - Oceanic and Remote Area: RNP 4	TCDS/AFM

Item		Information	Reference
3.6	Low visibility operation	The airplane is certified for Category I, II operations. Category IIIa and IIIb operations are available by customer option selection.	TCDS
3.7	Weather radar	An ARINC 708A weather radar system with predictive windshear is installed	TCDS
3.8	Terrain awareness and warning system （TAWS）	An ARINC 723 enhanced ground proximity warning system (EGPWS) is installed.	TCDS
3.9	Traffic Alert and Collision Avoidance equipment	An ARINC 735 Change 7.1 compliant traffic alert and collision avoidance system (TCAS) is installed	TCDS
3.10	Low altitude windshear system equipment	An ARINC 708A weather radar system (WXR) with predictive windshear is installed.	TCDS
3.11	ADS-B	ATC Transponder provides ADS-B OUT parameters.	TCDS
3.12	HUD	HUD that supports manual approach and landing to Category IIIa is available. Option selection required	TCDS

(4) Recording Equipment

Item		Information	Reference
4.1	Flight recorder	An ARINC 717 flight recorder system (FDRS) that records and stores the last 25 hours of flight and ARINC 757 cockpit voice recording system with two hour recording and data link capability are installed.	TCDS
4.2	Quick Access Recorder	A quick access recorder is available. Option selection required	TCDS

1.3 737-8

(1) General Information

Item		Type Related Information	Reference
1.1	Category	Transport Category Airplane	TCDS
1.2	Dimensions	Span: 117 ft. 10 in (35.9 m) Length: 129 ft. 6 in (39.5m) Height: 40 ft. 4 in (12.3 m)	WBM

Item		Type Related Information	Reference
1.3	Engines	2 CFM LEAP-1B Series Turbofan Engines.	TCDS
1.4	APU	Allied Signal AS 131-9	TCDS
1.5	Propellers	N/A	
1.6	Maximum Operating Altitude	41,000 ft. pressure altitude (12, 497 m)	TCDS
1.7	Approach category	Category C or D- depending on Maximum Landing Weight at which the aircraft is operated, the approach category can be	TCDS
1.8	Maximum Certified Weights	Maximum Takeoff Weight (MTOW) 181,200 lbs. Maximum Landing Weight (MLW) 152,800 lbs.	TCDS
1.9	Minimum Flight Crew	Two (Pilot and Co-pilot) for all type of flight.	TCDS
1.10.	Maximum Occupants	189 maximum passenger capacity	TCDS
1.11.	Baggage/ Cargo Compartment	FWD: 7672 lbs. (3479 KG) AFT: 10694 lbs. (4849 KG)	WBM
1.12	Serial Numbers Eligibility	Not specified.	

(2) Kind of Operation

Item		Information	Reference
2.1	Visual Flight Rules(VFR)	Approved as basic type design	TCDS/AFM
2.2	Instrument Flight Rules (IFR)	Approved as basic type design	TCDS/AFM
2.3	Night and over-the-top	Approved as basic type design	TCDS/AFM
2.4	Icing conditions	Approved as basic type design	TCDS/AFM
2.5	Extended Overwater Operation	The airplane has been approved for Extended Over-Water operation. A customer selection is required for life vests in the flight compartment. Life vests for passengers, attendants and/or supernumeraries are available by customer selection.	TCDS
2.6	Extended Range Operation	The type design reliability and performance of the 737-8 and 737-9 airplanes have been evaluated in accordance with the requirements of 14 CFR §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	TCDS

Item		Information	Reference
		MAX ETOPS Configuration, Maintenance, and Procedures.”	

