

## Continued Airworthiness Notification to the International Community

**To:** Civil Aviation Authorities

Date: March 11, 2019

**From:** Federal Aviation Administration  
Aircraft Certification Service  
System Oversight Division, AIR-800  
2200 South 216th Street  
Des Moines, WA 98198

**Subject:** This message provides information regarding FAA continued operational safety activity related to the Boeing 737-8 and Boeing 737-9 (737 MAX) fleet.

**Situation description:** Following the accident of an Ethiopian Airlines Boeing Model 737-8 airplane on March 10, 2019, the National Transportation Safety Board (NTSB) as the accredited representative, and the FAA as Technical Advisors, are supporting the Ethiopian Accident Investigation Bureau. The FAA has dispatched personnel to support the investigative authorities in determining the circumstances of this event. All data will be closely examined during this investigation, and the FAA will take appropriate action if the data indicates the need to do so.

External reports are drawing similarities between this accident and the Lion Air Flight 610 accident on October 29, 2018. However, this investigation has just begun and to date we have not been provided data to draw any conclusions or take any actions.

Following the Lion Air Flight 610 accident, the FAA has completed these activities in support of continued operational safety of the fleet:

- Issued FAA emergency Airworthiness Directive (AD) 2018-23-51 on November 7, 2018
- Validated that airplane maintenance and functional check instructions on Angle of Attack (AOA) vane replacement were adequate
- Conducted simulator sessions to verify the Operational Procedures called out in FAA AD 2018-23-51
- Validated AOA vane bench check calibration procedures were adequate
- Reviewed Boeing's production processes related to the AOA vane and Maneuvering Characteristics Augmentation System (MCAS)

Ongoing oversight activities by the FAA include:

- Boeing's completion of the flight control system enhancements, which provide reduced reliance on procedures associated with required pilot memory items. The FAA anticipates mandating these design changes by AD no later than April 2019.
- Design changes include:
  - MCAS Activation Enhancements
  - MCAS AOA Signal Enhancements
  - MCAS Maximum Command Limit
- Boeing's plans to update training requirements and flight crew manuals to go with the MCAS design change include:
  - Airplane Flight Manual (AFM) and Flight Crew Operations Manual (FCOM)

- Quick Reference Handbook (QRH) - notes in Speed Trim Fail checklist
- Airplane Maintenance Manual (AMM)
- Interactive Fault Isolation Manual (iFIM)
- Boeing has proposed Level A training impacts

**Aircraft/engine make, model, and series:** The Boeing Company Model 737-8 and 737-9 airplanes (737 MAX)

**U.S.-registered fleet:** 74 airplanes; Worldwide fleet: 387 airplanes

**Operators:** 59 operators worldwide: 9 Air, Aerolineas Argentinas, Aeromexico, Air Canada, Air China, Air Fiji, AIR ITALY S.P.A., American Airlines, Arkefly, Britannia Airways AB, Cayman Airways, China Eastern Airlines, China Southern Airlines, Comair, COPA Airlines, Corendon Airlines, Eastar Jet, Enter Air Sp. Z O.O., Ethiopian Airlines, Fertitta Enterprises, Inc., flydubai, Fuzhou Airlines Co., Ltd, Garuda Indonesia, Gol Linhas Aereas S.A., Hainan Airlines, Icelandair, Jet Airways, Jet Aviation Business Jets, JSC Aircompany SCAT, Kunming Airlines, Lion Air, Globus Airlines, LOT Polish Airlines, Lucky Air, Mauritania Airlines, Mongolian Airlines MIAT, Norwegian Air International Lt, Norwegian Air Norway, Norwegian Air Shuttle AS, Norwegian Air Sweden, Okay Airways Company Limited, Oman Air, Qatar Airways, Royal Air Maroc, Shandong Airlines, Shanghai Airlines, Shenzhen Airlines, SilkAir, Smartwings, Southwest Airlines, SpiceJet, Sunwing Airlines Inc., Thai Lion, TUI Airlines Belgium, TUI Airways, Turkish Airlines (THY), United Airlines, WestJet, Xiamen Airlines

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