

Airworthiness Directive

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39 [60 FR 36986 NO. 138 7/19/95]

Docket No. 94-NM-114-AD; Amendment 39-9298; AD **95-14-06**

Airworthiness Directives; McDonnell Douglas Model DC-10 Series Airplanes and Model KC-10A (Military) Airplanes

PDF Copy (If Available):

▼ Preamble Information

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment adopts a new airworthiness directive (AD), applicable to certain McDonnell Douglas Model DC-10 series airplanes and Model KC-10A (military) airplanes, that requires various modifications of the flight controls, hydraulic power systems, and landing gear. This amendment is prompted by a recommendation by the Systems Review Task Force (SRTF) for accomplishment of certain modifications that will enhance the controllability of these airplanes in the unlikely event of catastrophic damage to all hydraulics systems. The actions specified by this AD are intended to ensure airplane survivability in the event of damage to fully powered flight control systems.

DATES: Effective August 18, 1995.

ADDRESSES: The service information referenced in this AD may be obtained from McDonnell Douglas Corporation, 3855 Lakewood Boulevard, Long Beach, California 90846, Attention: Technical Publications Business Administration, Department C1-L51 (2-60). This information may be examined at the Federal Aviation Administration (FAA), Transport Airplane Directorate, Rules Docket, 1601 Lind Avenue, SW., Renton, Washington; or at the FAA, Los Angeles Aircraft Certification Office, Transport Airplane Directorate, 3960 Paramount Boulevard,

Lakewood, California; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Mauricio J. Kuttler, Aerospace Engineer, Systems and Equipment Branch, ANM-130L, FAA, Transport Airplane Directorate, Los Angeles Aircraft Certification Office, 3960 Paramount Boulevard, Lakewood, California 90712; telephone (310) 627-5355; fax (310) 627-5210.

SUPPLEMENTARY INFORMATION: A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an airworthiness directive (AD) that is applicable to certain McDonnell Douglas Model DC-10 series airplanes and Model KC-10A (military) airplanes was published in the Federal Register on January 4, 1995 (60 FR 389). That action proposed to require various modifications of the flight controls, hydraulic power systems, and landing gear.

Discussion of Comments Received

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the comments received.

One commenter supports the proposed rule.

McDonnell Douglas and the Air Transport Association (ATA) of America, on behalf of its members, request an extension of the comment period from March 1, 1995, to March 31, 1995, for the purpose of convening to assess the impact of the recommendation of the Systems Review Task Force (SRTF) for this AD action. The ATA states that some carriers have already incorporated the recommendations of the SRTF to varying degrees. Based on that experience, the carriers question the implementation of those recommendations in the exact manner contemplated originally by the SRTF. Specifically, one commenter states that it does not believe current history requires the accomplishment of all the service bulletins cited in the proposed rule.

The FAA does not concur with the commenters' request to extend the comment period. The FAA has accepted and considered all comments received to date concerning this AD action, including those received after the comment period closed on March 1, 1995. The FAA does not consider that delaying this AD action further is warranted, since the actions required by this AD must be accomplished in a timely manner to ensure airplane survivability in the event of damage to fully powered flight control systems. Furthermore, ATA members were represented at meetings of the SRTF to discuss the 12 systems enhancements contained in the specific service bulletins addressed in this AD. At that time, ATA members present at the meeting agreed with the recommendation for issuance of an AD to require the accomplishment of those systems enhancements.

Two commenters express a concern that sufficient parts may not be available to accomplish the requirements of the proposed AD; therefore, operators may not be able to

meet the proposed 24-month compliance time. The FAA infers that the commenters request an extension of the proposed compliance time. The FAA does not concur. In developing an appropriate compliance time for this action, the FAA considered not only the degree of urgency associated with addressing the subject unsafe condition, but the availability of required parts, and the practical aspect of installing the required system enhancements within an interval of time that parallels the normally scheduled maintenance holds for the majority of affected operators. In consideration of these items, the FAA finds that the proposed compliance time of 24 months is appropriate for this rulemaking action. However, the FAA recognizes that a parts availability problem may exist in certain cases. Therefore, under the provisions of paragraph (b) of the final rule, the FAA may approve requests for adjustments to the compliance time if data are submitted to substantiate that such an adjustment would provide an acceptable level of safety.