(3) Communication, Navigation and Surveillance

Item		Information	Reference
3.1	ATC transponder	There are two ATC Mode S transponders in the E/E bay.	TCDS
3.2	Data Link Communication	The FAA has approved the data link system and applications to the criteria contained in AC 20-140. This approval was based on the safety and interoperability requirements contained in the FAA approved Boeing Documents listed below: D926A106 “737 Air Traffic Services Systems Requirements and Objectives” for Generation 3, U13 and later versions.	TCDS
3.3	Satellite Communication (SATCOM)	SATCOM is available by customer selection.	TCDS
3.4	RVSM	The airplane is certified capable of RVSM operations.	TCDS/AFM
3.5	Performance Based Navigation	The demonstrated RNP capabilities are predicated upon the assumptions, definitions, requirements, and analysis in FAA approved Boeing Document D6-39067-3, "RNP Capability of FMC Equipped 737, Generation 3", Revision New or later FAA approved version.	TCDS/AFM
3.6	Low visibility operation	The airplane is certified for Category I, II operations. Category IIIa and IIIb operations are available by customer option selection.	TCDS
3.7	Weather radar	An ARINC 708A weather radar system with predictive windshear is installed	TCDS
3.8	Terrain awareness and warning system （TAWS）	An ARINC 723 enhanced ground proximity warning system (EGPWS) is installed.	TCDS
3.9	Traffic Alert and Collision Avoidance equipment	An ARINC 735 Change 7.1 compliant traffic alert and collision avoidance system (TCAS) is installed.	TCDS
3.10	Low altitude windshear system equipment	An ARINC 708A weather radar system (WXR) with predictive windshear is installed.	TCDS

Item		Information	Reference
3.11	ADS-B	ATC Transponder provides ADS-B OUT parameters.	TCDS
3.12	HUD	HUD that supports manual approach and landing to Category IIIa is available. Option selection required	TCDS

(4) Recording Equipment

Item		Information	Reference
4.1	Flight recorder	An ARINC 717 flight recorder system (FDRS) that records and stores the last 25 hours of flight and ARINC 757 cockpit voice recording system with two hour recording and data link capability are installed.	TCDS
4.2	Quick Access Recorder	A quick access recorder is available. Option selection required	TCDS

Section 2: Pilot Type Rating and Qualification Specification

2.1 Statement and Explanation

This section is the formal notification that the CAAC AEG has conducted Pilot Qualification Specification (PQS) evaluation for Boeing 737NG series and 737-8 model airplanes based on the Flight Standardization Board (FSB) Report published by the FAA, which specifies the pilot type rating, training, checking, and currency specifications for flight crews.

Thus, the provisions in this section can be used, as the basis, by Chinese operators to develop their pilot qualification and training program for above airplanes.

Alternate means of compliance to the requirements of CCAR 61, 91, 121, other than specified in the provisions of this section, must be approved by Flight Standards Department of the CAAC.

If alternate compliance is sought, operators will be required to establish the proposed alternate means and submit the following to the CAAC: an equivalent level of safety to the provisions of this section, analysis, demonstrations, proof of concept testing, differences in documentation, or other supporting evidence as required.

Find FAA FSB Report here:
https://drs.faa.gov/browse/FSB_REPORTS/doctypeDetails

2.2 Pilot Type Rating and License Endorsement

Upon the FSB evaluation, the Pilot Type Rating for 737NG series and 737-8 model airplane is listed as follows:

Manufacturer	Aircraft Type	Pilot Type Rating
The Boeing Company	737-600	B-737
	737-700 (including BBJ 1)	
	737-800 (including BBJ 2)	
	737-900	
	737-900ER (including BBJ 3)	
	737-8	

License endorsement:

"B-737" is designation for getting a type rating for 737-600, -700, -800, -900, -900ER or 737-8, and checking records should also be shown for the specific model/variant.

2.3 GDR（ODR）and MDR

General Difference Requirements（GDR）or Operator Differences Requirements (ODR) and Master Differences Requirements (MDR) tables for 737-600, -700, -800, -900, -900ER and 737-8 model airplanes have been given as follows:

- 737-600 to 737-900ER Operator Differences Requirements Table, and vice versa
- 737-700 to 737-900ER Operator Differences Requirements Table, and vice versa
- 737-800 to 737-900ER Operator Differences Requirements Table, and vice versa
- 737-900 to 737-900ER Operator Differences Requirements Table, and vice versa
- 737-800 to 737-8 General Differences Requirements Table, and vice versa

