

Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the proposed rule. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report summarizing each FAA-public contact concerned with the substance of this proposal will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this action must submit a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket Number 2002-NM-128-AD." The postcard will be date stamped and returned to the commenter.

Availability of NPRMs

Any person may obtain a copy of this NPRM by submitting a request to the FAA, Transport Airplane Directorate, ANM-114, Attention: Rules Docket No. 2002-NM-128-AD, 1601 Lind Avenue, SW., Renton, Washington 98055-4056.

Discussion

On April 26, 2000, the FAA issued AD 2000-09-03, amendment 39-11711 (65 FR 25829, May 4, 2000), to supersede AD 2000-02-33, amendment 39-11551 (65 FR 5742). AD 2000-09-03 is applicable to certain Boeing Model 747-400 series airplanes, and requires repetitive tests of the cone brake of the central drive unit (CDU) of the thrust reversers, and corrective actions if necessary. That action was prompted by a report indicating that completion of a cone brake test required by AD 2000-02-33 was ineffective for certain airplanes. The requirements of that AD 2000-09-03 are intended to ensure the integrity of the fail-safe features of the thrust reverser system by preventing possible failure modes in the thrust reverser control system that can result in inadvertent deployment of a thrust reverser during flight.

Actions Since Issuance of Previous Rule

In the preamble to AD 2000-02-33, the FAA specified that the actions required by that AD were considered "interim action" and that the manufacturer was developing a modification to positively address the unsafe condition. We indicated that we might consider further rulemaking action once the modification was developed, approved, and available. The manufacturer now has developed such a modification, and we have determined that further rulemaking action is indeed

necessary; this proposed AD follows from that determination.

While the service information for installation of the modification has been available for some time, we have prioritized the issuance of ADs for corrective actions for the thrust reverser system on Boeing airplane models. Based on service experience, analyses, and flight simulator studies, it was determined that an in-flight deployment of a thrust reverser has more effect on controllability of twin-engine airplane models than of Model 747 series airplanes, which have four engines. For this reason, the highest priority was given to rulemaking that required corrective actions for the twin-engine airplane models. ADs that correct the same type of unsafe condition as would be addressed by this proposed AD have been issued previously for specific airplanes within the Boeing Model 737, 757, and 767 series.

After the issuance of the service information related to the modification, we received a report from the airplane manufacturer indicating that there have been several incidents of failure of a connection shaft for the thrust reverser actuation system (TRAS) brake, which is installed as part of the modification. Such failure of the connection shaft would result in the TRAS lock being ineffective.

Based on data on the connection shaft failures that have been collected by the airplane manufacturer to date, we have determined that we can best ensure the continued safety of the affected fleet of airplanes by proceeding with rulemaking at this time to propose to require installation of a TRAS lock on the thrust reversers on Model 747-400 series airplanes. The airplane manufacturer is continuing to investigate the failures of the connection shaft. If the investigation reveals that corrective actions are necessary to prevent failure of the connection shaft, we may consider further rulemaking to mandate such corrective actions.

Explanation of Relevant Service Information

We have reviewed and approved Boeing Service Bulletin 747-78-2151, Revision 1, dated August 21, 1997, as revised by Notice of Status Change (NSC) 747-78-2151 NSC 04, dated November 26, 1997, and NSC 747-78-2151 NSC 05, dated December 18, 1997; and Boeing Service Bulletin 747-78-2151, Revision 2, dated January 13, 2000. Those service bulletins describe procedures for completing the installation of and activating a TRAS lock on each thrust reverser. These procedures include replacing a certain

microswitch pack with a new one; adding new wires; routing certain new wire bundles; changing certain wiring, circuit breakers, and components; installing thrust-reverser relay panels; and performing repetitive functional tests to ensure that the thrust reverser actuation system operates properly. In addition, those service bulletins refer to several other service bulletins that describe actions that must be accomplished prior to or concurrently with Boeing Service Bulletin 747-78-2151. These service bulletins, which describe various modifications and installations associated with the TRAS locks, are as follows:

- Lockheed Martin Service Bulletin 78-1007, Revision 1, dated March 18, 1997, which describes procedures for installation of a bracket and fastening hardware for the TRAS lock on each thrust reverser.

- Boeing Service Bulletin 747-78-2132, Revision 2, dated December 11, 1997, which describes procedures for installing wiring provisions for the TRAS lock in various areas of the airplane.

- Lockheed Martin Service Bulletin 78-1020, Revision 2, dated March 20, 1997, which describes procedures for installing the TRAS lock (also called an electromechanical lock or brake) and a flexible drive cable on each thrust reverser.

- Boeing Service Bulletin 747-31-2242, dated April 18, 1996, which describes procedures for installing new integrated display system software in six integrated display units and three electronic flight information/engine indication and crew alerting system (EICAS) interface units.

- Boeing Service Bulletin 747-45-2016, Revision 1, dated May 2, 1996, which describes procedures for replacing two central maintenance computers (CMCs) with new, improved CMCs, and installing new software for the CMCs.

Accomplishment of the actions specified in these service bulletins is intended to adequately address the identified unsafe condition.

We also have reviewed and approved Boeing Alert Service Bulletin 747-78A2166, Revision 2, dated March 15, 2001. (AD 2000-09-03 refers to Boeing Service Bulletin 747-78A2166, Revision 1, dated October 9, 1997, as an appropriate source of service information for the functional test of the CDU cone brake and corrective actions on certain airplanes.) Among other things, Revision 2 of the service bulletin includes revised procedures for the functional test of the CDU cone brake that are appropriate for airplanes on