Two commenters express concern that the economic impact information reflected in the proposal is underestimated. One commenter provides a detailed breakdown of costs associated with the accomplishment of five service bulletins cited in the proposed rule. The cost estimates for those service bulletins, as presented by the commenter, are higher than those specified in the proposed rule. Those estimates include costs for planning hours by engineering staff. The second commenter estimates that the cost estimate specified in one particular service bulletin is off (lower) by a factor of 2 or 3. This commenter indicates that the accomplishment of one of the service bulletins referenced will result in loss of revenue due to payload restrictions on a small percentage of flights as a result of a 40-pound weight increase incurred by installation of the subject modification. Both commenters state that costs associated with accomplishing a particular service bulletin that is not cited in the proposal should be included in the economic impact information, since the service bulletin is specified as a prerequisite for accomplishment of a service bulletin that is cited in the proposal.

From these remarks, the FAA infers that the commenters request that the economic impact information specified in the preamble to this rule be revised. Consequently, the FAA has re-evaluated that information and obtained updated cost data from the manufacturer. Accordingly, the FAA has revised the economic impact information, below, to reflect the best data available to date. The cost analysis in AD rulemaking actions typically does not include planning hours or costs pertaining to particular operating scenarios that could result in higher fuel costs and lower payload capacity or restrictions, as suggested by the commenters. The number of work hours represents the time required to gain access, remove parts, modify, and close up.

One commenter requests that separate AD's be issued for each of the 12 service bulletins cited in the proposed AD to allow for adequate tracking and closure. The FAA does not concur with this request. Issuing 12 separate AD's would not increase the ability of affected operators to track compliance with the AD and maintain accurate records of compliance more adequately than issuing a single AD to address all 12 service bulletins. The FAA finds that the consequent workload burden that would be associated with documenting maintenance record entries (i.e., recording 12 new AD numbers) among all

of the affected operators would not be appropriate. Therefore, in light of the consequent workload associated with maintenance record entries, the FAA has determined that a less burdensome approach is to issue only one AD that requires the accomplishment of 12 service bulletins.

Conclusion

After careful review of the available data, including the comments noted above, the FAA has determined that air safety and the public interest require the adoption of the rule with the changes previously described. The FAA has determined that these changes will neither significantly increase the economic burden on any operator nor increase the scope of the AD.

The FAA is continuing to review the recommendations of the SRTF working group for these airplanes and may consider further rulemaking based on those recommendations.

Economic Impact

There are approximately 427 Model DC-10 series airplanes and Model KC-10A (military) airplanes of the affected design in the worldwide fleet. The FAA estimates that 254 airplanes of U.S. registry will be affected by this AD.

Approximate work hours to accomplish the required actions and costs for required parts are listed in the following table. The average labor rate is \$60 per work hour.

Service	Estimated	Parts Cost	Total Cost
Bulletin No.	Work Hours	Per Airplane	Per Airplane
27-71	5	\$26,998.00	\$27,298.00
27-120	3	\$68.00	\$248.00
27-152	1	\$487.00	\$547.00
27-181	5	\$611.00	\$911.00
27-201	10	\$9,893.00	\$10,493.00
27-208	5	\$492.00	\$792.00
27-209	9	\$489.00	\$1,029.00
29-109	101	\$1,408.00	\$7,468.00
29-125	4	\$269.00	\$509.00
32-134	3	\$5,525.00	\$5,705.00
32-143	3	\$3,926.00	\$4,106.00
32-157	6	\$70,744.00	\$71,104.00

Based on these figures, the total cost impact of the AD on U.S. operators is estimated to be \$33,073,340, or \$130,210 per airplane.