Note: *The GDR tables for 737-800 to 737-8 are included in Boeing document No. D611A253 - 737NG and 737 MAX Pilot Qualification Specification (PQS) Rev. B and later revisions. The PQS is available by request to Boeing.*

MDR Table

		FROM AIRPLANE					
		737-600	737-700	737-800	737-900	737-900ER	737-8
TO AIRPLANE	737-600	-- 1*2*3*4*	A/A 1*2*3*4*	A/A 1*2*3*4*	A/A 1*2*3*4*	A/A 1*2*3*4*	B/B
	737-700	A/A 1*2*3*4*	-- 1*2*3*4*	A/A 1*2*3*4*	A/A 1*2*3*4*	A/A 1*2*3*4*	B/B
	737-800	A/A 1*2*3*4*	A/A 1*2*3*4*	-- 1*2*3*4*	A/A 1*2*3*4*	A/A 1*2*3*4*	B/B
	737-900	A/A 1*2*3*4*	A/A 1*2*3*4*	A/A 1*2*3*4*	-- 1*2*3*4*	A/A 1*2*3*4*	B/B
	737-900ER	A/A 1*2*3*4*	A/A 1*2*3*4*	A/A 1*2*3*4*	A/A 1*2*3*4*	-- 1*2*3*4*	B/B
	737-8	B/B 5*	B/B 5*	B/B 5*	B/B 5*	B/B 5*	-- 5*

Note:

1: Differences from EFIS to PFD/ND is C/B.*

2: Differences from PFD/ND to EFIS is D/C.*

3: EDFCS (Enhanced Digital Flight Control System) Fail Operational Autoland requires additional training, checking, and currency as C/C.*

4: As for there are some critical NNC improvement involved for 737NG airplanes due to the RTS actions for 737-8 model airplanes, even pilots for 737NG not flying 737-8, update training for the NNC improvement also required by next recurrent training.*

5: When pilots are initially training for 737MAX through difference training, the difference level is considered D/B.*

2.4 Specification for Training

The following is a Type Rating Training proposed by Boeing for 737NG series and 737-8 model airplanes and it has to be considered as a baseline by operators in developing their pilot training program.

- 737NG and 737 MAX Pilot Qualification Specification (Boeing Document No. D611A253, Rev. B or later revisions)

***Note 1:** For differences training from 737 Classic to 737NG series airplanes, operator may use programs consistent with programs previously approved or refer to Boeing proposed differences training course.*

***Note 2:** For differences training from 737NG to 737-8 airplanes, a Computer Based Training (CBT) course has been developed by Boeing that may directly be used by operators.*

***Note 3:** For installed EFBs, refer to Section 7.3 for the EFB training specifications.*

Note 4: *The PQS is available by request to Boeing.*

For type training for 737NG or 737-8 model airplanes, the training areas of special emphasis are addressed in PQS.

When HUD is used, Boeing 737 HUD Training Manual should be considered as a baseline, and the following requirements should be addressed in operators training program:

- The program focuses principally upon training events flown in the left seat by the pilot-in-command (PIC). Nevertheless, first officer indoctrination and training is also essential.
- Recurrent training programs must address appropriate recurrent training for both HUD and non-HUD operations.

For operators wishing credit for low visibility operations on use of the HUD, the following low visibility operations should be performed in addition to regular requirements:

- Instrument Approaches in initial flight training:

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

- Takeoff in initial flight training

  a) Normal takeoff, clear and calm, repeated with gusty winds
  b) Takeoff, 600 foot RVR, 5 knot crosswind
  c) Takeoff, 300 foot RVR, 5 knot crosswind, engine failure prior to V1
  d) Takeoff, 300 foot RVR, 5 knot crosswind, engine failure after V1
  e) Takeoff with HGS failure, 300 foot RVR

- The following low visibility operations should be performed during the six-month recurrent training, and selected ground training subjects should be reviewed annually:

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

For operators adopting the Runway Situational Awareness Tools (RSAT) or Roll Command Alerting System (RCAS) option, a Computer Based Training (CBT) course has been developed by Boeing and may be directly used by operators.

