Continued Airworthiness Notification to the International Community

To: Civil Aviation Authorities Date: July 1, 2019

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

Subject: This message is to advise you of the FAA's ongoing activities related to an investigation of angle of attack (AOA) sensors on The Boeing Company Model MD-90, 717, 727, 737CL (Classic Series -300, -400, and -500), 757, and 767 airplanes.

Situation description: In 2010, Boeing reported potential safety issues regarding the AOA sensors on Boeing Model 717 airplanes and associated reports of nuisance stick shaker activation. The root cause was determined to be external moisture/water intrusion into the AOA sensors; the water froze and immobilized the AOA sensors. This rendered the AOA sensor unreliable (resulting in nuisance stick shaker activation) in certain atmospheric and operational conditions. In all reported cases, the flight crew was able to descend the airplane, and the stick shaker ceased when the temperature increased above 0°C and the ice melted.

From its review of the safety issue, the FAA determined an AD was not necessary for the Boeing Model 717 because it has a low-speed protection system that is independent of the AOA sensor and mitigates the unsafe condition. However, the FAA issued Airworthiness Directive (AD) 2016-25-26 on Boeing Model MD-90 airplanes, effective February 2, 2017, with a 6-year compliance time to require installation of an external flange heater on the outside of the AOA sensor vane assembly.

An investigation on Boeing Model 727, 737CL, 757, and 767 airplanes revealed similar AOA sensor issues. The FAA is considering issuance of a Notice of Proposed Rulemaking (NPRM) for Boeing Model 727, 757, and 767 airplanes to mitigate the unsafe condition. The proposed corrective action for all three models is to inspect and replace affected AOA sensors with sensors having a new design.

The proposed corrective action for Boeing Model 737CL airplanes does not involve a sensor replacement. It involves installation of external case heaters outside of the AOA sensor, similar to that on Boeing Model MD-90 airplanes. The FAA is awaiting service information from Boeing for this design change. Upon receipt of the service information, the FAA may also consider issuance of rulemaking for Boeing Model 737CL airplanes.

The affected AOA sensors are not installed on Boeing Model 737MAX and 737NG airplanes, and therefore did not play a role in the recent 737MAX accidents. In addition, there are no known unsafe conditions associated with the replacement AOA sensor. However, the 737MAX accident investigations are ongoing. If new information related to the AOA sensors from the investigations becomes available, the FAA will take further action at that time.

Aircraft/engine make, model, and series: The Boeing Company Model MD-90, 717, 727, 737CL, 757, and 767 series airplanes

For the NPRM in consideration for Boeing Model 727, 757, and 767 airplanes: U.S.-registered fleet: 1,287 airplanes; **Worldwide fleet:** 2,250 airplanes

Operators: Most major airlines worldwide operate Boeing Model 727, 757, and 767 airplanes.

FAA contact: Jeffrey E. Duven, Director, System Oversight Division
Telephone and Fax: (206) 231-3200