The total cost impact figure discussed above is based on assumptions that no operator has yet accomplished any of the requirements of this AD action, and that no operator would accomplish those actions in the future if this AD were not adopted.

The number of required work hours, as indicated above, is presented as if the accomplishment of the actions required by this AD were to be conducted as "stand alone" actions. However, the 24-month compliance time specified in paragraph (a) of this AD should allow ample time for the actions to be accomplished coincidentally with scheduled major airplane inspection and maintenance activities, thereby minimizing the costs associated with special airplane scheduling.

Further, the FAA recognizes that the obligation to maintain aircraft in an airworthy condition is vital, but sometimes expensive. Because AD's require specific actions to address specific unsafe conditions, they appear to impose costs that would not otherwise be borne by operators. However, because of the general obligation of operators to maintain aircraft in an airworthy condition, this appearance is deceptive. Attributing those costs solely to the issuance of this AD is unrealistic because, in the interest of maintaining safe aircraft, most prudent operators would accomplish the required actions even if they were not required to do so by the AD.

A full cost-benefit analysis has not been accomplished for this AD. As a matter of law, in order to be airworthy, an aircraft must conform to its type design and be in a condition for safe operation. The type design is approved only after the FAA makes a determination that it complies with all applicable airworthiness requirements. In adopting and maintaining those requirements, the FAA has already made the determination that they establish a level of safety that is cost-beneficial. When the FAA, as in this AD, makes a finding of an unsafe condition, this means that the original cost-beneficial level of safety is no longer being achieved and that the required actions are necessary to restore that level of safety. Because this level of safety has already been determined to be cost-beneficial, a full cost-benefit analysis for this AD would be redundant and unnecessary.

Regulatory Impact

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 final evaluation has been prepared for this action and it is contained in the Rules Docket. A copy of it may be obtained from the Rules Docket at the location provided under the caption "ADDRESSES."

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) 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.

§ 39.13 - [Amended]

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

▼ Regulatory Information

95-14-06 MCDONNELL DOUGLAS: Amendment 39-9298. Docket 94-NM-114-AD.

Applicability: Model DC-10-10, -10F, -15, -30, -30F, -40, and -40F series airplanes and Model KC-10A (military) airplanes; as listed in the following McDonnell Douglas DC-10 service bulletins; certificated in any category:

Service Bulletin Number	Revision Level	Date Issued
27-71	1	February 14, 1973
27-120	Original	February 10, 1975
27-152	Original	August 9, 1976
27-181	1	May 28, 1981
27-201	Original	December 30, 1985
27-208	Original	September 5, 1989
27-209	Original	October 20, 1989

29-109	1	September 22, 1978
29-125	2	October 23, 1987
32-134	Original	March 22, 1977
32-143	Original	August 8, 1978
32-157	1	October 29, 1980

NOTE 1: This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For airplanes that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must use the authority provided in paragraph (b) of this AD to request approval from the FAA. This approval may address either no action, if the current configuration eliminates the unsafe condition; or different actions necessary to address the unsafe condition described in this AD. Such a request should include an assessment of the effect of the changed configuration on the unsafe condition addressed by this AD. In no case does the presence of any modification, alteration, or repair remove any airplane from the applicability of this AD.

Compliance: Required as indicated, unless accomplished previously.

To ensure airplane survivability in the event of damage to fully powered flight control systems, accomplish the following:

(a) Within 24 months after the effective date of this AD, modify the flight controls, hydraulic power systems, and landing gear in accordance with paragraphs (a)(1) through (a)(12) of this AD, as applicable.