For operators adopting an Alternate Go-Around Flaps (Flaps 30 approaches using Flaps 5 during go-around), the following ground and flight training are required:

- Ground Training may be administered via Computer Based Training (CBT), stand-up lectures or video; and should include:

    a) Performance requirements;
    b) Speed additive use and effect on maneuver margins;
    c) Alternate Go-Around procedures and callouts; and
    d) Engine failure procedures.

- Flight Training should include:

    a) A two-engine flaps 30 approach to a flaps 5 go-around;
    b) A two-engine flaps 30 approach to an engine failure during a flaps 5 go-around;
    c) A two-engine flaps 30 approach in icing conditions to an engine failure during a flaps 5 go-around

Note: *Operators are encouraged to develop an approach review and briefing card for use by flight crews when conducting any Alternate Go-Around Flaps operation.*

2.5 Specification for Checking

As required by CCAR Part 61 and 121.

When operating more than one variant, checking may be accomplished in any 737NG series or 737-8 airplane.

The following areas of emphasis should be addressed during checks as necessary:

- Proficiency with manual and automatic flight in normal and non-normal situations must be demonstrated.
- Proper outside visual scans without prolonged fixation on cockpit displays or controls should be consistently demonstrated.
- On EFIS and CDS aircraft (EADI/EHSI displays), proper setup, selection, and use of those displays should be demonstrated.
- Proper accomplishment of procedures not commonly found on other transport aircraft, such as the need to retract flaps following engine failure during approach is required.
- Proper speed management and control application during rotation and flare to preclude tail strikes on some series is required.
- Aircraft and operators approved for ETOPS, HUD, RNP, RVSM, EGPWS, or other specialized

operations, proper application of the appropriate corresponding procedures is required.

- Occasionally fly LOFT missions using MEL relief, such as no AP, FMC failure, compacted DU, etc.
- "No Flap/No Slat" Approach. "No Flap/No Slat" approaches are not required for 737 series if flap non-normal procedures are addressed.

When HUD use is approved, checking must include suitable demonstration of HUD use for authorized modes and phases of flight.

- Checking standards for HUD are equivalent to those for non-HUD operations except for Category III. For Category III, performance equivalent to or better than that demonstrated for manual Category III HUD operations in the original equipment STC should be shown by each PIC.
- PC maneuvers, LOFT, LOS, or other demonstrations may be completed using HUD at the check airman/inspector discretion. However, periodic assessment of non HUD skills should be demonstrated, and at any time a check airman/inspector may, at their discretion, request that authorized maneuvers be performed without use of HUD (e.g., if manual CAT I F/D operations are authorized, the airman being checked may be requested to perform the maneuver without HUD).

2.6 Specification for Currency

As required by CCAR Part 61 and 121.

When operating more than one variant, recency of experience may be accomplished in any 737NG series or 737-8 airplane.

Note: *For pilots who keep currency on only one variant (737NG or 737 MAX) for more than 12 months, at least one takeoff and landing on another variant should be exercised by full flight simulator or flying with a PIC to keep currency on the other variant.*

2.7 Specification for Flight Simulation Training Devices

As qualified per CCAR Part 60.

As there are only "A" level differences between any 737NG variants, any 737NG simulator can be used for training or checking.

In addition, since there are only "B" level differences between 737NG and 737-8, recurrent training and checking is approved in any 737NG or 737 MAX series simulator training device.

Note: *When initial training and checking for 737MAX qualification, either by transition or difference training, 737MAX full flight simulator training device is required.*

If an operator conducts automatic landings in a 737NG series or 737-8 airplane, the training must be conducted in a simulator or airplane equipped with the appropriate autoland autopilot systems.

For HUD or EFB training, an appropriate training device equipped with HUD or EFB is required.

Section 3: Maintenance Personnel Qualification Specification

3.1 Statement and Explanation

This section is the formal notification that the CAAC AEG has conducted Maintenance Training Evaluation (MTE) for 737NG series and 737-8 airplanes based on the support provided by Boeing.

Thus, the provisions in this section can be used, as the basis, by Chinese operators to develop their maintenance personnel qualification and training program for the above stated model airplanes.

