Continued Airworthiness Notification to the International Community

To: Civil Aviation Authorities **Date:** April 9, 2020

From: Federal Aviation Administration
Aircraft Certification Service
Compliance & Airworthiness Division, AIR-700

Subject: This message is to advise you of the FAA's ongoing activities related to the potential of misleading flight director (FD) guidance when signal interference occurs during instrument landing system (ILS) approach on The Boeing Company (Boeing) Model 747-400, 747-8, 757, 767, 777, and 787 airplanes.

Situation description: Boeing has informed the FAA of unexpected pitch guidance when capturing or tracking the glideslope during instrument landing system (ILS) approach. Glideslope beam anomalies occurring in a discrete glideslope capture window can result in reversion to inertial paths in which the auto flight vertical guidance diverges from the glideslope beam at higher-than-expected descent rates. There are other scenarios that can also result in inertial coasting above and below the beam. Misleading FD guidance can be displayed after the autopilot (A/P) is disconnected following a Pitch Mode Fail annunciation due to glideslope beam anomalies. Service history indicates flight crews might follow the misleading FD guidance after disconnecting the A/P without referencing other available information and flight deck indications, which could potentially result in CFIT (controlled flight into terrain) or a late touchdown and runway excursion.

Aircraft/engine make, model, and series: Boeing Model 747-400, 747-8, 757, 767, 777, and 787 airplanes.

U.S.-registered fleet: 1,119 airplanes; Worldwide fleet: 4,282 airplanes

Ongoing activities: Boeing released Flight Crew Operations Manual Bulletin S489-50, dated October 18, 2019, for Model 747-400, 747-8, 757, 767, 777, and 787 airplanes to inform operators of this issue. The bulletin provides operating instructions should this condition be encountered. The bulletin describes the autopilot flight director system (AFDS) operation during periods of glideslope signal degradation or signal instability, and the possible flight deck effects during such an event. The FAA is in the process of issuing an SAIB (Special Airworthiness Information Bulletin) to inform the aviation community about this issue. The FAA is working closely with Boeing to develop operational program software to correct the misleading flight director guidance due to glideslope beam anomalies during ILS approach. The FAA is considering issuing an airworthiness directive to mandate this software update. The international aviation authorities are recommended to coordinate with airport authorities to make sure the ILS equipment is properly maintained and functions as designed. Also, the FAA recommends that airport authorities follow the guidance of FAA Order JO 7110.65X, Section 3-7-5, not to authorize parking any vehicles or aircraft operations in or over the sensitive and critical areas around the localizer critical area.

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**Note: This information is for the use of civil aviation authorities only and should not be released to the public at this time.