(1) For airplanes listed in McDonnell Douglas DC-10 Service Bulletin 27-71, Revision 1, dated February 14, 1973: Install surge damper assemblies and new piping assemblies in hydraulic systems 1 and 3 of the horizontal stabilizer in accordance with the service bulletin. As of the effective date of this AD, no person shall install a pipe assembly, part number AJK7004-641, -642, -643, -644, -645, -646, -647, -or 648 on any airplane. As of the effective date of this AD, no person shall install a valve assembly, part number AJG7041-5515 or -5517, on any airplane unless that assembly has been modified in accordance with the service bulletin.

(2) For airplanes listed in McDonnell Douglas DC-10 Service Bulletin 27-120, dated February 10, 1975: Modify and reidentify the trim hydraulic motor assembly of the horizontal stabilizer in accordance with the service bulletin.

NOTE 2: The McDonnell Douglas service bulletin references Sperry Rand Corporation, Vickers Division, Service Bulletin 390017-27-2, dated December 2, 1974, as an additional source of service information.

(3) For airplanes listed in McDonnell Douglas DC-10 Service Bulletin 27-152, dated

August 9, 1976: Replace the existing retaining nut locking clip on the torsional coupling of the horizontal stabilizer with a new retaining nut locking clip in accordance with the service bulletin. As of the effective date of this AD, no person shall install a locking clip or nut retainer, part number AJH7259-1, on any airplane.

(4) For airplanes listed in McDonnell Douglas DC-10 Service Bulletin 27-181, Revision 1, dated May 28, 1981: Install a modified chain drive unit on the horizontal stabilizer in accordance with the service bulletin. As of the effective date of this AD, no person shall install a chain drive unit assembly, part number AJH7337-1 or AJH7337-501; pin, part number AJH7343-1; housing assembly, part number AJH7345-1; shaft, part number AJH7075-1 or -501; or decal, part number AJH7347-1; on any airplane.

(5) For airplanes listed in McDonnell Douglas DC-10 Service Bulletin 27-201, dated December 30, 1985: Replace the hydraulic pipe assemblies of the flap lock valve with new pipe assemblies in accordance with the service bulletin. As of the effective date of this AD, no person shall install a pipe assembly, part number AYK7002-876, -877, -878, -879, -880, and -881; AYK7136-1; and AYK7137-1; on any airplane.

(6) For airplanes listed in McDonnell Douglas DC-10 Service Bulletin 27-208, dated September 5, 1989: Replace eight end caps of the trim control valve of the horizontal stabilizer with new end caps having a larger inside radius, in accordance with the service bulletin. As of the effective date of this AD, no person shall install an end cap, part number AJG7020-503; or valve assembly, part number AJG7041-5535, -5533, -5531, -5529, -5527, -5525, -5523, -5521, -5519, -5517, -5515, -5513, -5511, -5509, -5507, -5505, -5503, -5501, or -5001; on any airplane.

(7) For airplanes listed in McDonnell Douglas DC-10 Service Bulletin 27-209, dated October 20, 1989: Inspect the nuts on the shaft assembly for looseness, proper orientation, excess backlash, and engagement of the washer locking tab, in accordance with the service bulletin. As of the effective date of this AD, no person shall install a drive assembly, part number AJH7337-505, on any airplane unless that assembly has been modified in accordance with the service bulletin.

(i) If no discrepancy is found, no further action is required by this paragraph.

(ii) If any discrepancy is found, prior to further flight, replace the fuse pin, adjust backlash, and properly position and tighten the nuts in accordance with the service bulletin.

(8) For airplanes listed in McDonnell Douglas Service Bulletin 29-109, Revision 1, dated September 22, 1978: Install an indication system on the reversible motor pump in accordance with the service bulletin. As of the effective date of this AD, no person shall install a nameplate, part number ABN7191-1124, -1125, -1126, -872, -873, -874, -878, or -1084; a support, part number 2394536-509; or a plate, part number 2710497-1-6; on any airplane.