Alternate means of compliance other than specified in the provisions of this section must be approved by Flight Standards Department of the CAAC.

3.2 Maintenance License Endorsement

Upon the Maintenance Training Evaluation (MTE), the maintenance license endorsement for Boeing 737NG series and 737-8 airplanes is listed as follows:

Manufacturer	Aircraft Type/Model	License Endorsement
The Boeing Company	737-600	737 NG
	737-700 (including BBJ 1)	
	737-800 (including BBJ 2)	
	737-900	
	737-900ER (including BBJ 3)	
	737-8	737 MAX

3.3 Specification for Training

The following is a Type Training course proposed by Boeing for 737NG series and 737-8 model airplanes and it has to be considered as a baseline by operators and training provider in developing their maintenance type training program

14101-737 Master Minimum Maintenance Type Training Syllabus 737**.**

Note 1: Boeing is revising above syllabus document *to comply with the latest CAAC policy (CAAC AC-66-008, AC-66-FS-009 R1, and AC-147-FS-004 R3).* The next revision will be: Title: 737 Maintenance Training Specification, Boeing Document No: 14101-737, Revision I. *The document of 737NG and 737MAX Maintenance Training Specification，AMTS/CAMAC 006—2022 (Issue.1/August 18th, 2022), could be used by training organizations as a substitution specification document until Boeing's new revision is published. The above specification document could be requested from CAMAC (Civil Aviation Maintenance Association of China). The Maintenance Type Training Syllabus for 737 also includes differences training from 737NG to 737 MAX.*

Note 2: *In the case where the individual has only taken a course on a single derivative (e.g., 737-600) or multiple derivatives (e.g., 737-800/900), the license endorsement would be the same. However, work or authorization for certifying maintenance release would be restricted to only the models to which the individual has been trained.*

Note 3: *For the differences course between each derivative in 737NG series airplanes, it is the operator's responsibility to compare the detail differences based on their actual configurations. The differences training may be conducted by the operator or its contracted maintenance organization.*

Note 4: *The above training courses are available by request to Boeing.*

Section 4: Master Minimum Equipment List

4.1 Statement and Explanation

This section is the formal notification that the CAAC AEG has conducted the Master Minimum Equipment List (MMEL) evaluation for Boeing 737NG series and 737-8 airplanes based on the Master Minimum Equipment List (MMEL) published by the Federal Aviation Administration (FAA), which outlines the items of equipment that may be inoperative and yet maintain an acceptable level of safety by appropriate conditions and limitations.

Thus, the MMEL and its future revisions published by the FAA can be used, as the basis, by Chinese operators to develop their Minimum Equipment List (MEL) for 737NG series or 737-8 model airplanes.

Find FAA MMEL here:

https://drs.faa.gov/browse/MMEL/doctypeDetails

737 series airplanes MMEL is also published by Boeing on MyBoeingFleet website.

Note 1: *For 737NG series airplane, in the FAA approved 737 MMEL, items applicable to the 737-900 are also applicable to the 737-900ER. However, there are some MMEL items that are specifically identified for the 737-900ER. Operators need to be careful when developing their company MEL while referencing the FAA MMEL. The CAAC AEG recommends that operators clearly identify their company MEL items with -900ER for all 737-900ER applicable items.*

Note 2: *The 737-8 has a standalone MMEL and uses different ATA numbering system from the 737NG MMEL. The CAAC AEG recommends that operators develop separate MEL for 737NG and 737-8 model airplanes.*

4.2 CAAC Supplemental

Not applicable.

Section 5: Scheduled Maintenance Requirements

5.1 Statement and Explanation

This section is the formal notification that the CAAC AEG has conducted Scheduled Maintenance Requirements (SMR) evaluation for Boeing 737NG series and 737-8 airplanes based on the Maintenance Review Board Report (MRBR) approved by the Federal Aviation Administration (FAA). The MRBR outlines the initial minimum maintenance requirements to be used in the development of an approved operator's maintenance program for the airframe, engines, systems and components.

