



EASA update to TRAN Committee

Brussels, March 18 2019

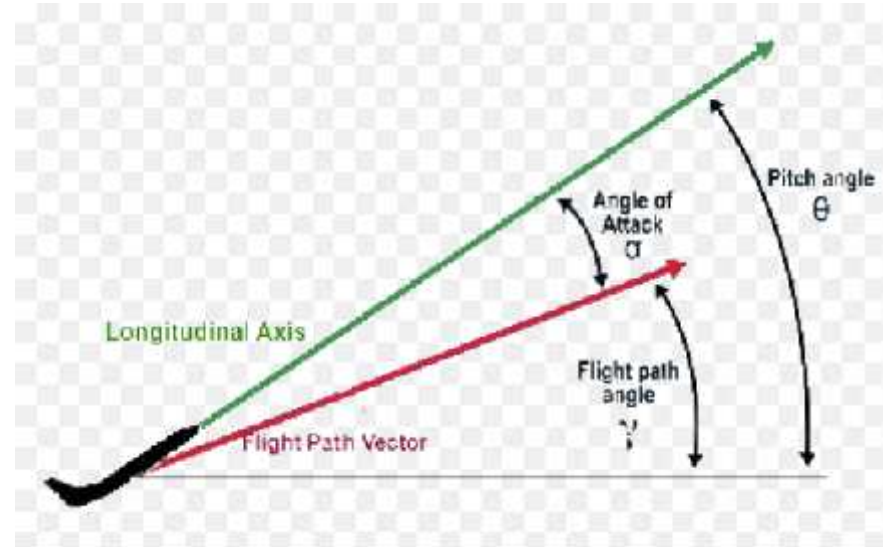
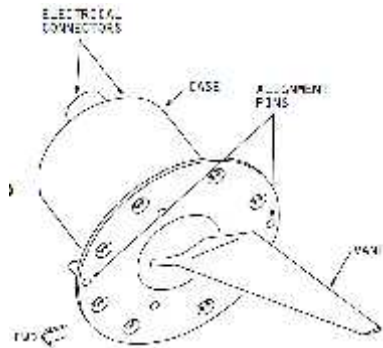
Your safety is our mission.

An Agency of the European Union 

Areas of involvement in the EU-US BASA

- Areas where a regulatory difference exist (non-harmonized requirements),
- Novel or unusual features (e.g. new technologies),
- Unprecedented methods of compliance and non-straightforwardly compliant design features,
- Sensitive issues usually associated with an accident or incident on a product with similar design features

Angle of Attack Sensors



MCAS

Boeing 737 Max Maneuvering Characteristics Augmentation System

Activates automatically when:

- Angle of attack is high
- Autopilot is off
- Flaps are up
- Steeply turning

MCAS pushes the jet's nose down to reduce the risk of stalling




 THE AIR CURRENT

 EASA

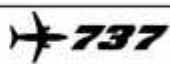
Actions following the Lion Air crash (1/3)

Boeing

- On 6 November 2018, issued Flight Crew Operation Manual Bulletin (OMB) Number TBC-19 with subject ‘Un-commanded Nose Down Stabilizer Trim Due to Erroneous Angle of Attack (AOA)’


Flight Crew Operations Manual Bulletin
for
The Boeing Company

The Boeing Company
Seattle, Washington 98124-2207



Number: TBC-19
Issue Date: November 6, 2018

Airplane Effectivity: 737-8 / -9

Subject: Uncommanded Nose Down Stabilizer Trim Due to Erroneous Angle of Attack (AOA) During Manual Flight Only

Reason: To Emphasize the Procedures Provided in the Runway Stabilizer Non-Normal Checklist (NNC).

Information in this bulletin is recommended by The Boeing Company, but may not be EASA approved at the time of writing. In the event of conflict with the EASA approved Airplane Flight Manual (AFM), the AFM shall supersede. The Boeing Company regards the information or procedures described herein as having a direct or indirect bearing on the safe operation of this model airplane.

THE FOLLOWING PROCEDURE AND/OR INFORMATION IS EFFECTIVE UPON RECEIPT

Background Information

The Indonesian National Transportation Safety Committee has indicated that Lion Air flight 610 experienced erroneous AOA data. Boeing would like to call attention to an AOA failure condition that can occur **during manual flight only**. This bulletin directs flight crews to existing procedures to address this condition. In the event of erroneous AOA data, the pitch trim system can trim the stabilizer nose down in increments lasting up to 10 seconds. The nose down stabilizer trim movement can be stopped and reversed with the use of the electric stabilizer trim switches but may restart 5 seconds after the electric stabilizer trim switches are released. Repetitive cycles of uncommanded nose down stabilizer continue to occur unless the stabilizer trim system is deactivated through use of both STAB TRIM CUTOUT switches in accordance with the existing procedures in the Runway Stabilizer NNC. It is possible for the stabilizer to reach the nose down limit unless the system inputs are counteracted completely by pilot trim inputs and both STAB TRIM CUTOUT switches are moved to CUTOUT.