(9) For airplanes listed in McDonnell Douglas DC-10 Service Bulletin 29-125, Revision 2, dated October 23, 1987: Modify the main hydraulic power system in accordance with the service bulletin. As of the effective date of this AD, no person shall install an annunciator panel, part number 102200-268, or -274, on any airplane unless that panel has been modified in accordance with the service bulletin.

(10) For airplanes listed in McDonnell Douglas DC-10 Service Bulletin 32-134, dated March 22, 1977: Modify the aft antiskid manifold on the left and right main landing gear in accordance with the service bulletin. As of the effective date of this AD, no person shall install a bracket, part number ARG7291-1, ARG7291-501, ARG7485-501, or ARG7485-502 on any airplane. As of the effective date of this AD, no person shall install a main landing gear assembly, part number ARG7393-(Any Configuration), on any airplane unless that assembly has been modified in accordance with the service bulletin.

(11) For airplanes listed in McDonnell Douglas DC-10 Service Bulletin 32-143, dated August 8, 1978: Install protective shields over the brake and antiskid piping located on the aft side of the left and right main landing gear in accordance with the service bulletin. As of the effective date of this AD, no person shall install a support, part number ARG7551-1 or ARG7552- 1, or bracket, part number AEP8009-25, on any airplane. As of the effective date of this AD, no person shall install a main landing gear assembly, part number ARG7393-(Any Configuration), on any airplane unless that assembly has been modified in accordance with the service bulletin.

(12) For airplanes listed in McDonnell Douglas DC-10 Service Bulletin 32-157, Revision 1, dated October 29, 1980: Install a doubler on the web assembly between the wheel wells of the center landing gear and the right main landing gear; install a fiberglass deflector assembly on the shock strut of the centerline landing gear; replace the pressure gage manifold of the shock strut; and install an instruction plate and adding precaution instruction markings in the wheel well of the right main landing gear and on the forward door of the center landing gear in accordance with the service bulletin. As of the effective date of this AD, no person shall install a manifold, part number AYK7162-501, on any airplane.

(b) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Los Angeles Aircraft Certification Office (ACO), FAA, Transport Airplane Directorate. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Los Angeles ACO.

NOTE 3: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Los Angeles ACO.

(c) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be accomplished.

(d) The actions shall be done in accordance with the following McDonnell Douglas DC-10 Service Bulletins, which contain the specified effective pages:

Service Bulletin Referenced and Date	Page Number	Revision Level Shown on Page	Date Shown on Page
27-71, Revision 1, February 14, 1973	1-10	1	February 14, 1973
27-120, February 10, 1975	1	Original	February 10, 1975
27-152, August 9, 1976	1-6	Original	August 9, 1976
27-181, Revision 1, May 28, 1981	1-12	1	May 28, 1981
27-201, December 30, 1985	1-15	Original	December 30, 1985
27-208, September 5, 1989	1-16	Original	September 5, 1989
27-209, October 20, 1989	1-11	Original	October 20, 1989
29-109, Revision 1 September 22, 1978	1, 2, 4, 5, 7, 7A, 10, 19, 31-35	1	September 22, 1978
	3, 6, 8, 9, 11-18, 20-30, 32, 36	Original	August 25, 1976
29-125, Revision 2, October 23, 1987	1-22	2	October 23, 1987
32-134, March 22, 1977	1-13	Original	March 22, 1977
32-143, August 8, 1978	1-11	Original	August 8, 1978
32-157, Revision 1, October 29, 1980	1-23	1	October 29, 1980

This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from McDonnell Douglas Corporation, 3855 Lakewood Boulevard, Long Beach, California 90846, Attention: Technical Publications Business Administration, Department C1-L51 (2-60). Copies may be inspected at the FAA, Transport Airplane Directorate, 1601 Lind

Avenue, SW., Renton, Washington; or at the FAA, Los Angeles Aircraft Certification Office, Transport Airplane Directorate, 3960 Paramount Boulevard, Lakewood, California; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

(e) This amendment becomes effective on August 18, 1995.

▼ **Footer Information**

▼ **Comments**