Thus, the MRBR and its future revisions approved by the FAA can be used, as the basis, by Chinese operators to develop their maintenance program for the above stated model airplanes.

Note: *The 737-8 has a standalone MRBR document; but, operators may combine their 737NG and 737-8 maintenance program on condition that the applicability of each task is clearly identified.*

FAA MRBR distribution:

Available on MyBoeingFleet website.

5.2 CAAC Supplemental

Not applicable.

Section 6: Operational and Continued Airworthiness Instructions

6.1 Statement and Explanation:

This section is the formal notification that the CAAC AEG has conducted evaluation of the operational and continued airworthiness instructions for Boeing 737NG series and 737-8 airplanes based on the relevant Boeing policies and procedures.

Thus, the Operational & Continued Airworthiness Instructions (OCAI) document listed in the attachment was found acceptable by the CAAC AEG. It will give the necessary guidance for properly operating and maintaining the above stated model airplanes within the approved operating conditions and limitations.

This acceptance may not assure the accuracy and applicability of the content in each document. It is the aircraft owner or operator responsibility to report any defect or discrepancy in the documents to the aircraft manufacturer or the CAAC AEG through our website: http://aeg.caac.gov.cn/

Operational & Continued Airworthiness Instructions distribution:

Operational & Continued Airworthiness Instructions documents are available on MyBoeingFleet website. The engine manufacturer distributes engine manuals directly to operators.

6.2 List of Operational and Continued Airworthiness Instructions for 737NG series airplanes

Manual	Reference No.	Description	Revision/Date
FCOM/QRH	D6-27370	Flight Crew Operations Manual (FCOM)/Quick Reference Handbook (QRH)	As revised
FAM	D6-27370-6/7/8/900 -FAM-TBC	Flight Attendant Manual	As revised
WBM	D043A5XX (e.g., X=9 for 737-900)	Weight and Balance Manual (W&B)	As revised
DDG	D6-32545-TBC	Dispatch Deviations Guide	As revised
AMM	D633A101	Airplane Maintenance Manual	As revised
WDM	D280AXXX	Wiring Diagram Manual	As revised
IPC	D638A001	Illustrated Parts Catalog	As revised
FIM	D633A103	Fault Isolation Manual	As revised
MPD	D626A001	Maintenance Planning Data Document	As revised
TC	D633A109	Task Card (for data not in AMM)	As revised

***Note 1**: The acceptance of the above manuals is not affected by changes to document reference numbers due to customization.*

***Note 2:** The following documents were approved by type certification process for 737 series airplanes and must be followed by Chinese operators for operation and maintenance within the approved limitations:*

- *AFM: Airplane Flight Manual (D631A001)*
- *AFM Appendixes:*
  - *CDL : Configuration Deviation List (D6-8730-CDL)*
  - *Landing Gear Extended (D631A001-11)*
- *Airworthiness Limitations Section (ALS/ALI) and or Certification Maintenance Requirements (CMR) (D626A001-MPD Section 9)*
- *Structural Repair Manual (D634AXXX)*
- *ETOPS Configuration, Maintenance, and Procedures (CMP) (D044A007)*

***Note 3:** Some non-type-specific airplane manuals (e.g., Standard Wiring Practices Manual, Non Destructive Testing Manual, Damage Tolerance Rating Check Form, etc.) may also need to be referenced by the operator. Please check MyBoeingFleet website for more information.*

***Note 4:** Supplier Component Maintenance Manual (CMM) may reference Boeing OHM/CMM Index (Doc. No. D6-47081) and can be found on MyBoeingFleet website.*

***Note 5:** FAA approved emergency evacuation procedure is not included in the FAM. When operators develop their own procedures, Section 7.4 of this document could be referenced for more information.*

***Note 6:** Boeing provides the above manuals, Service Bulletins, Service Letters and other documents in electronic form with e-Notification on MyBoeingFleet website. Refer to MyBoeingFleet for more information.*