Flight Crew Operations Manual Bulletin No. TBC-19, Dated November 6, 2018 (continued)

Additionally, pilots are reminded that an erroneous AOA can cause some or all of the following indications and effects:

- Continuous or intermittent stick shaker on the affected side only.
- Minimum speed bar (red and black) on the affected side only.
- Increasing nose-down control forces.
- Inability to engage autopilot.
- Automatic disengagement of autopilot.
- IAS DISAGREE alert.
- ALT DISAGREE alert.
- AOA DISAGREE alert (if the AOA indicator option is installed).
- FEEL DIFF PRESS light.

Operating Instructions

In the event an uncommanded nose down stabilizer trim is experienced on the 737-8 /-9, in conjunction with one or more of the above indications or effects, do the Runway Stabilizer NNC, ensuring that the STAB TRIM CUTOUT switches are set to CUTOUT and stay in the CUTOUT position for the remainder of the flight.

Note: Initially, higher control forces may be needed to overcome any stabilizer nose down trim already applied. Electric stabilizer trim can be used to neutralize control column pitch forces before moving the STAB TRIM CUTOUT switches to CUTOUT. Manual stabilizer trim can be used after the STAB TRIM CUTOUT switches are moved to CUTOUT.

Administrative Information

Insert this bulletin behind the Bulletin Record page in Volume 1 of your Flight Crew Operations Manual (FCOM). Amend the FCOM Bulletin Record page to show bulletin TBC-19 "In Effect" (IE).

This Bulletin remains in effect until Boeing provides additional information on system updates that may allow this Bulletin to be canceled.

Please send all correspondence regarding Flight Crew Operations Manual Bulletin status, to the 737 Manager, Flight Technical Data, through the Service Requests Application (SR App) on the MyBoeingFleet home page.



Actions following Lion Air crash (2/3)

FAA

- FAA Emergency AD 2018-23-51 dated Nov 7th adopted by EASA on Nov 8th, effective on Nov 7th, applicable to both MAX models 737-8 and 737-9 requiring update of the Aircraft Flight Manual.



FAA
Aviation Safety

EMERGENCY
AIRWORTHINESS
DIRECTIVE

www.faa.gov/aircraft/safety/alerts/

DATE: November 7, 2018
AD #: 2018-23-51

Emergency Airworthiness Directive (AD) 2018-23-51 is sent to owners and operators of The Boeing Company Model 737-8 and -9 airplanes.

Background

This emergency AD was prompted by analysis performed by the manufacturer showing that if an erroneously high single angle of attack (AOA) sensor input is received by the flight control system, there is a potential for repeated nose-down trim commands of the horizontal stabilizer. This condition, if not addressed, could cause the flight crew to have difficulty controlling the airplane, and lead to excessive nose-down attitude, significant altitude loss, and possible impact with terrain.

Actions following Lion Air crash (3/3)

- On Feb 07th 2019 Boeing and the FAA presented two Major design changes to be validated by EASA covering enhancement of the MCAS and activation of the AOA disagree annunciation even when the AOA display option is not embodied on aircraft.
- On March 07th, The OSD FCD application corresponding to the difference training related to the design change was received by EASA.

ET 302 accident (10 March 2019)

1. Second hull loss in 5 months, total of 600 000 flight hours
2. No EASA participation in the Accident investigation
3. Trajectory comparison between ET302 and LA610
4. Unability to train flight crews in operational conditions

12 March 2019: Emergency AD and SD

EASA AD No.: 2019-0051-E



Emergency Airworthiness Directive

AD No.: 2019-0051-E
Issued: 12 March 2019

Note: This Emergency Airworthiness Directive (EAD) is issued by EASA in accordance with Regulation (EU) 2018/1139 on behalf of the European Union, its Member States and of the European third countries that participate in the activities of EASA, under Article 139 of that Regulation.

This AD is issued in accordance with Regulation (EU) 748/2002, Part 21.A.35. In accordance with Regulation (EU) 2018/1139, Annex 3, Part M.A.302, the modification of the conditions of airworthiness is only applicable to ADs. Consequently, suspension of flight operations does not apply as an AD applies, except for the cases in which the suspension of the AD is not applicable as specified by the Agency (Regulation (EU) 748/2002, Annex 3, Part M.A.308) or agreed with the Authority of the State of Registry (Regulation (EU) 2018/1139, Article 71, exemption).

Design Approval Holder's Name: THE BOEING COMPANY
Type/Model designation(s): 737-8 and 737-9 aeroplanes

Effective Date: 12 March 2019, 19:00 UTC
TCDS Number(s): EASA.IM.A.120
Foreign ADs: None
Supersedeure: Not applicable

ATA – SUSPENSION OF FLIGHT OPERATIONS

EASA SD No.: 2019-01



Safety Directive

SD No.: 2019-01
Issued: 12 March 2019

Note: This corrective action to an airworthiness problem is issued by the Agency in accordance with Art. 70 (1) of Regulation (EU) 2018/1139. It is mandatory for organisations for which EASA is the Competent Authority, including third country organisations holding an EASA certificate.

Subject: Boeing 787-8 MAX and 787-9 MAX – Suspension of Flight Operations

Effective Date: 12 March 2019, 19:00 UTC
Supersedeure: Not applicable



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