FAA
Aviation Safety

SPECIAL AIRWORTHINESS INFORMATION BULLETIN

SAIB: AIR-21-12
SUBJ: Thrust Reversers **Date:** August 3, 2021

This is information only. Recommendations aren't mandatory.

Introduction

This Special Airworthiness Information Bulletin advises owners and operators of **The Boeing Company Model 737-600, -700, -700C, -800, -900, -900ER series (737 NG) airplanes,** that thrust reversers on which the integrity test required by airworthiness directive (AD) 2019-18-03 is done may not deploy due to being in a state with residual load, when commanded the first time after the test is done.

At this time, the airworthiness concern is not an unsafe condition that would warrant AD action under Title 14 of the Code of Federal Regulations (14 CFR) part 39 (AD 2019-18-03 will not be superseded to address this single issue).

Background

The FAA published Airworthiness Directive (AD) 2019-18-03, Amendment 39-19730 (84 FR 49005, September 18, 2019), which requires revising the existing maintenance or inspection program to remove text that allows the size of the thrust reverser upper locking actuator lock sensor target to be changed, and, for certain airplanes, performing repetitive integrity tests of the thrust reverser upper locking actuator. That AD was issued to address the potential for an undetected unlocked condition of the thrust reverser upper locking actuator locking mechanism in flight, which could significantly increase the likelihood of an in-flight deployment of the thrust reverser and consequent loss of airplane control. After completion of this integrity test, it is possible that the thrust reverser could be in a state with residual load and that it may not deploy when commanded the first time after the integrity test is done. This bulletin contains an additional, recommended step for avoiding this state with residual load.

The FAA has received reports indicating that, in some cases, after maintenance personnel performed these tests, the thrust reverser failed to deploy on the first commanded deployment (e.g., on the first flight after this test has been performed, when attempting to deploy the thrust reversers, one or both thrust reversers might fail to deploy). Performing the integrity tests can introduce a pre-load in a component of the thrust reverser (locking pin of the synchronization lock), and if the residual value of the torque is high enough, the synchronization lock will fail to unlock resulting in failure of the thrust reverser to deploy when commanded. Since the very action of attempting to deploy the thrust reverser results in releasing the wind-up torque, the second time when one attempts to deploy the thrust reverser, it will deploy. In other words, if the thrust reverser fails to deploy the first time after performing this integrity test, the failure will only occur the one time.

Recommendations

The FAA recommends that all owners and operators of the affected airplanes deploy and retract the thrust reverser(s), as specified in Boeing 737-600/700/800/900 Aircraft Maintenance Manual, Section 78-31-00, Task titled "Thrust Reverser System-Adjustment/Test." We recommend doing the actions after performing each integrity test required by AD 2019-18-03, and prior to release of the

aircraft from maintenance for normal operation. Including this additional step will result in release of this residual torque after this integrity test is performed, preventing it from potentially interfering with deployment of the thrust reverser the next time it is commanded to deploy.

For Further Information Contact

Rajendran Mohanraj, Aerospace Engineer, Propulsion Section, FAA, Seattle ACO Branch, 2200 South 216th Street, Des Moines, WA 98198, at phone and fax: (206) 231-3621; e-mail: rajendran.mohanraj@faa.gov.

For Related Service Information Contact

Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminster Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; https://www.myboeingfleet.com.