6.3 List of Operational and Continued Airworthiness Instructions for 737-8 airplane

Manual	Reference No.	Description	Revision/Date
FCOM/QRH	D6-27370-MAX	Flight Crew Operations Manual (FCOM)/Quick Reference Handbook (QRH)	As revised
FAM	D6-27370-MAX8-FAM	Flight Attendant Manual	As revised
WBM	D636A080	Weight and Balance Manual	As revised
DDG	D639A001-01	Dispatch Deviations Guide	As revised
AMM	D633AM101	Airplane Maintenance Manual	As revised
SDS	D633AM102	System Description Section	As revised
WDM	D280AMXXXX	Wiring Diagram Manual	As revised
IPC	D638A001	Illustrated Parts Catalog	As revised
IFIM	D633AM103	Interactive Fault Isolation Manual	As revised
MPD	D626A011	Maintenance Planning Data Document	As revised
TC	D633AM109	Task Card (for data not in AMM)	As revised

***Note 1**: The acceptance of the above manuals is not affected by changes to document reference numbers due to customization.*

***Note 2:** The following documents were approved by type certification process for 737-8 airplanes, and must be followed by Chinese operators for operation and maintenance within approved limitations:*

- *AFM: Airplane Flight Manual (*D631A002*)*
- *AFM Appendixes:*
  - *CDL: Configuration Deviation List (D631A002-CDL))*
  - *Landing Gear Extended (D631A002-LGE)*
  - *Performance Data Operation of LEAP-1B Thrust Rating (D631A002-L1B)*
  - *Flight Altitude Limitations for Ozone Exposure (D631A002-OZONE)*
- *Airworthiness Limitations (AWL), Certification Maintenance Requirements (CMR), and/or Special Compliance Items (SCI) (D626A011-9-01, D626A011-9-03, and D626A011-9-04)*
- *Structural Repair Manual (D634A238)*
- *ETOPS Configuration, Maintenance, and Procedures (CMP) (D044A032)*

***Note 3:** Some non-type-specific airplane manuals (e.g., Standard Wiring Practices Manual, Non-Destructive Testing Manual, Damage Tolerance Rating Check Form, etc.) may also need to be referenced by the operator. Please check MyBoeingFleet website for more information.*

***Note 4:** Supplier Component Maintenance Manual (CMM) may reference Boeing OHM/CMM Index (Doc. No. D6-47081) and can be found on MyBoeingFleet website.*

***Note 5:** FAA-approved emergency evacuation procedure is not included in the FAM. When operators develop their own procedures, Section 7.4 of this document could be referenced for more information.*

***Note 6:** Boeing provides the above manuals, Service Bulletins, Service Letter, and other documents in electronic form with e-Notification on MyBoeingFleet website. Refer to MyBoeingFleet for more information.*

Section 7: Other Evaluation Items

7.1 Forward Observer Seat

The first observer seat is identical for the 737NG series and 737-8 airplanes. The CAAC AEG considers the seat is suitable for use in conducting en route inspections as already approved.

Modifications to the above facilities from the original specifications will need approval by the responsible Principal Inspector (PI) of the CAAC and requires submittal of the following to the CAAC: additional analysis, demonstrations, proof of concept testing, differences documentation, or other supporting evidence as required.

7.2 Flight Crew Sleeping Quarters

Not applicable.

7.3 Electronic Flight Bag

Boeing Installed Electronic Flight Bag (EFB) is an optional configuration on Boeing 737NG series and 737-8 airplanes.

This paragraph is the formal statement that the CAAC AEG has validated the Operational Suitability Report (OSR) for Boeing Installed Electronic Flight Bag (EFB) issued by the FAA, which gives the operation procedure, data revision process, pilot training, checking, and currency specifications for operating applicable Boeing Airplane using the EFB.

The specific operational approval for an operator to use an EFB is still required.

Find FAA OSR Report here:

https://drs.faa.gov/search

7.4 Emergency Evacuation Demonstration for 737-900ER and 737-8 airplanes

The 737 Series airplane full capacity emergency evacuation demonstration has been conducted in 737-300/400 airplanes up to 188 passengers.

When the 737-900ER was type certificated, the Mid-Cabin Exit Door (MED) System Level Evacuation Test and MED System Level Slide Deployment Test were conducted. The 737-900ER emergency evacuation compliance was substantiated by a combination of testing and analysis.

