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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39 [59 FR 509 NO. 3 01/05/94]

Docket No. 93-CE-46-AD; Amendment 39-8787; AD 94-01-05

Airworthiness Directives: Allied Signal Aerospace Company, Air Transport Avionics (formerly Bendix/King Air Transport Avionics Division) Traffic Alert and Collision Avoidance System II Processors

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment adopts a new airworthiness directive (AD) that applies to certain Allied Signal Aerospace Company, Air Transport Avionics (Allied Signal) Traffic Alert and Collision Avoidance System (TCAS) II processors that are installed on aircraft. This action requires replacing the existing TCAS II processor with a new processor that incorporates updated computer logic. The development of candidate enhancements to TCAS II logic that improves its utility and increases its overall operational acceptance prompted the proposed action. The actions specified by this AD are intended to prevent collisions or near misses caused by incompatibility between the TCAS II processors and the current air traffic control system.

DATES: Effective February 4, 1994.

ADDRESSES: Information that relates to this AD may be examined at the Federal Aviation Administration (FAA), Central Region, Office of the Assistant Chief Counsel, Room 1558, 601 E. 12th Street, Kansas City, Missouri 64106.

FOR FURTHER INFORMATION CONTACT: Mr. A. E. Clark, Manager, Systems and Equipment Branch, FAA, Atlanta Aircraft Certification Office, 1669 Phoenix Parkway, Suite 210C, Atlanta, Georgia 30349; telephone (404) 991-3020; facsimile (404) 991-3606.

SUPPLEMENTARY INFORMATION: A proposal to amend part 39 of the Federal Aviation Regulations to include an AD that applies to certain Allied Signal TCAS II processors that are installed on aircraft was published in the **Federal Register** on September 9, 1993 (58 FR 47405). The action proposed to require (1) removing from service all processors that do not have computer logic "Change 6.04A" incorporated; and (2) mandatory incorporation of "Change 6.04A" into the TCAS II computer system.

The affected TCAS II processors are not designed for a specific aircraft type. These Allied Signal TCAS II processors are installed on, but not limited to the following airplanes:

- o Aerospatiale ATR-42
- o Airbus Industries A-340
- o Beech Model 65-A90 airplanes;
- o Boeing 727-100, 727-200, 737-200, 737-300, 737-400, 737-500, 747-100, 747-200, 747-300, 747-400, 747SP, 757-200, 767-200, and 767-300 Series airplanes;
- o de Havilland DHC-7 series and Model DHC-8-100 airplanes;
- o Fokker Models F.28 Mark 1000 and Mark 4000 airplanes;
- o General Dynamics Models Convair 340 and 440 airplanes;
- o Gulfstream Models G-159 and G-IV airplanes;
- o Lockheed L1011 series airplanes;
- o McDonnell Douglas DC-8-60, DC-9-31, DC-9-51, DC-10-10, DC-10-30, DC-13-30F, MD-11, and MD-80 series airplanes; and
- o Rockwell International NA-265-65 airplanes.

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the comments received from 33 different owners, operators, manufacturers, and organizations.

All commenters express their concern of the FAA's compliance date of December 30, 1993, especially since Allied Signal's service bulletin will not be available until early 1994. The following summarizes the compliance times that the commenters recommended:

- o 18 recommended one year or less;
- o 5 recommended longer than one year; and
- o 10 recommended an extension without a proposed time.

The National Air Traffic Controllers Association and the Airline Pilots Association both recommend an "aggressive implementation" of "Change 6.04A". The FAA has re-evaluated the December 30, 1993, compliance time and has determined that the compliance time should be changed to December 31, 1994. In addition, "Change 6.04A" has been upgraded to "Change 6.04A Enhanced", which eliminates unnecessary non-crossing resolution advisories (RA's) included in "Change 6.04A". Allied Signal has assured the FAA that (1) the upgrade to "Change 6.04A Enhanced" is minor and will be incorporated in the logic change for the TCAS II processor upgrades; and (2) this compliance time correlates with their schedule for disseminating service information and kits necessary to accomplish the incorporation of "Change 6.04A Enhanced". The proposed AD has been changed to reflect the compliance time change and logic change described above.

In addition, Allied Signal states that "Change 6.04", which is FAA-certified and is currently in service, accomplishes the major intent of "Change 6.04A Enhanced" and should be considered as an acceptable interim version to allow the eventual upgrade to "Change 6.04A Enhanced". The FAA recognizes that "Change 6.04" incorporates several of the features of "Change 6.04A Enhanced". However, the FAA has determined that (1) "Change 6.04" does not provide an equivalent level of safety to that of "Change 6.04A Enhanced"; and (2) "Change 6.04A Enhanced" should be incorporated as a way to prevent collisions or near misses caused by incompatibility between the TCAS II processors and the current air traffic control system. Compliance time extension consideration will be given on a case-by-case basis to airlines or operators experiencing compliance difficulties that arise because of fleet size. The proposed AD remains unchanged as a result of this comment.

Allied Signal also lists several additional aircraft that these TCAS II processor units are certified for installation. The FAA has incorporated these into the proposed AD.

One commenter, who supports the implementation of "Change 6.04A Enhanced", requests that the FAA issue a supplementary notice of proposed rulemaking (NPRM) to propose installing this revised software by June 30, 1995. This commenter states that significant differences exist between "Change 6.04A" and "Change 6.04A Enhanced". The FAA does not concur. Comments received in response to the proposed AD reflect unanimous support for implementing "Change 6.04A Enhanced". The FAA considers the logic change (which reduces non-crossing RA's) to be minor. The intent is to correct the unsafe condition by installing modified TCAS II computer units that incorporate updated logic. The FAA has determined that the requirement to implement Version 6.04A software, including the latest enhancement, will (1) correct the unsafe condition; (2) maintain the same intent originally proposed without altering the substance of the proposed rule; and (3) impose no additional burden on the public than was previously proposed.

In addition, issuing a supplemental NPRM would necessitate (under the provisions of the Administrative Procedures Act) reissuing the notice, reopening the public comment period, considering any additional comments received, and eventually issuing a final rule. The time required for these procedures could take as long as four additional months. In light of this, and in consideration of the amount of time that has already elapsed since issuance of the original NPRM, the FAA concludes that soliciting further public comment is not necessary and that further delay of the final rule action is not appropriate.

Several commenters request that the FAA revise the economic impact specified in the proposed AD to reflect costs associated with the development, testing prior to certification, and certification of the modified processor. These costs would be absorbed by suppliers, installers, and airline operators. The FAA does not concur that the economic impact statement include this information. The 1 workhour necessary to accomplish the proposed action was provided to the FAA by the TCAS II processor manufacturer based on the best data available to date. This number represents the time required to install the revised software. The cost analysis in AD rulemaking actions typically does not include costs associated with development, testing prior to certification, and certification of a modified processor. The proposed action remains unchanged as a result of these comments.

After careful review of all available information including the comments noted above, the FAA has determined that air safety and the public interest require the adoption of the rule as proposed

except for the change in compliance time, the logic reference change, the incorporation of known aircraft that these TCAS II processor units are installed on, and minor editorial corrections. The FAA has determined that these changes and corrections will not change the meaning of the AD nor add any additional burden upon the public than was already proposed.

The FAA estimates that 3,000 TCAS II processors in the U.S. registry will be affected by this AD, that it will take approximately 1 workhour per processor to accomplish the required action, and that the average labor rate is approximately \$55 an hour. Based on these figures, the total cost impact of this AD on U.S. operators is estimated to be \$165,000. These figures are based on the assumption that none of the operators of the airplanes equipped with the affected TCAS II processors have accomplished the actions specified in this AD.

The regulations adopted herein will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 12612, it is determined that this final rule does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

For the reasons discussed above, I certify that this action (1) is not a "significant regulatory action" under Executive Order 12866; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and (3) will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A copy of the final evaluation prepared for this action is contained in the Rules Docket. A copy of it may be obtained by contacting the Rules Docket at the location provided under the caption "ADDRESSES".

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Safety.

Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends 14 CFR part 39 of the Federal Aviation Regulations as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. App. 1354(a), 1421 and 1423; 49 U.S.C. 106(g); and 14 CFR 11.89.

Section 39.13 - [AMENDED]

2. Section 39.13 is amended by adding the following new AD:

AIRWORTHINESS DIRECTIVE



Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Federal Aviation Regulations, Part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

94-01-05 ALLIED SIGNAL AEROSPACE COMPANY, AIR TRANSPORT AVIONICS (formerly Bendix/King Air Transport Avionics Division): Amendment 39-8787. Docket No. 93-CE-46-AD.

Applicability: Traffic Alert and Collision Avoidance System II processors that are installed on, but not limited to the following airplanes (all serial numbers), certificated in any category:

Aerospatiale ATR-42

Airbus Industries A-340

Beech Model 65-A90 airplanes;

Boeing 727-100, 727-200, 737-200, 737-300, 737-400, 737-500, 747-100, 747-200, 747-300, 747-400, 747SP, 757-200, 767-200, and 767-300 Series airplanes;

de Havilland DHC-7 series and Model DHC-8-100 airplanes;

Fokker Models F.28 Mark 1000 and Mark 4000 airplanes;

General Dynamics Models Convair 340 and 440 airplanes;

Gulfstream Models G-159 and G-IV airplanes;

Lockheed L1011 series airplanes;

McDonnell Douglas DC-8-60, DC-9-31, DC-9-51, DC-10-10, DC-10-30, DC-13-30F, MD-11, and MD-80 series airplanes; and

Rockwell International NA-265-65 airplanes.

Compliance: Prior to December 31, 1994, unless already accomplished.

To prevent collisions or near misses caused by incompatibility between the traffic alert

and collision avoidance system (TCAS) II processors and the current air traffic control system, accomplish the following:

(a) Remove any TCAS II processor with a part number (P/N) suffix listed in the "Existing P/N Suffix" column of the table below, and install a corresponding TCAS II processor with a P/N listed in the "New P/N Suffix" column of the table below:

Existing P/N Suffix	New P/N Suffix
-0102 or -0107	-0108
-0203 or -0207	-0208
-0301, -0302, or -0307	-0308
-0402, -0405, or -0407	-0408
-0504 or -0507	-0508
-0606 or -0607	-0608
-8101	-0108

(b) Special flight permits may be issued in accordance with FAR 21.197 and 21.199 to operate the airplane to a location where the requirements of this AD can be accomplished.

(c) An alternative method of compliance or adjustment of the compliance times that provides an equivalent level of safety may be approved by the Manager, Atlanta Aircraft Certification Office, 1669 Phoenix Parkway, Suite 210C, Atlanta, Georgia 30349. The request shall be forwarded through an appropriate FAA Maintenance Inspector, who may add comments and then send it to the Manager, Atlanta Aircraft Certification Office (ACO).

NOTE: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Atlanta ACO.

(d) Information that relates to the proposed AD may be examined at the FAA, Central Region, Office of the Assistant Chief Counsel, Room 1558, 601 E. 12th Street, Kansas City, Missouri 64106.

(e) This amendment becomes effective on February 4, 1994.