As concluded by reference to the FAA determination, the CAAC AEG considers the 737-900ER has been shown to be in compliance with full capacity emergency evacuation demonstration for passenger limitation of 189 for deactivated Mid-Cabin Exit Door, and 220 for activated Mid-Cabin Exit Door (Type I, limited to 215 if with Type II) during the type certification process.

When the 737-8 was type certificated, as nothing new or novel with the 737-8 interior that adversely affects evacuation capability, compliance was substantiated by similarity analysis to the 737-800.

As concluded by reference to the FAA determination, CAAC AEG considers 737-8 has been shown to be in compliance with the full capacity emergency evacuation demonstration for passenger limitation of 189 during the type certification process.

Note: *The Boeing Flight Attendant Manual (FAM) for 737NG or 737 MAX series airplanes provides evacuation system component description and evacuation guidelines. Boeing offers a supplemental document "737NG and 737 MAX Emergency Evacuation General Procedures" to further assist operators in developing their own evacuation procedures. Contact Boeing if you need to obtain a copy of the document.*

Section 8: OEM Product Support Information

8.1 Flight Training

Boeing offers an array of integrated and standalone pilot services throughout a global network of campuses on six continents, including Type Rating, Qualification & Recurrent Training, Pilot Development Programs, Line Operations, and Web-Managed Training.

In addition, Jeppesen, a Boeing company, offers general and business aviation and specialty training materials.

Boeing provides flight training at its training campuses across the globe, including Miami, Gatwick, Singapore, Shanghai, and other locations.

8.2 Maintenance Training

Boeing offers the most comprehensive and flexible maintenance training programs around the world. The training programs are designed with Boeing expertise and can be tailored to an airline's exact specifications. Maximum airplane knowledge transfer to technicians can be delivered at any suitable location worldwide or offered on a per-seat basis throughout Boeing's global network of training campuses.

Boeing provides maintenance training with instructor teams based in Seattle, Miami, Gatwick, and Singapore.

8.3 Technical Publication

Boeing provides customers with Maintenance and Flight Operations documents necessary to safely operate and maintain their aircraft. Most documents are available on MyBoeingFleet website.

8.5 Maintenance Support

The Boeing Company has established a Maintenance Repair Organization (MRO) in China that is a CAAC, EU and FAA Approved Repair Station. This MRO is in collaboration with the Shanghai Airport Authority and China Eastern Airlines.

This MRO is located at:

BOEING SHANGHAI AVIATION SERVICES COMPANY LIMITED
118 FEI AO ROAD
PUDONG INTERNATIONAL AIRPORT
SHANGHAI, 201207
CH
86 21 2021 5000

Appendix: CAAC AEG Team and Point of Contact

A1: CAAC AEG Final Evaluation Team for 737-900ER

XUE Shi Jun	Director, Aircraft Evaluation Division, Flight Standards Department
WANG Jin	Director, AEG Office, Civil Aviation Safety and Technology Center

A2: CAAC AEG Final Evaluation Team for 737-8

XUE Shi Jun	Director, Aircraft Evaluation Division, Flight Standards Department
LIU Yun Lei	Engineer, AEG Office, Civil Aviation Safety and Technology Center
WEI Da	Pilot, AEG Office, Shanghai Aircraft Airworthiness Certification Center

A3: CAAC AEG Evaluation Team for 737-8 RTS and AER Rev.2

XUE Shi Jun	Deputy Director General, Flight Standards Department
WANG Jin	Aircraft Evaluation Division, Flight Standards Department
ZHU Heng Yu	FSB Pilot, Aircraft Evaluation Center, Civil Aviation Safety & Technology Center of CAAC

B1&B2: Boeing Point of Contact

Yohannes Amare	Program Manager, System Safety & Regulatory Affairs, BCA

B3: Boeing Point of Contact

Yohannes Amare	Program Manager, Global Safety & Regulatory Affairs, BCA
HAO Yiming	Deputy Director, Global Safety & Regulatory Affairs, China