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RULES and REGULATIONS  
DEPARTMENT OF TRANSPORTATION

14 CFR Part 39

(Docket No. 91-NM-220-AD; Amendment 39-8469; AD 93-01-15)

Airworthiness Directives; McDonnell Douglas Model DC-8 Series Airplanes

Friday, January 22, 1993

\*5576 AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment supersedes an existing airworthiness directive (AD), applicable to McDonnell Douglas Model DC-8 series airplanes, that currently requires structural inspections to detect fatigue cracking, reporting of the inspection results, and repair or replacement, as necessary, to ensure continued airworthiness as these airplanes approach the manufacturer's original fatigue design life goal. This amendment requires modification of the existing sampling program to: (a) Require additional visual inspections of all Principal Structural Elements (PSE's) on certain airplanes, (b) include expanded/modified PSE's, (c) revise the reporting requirements, and (d) increase the sample size. This amendment is prompted by new data submitted by the manufacturer indicating that additional inspections and an expanded sample size are necessary to increase the confidence level of the statistical program to ensure timely detection of cracks in PSE's. The actions specified by this AD are intended to prevent fatigue cracking, which could result in a compromise of the structural integrity of these airplanes.

DATES: Effective February 26, 1993.

The incorporation by reference of certain publications listed in the regulations was approved previously by the Director of the Federal Register as of August 10, 1987 (54 FR 25591, July 8, 1987).

The incorporation by reference of certain other publications listed in the regulations is approved by the Director of the Federal Register as of February 26, 1993.

ADDRESSES: The service information referenced in this AD may be obtained from McDonnell Douglas Corporation, P.O. Box 1771, Long Beach, California 90846-1771, Attention: Business Unit Manager, Technical Publications--Technical Administrative Support, C1-L5B. 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, 3229 East Spring Street, Long Beach, California; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Mike Lee, Aerospace Engineer, Airframe Branch, ANM-122L, FAA, Transport Airplane Directorate, Los Angeles Aircraft Certification Office, 3229 East Spring Street, Long Beach, California 90806- 2425; telephone (310) 988-5325; fax (310) 988-5210.

SUPPLEMENTARY INFORMATION: A proposal to amend part 39 of the Federal Aviation Regulations by superseding AD 87-14-06, Amendment 39-5631 (54 FR 25591, July 8, 1987), which is applicable to McDonnell Douglas Model DC-8 series airplanes, was published in the Federal Register on January 15, 1992 (57 FR 1697). The action proposed to require structural inspections and necessary repair or replacement to ensure continued airworthiness as these airplanes approach the manufacturer's original fatigue design life goal.

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.

Several commenters request that the AD be issued as a revision to AD 87-14-06, which would retain this same AD number, rather than as a supersedure, which would be given a new AD number. The commenters note that a revision would lessen the chances for a bookkeeping error to occur. The FAA does not concur. The FAA's current policy (reference FAA Order 8040.1B, "Airworthiness Directives") is that, \*5577 whenever a "substantive change" is made to an existing AD, the AD must be superseded, rather than revised. "Substantive changes" are those made to any instruction or reference that affects the substance of the AD, and includes part numbers, service bulletin and manual references, compliance times, applicability, methods of compliance, corrective action, inspection requirements, and effective dates. In the case of this AD rulemaking action, the changes being made to the existing AD are considered substantive. This superseding AD is assigned a new amendment number and new AD number; the previous amendment is deleted from the system. This procedure facilitates the efforts of the Principal Maintenance Inspectors in tracking AD's and ensuring that the affected operators have incorporated the latest changes into their maintenance programs.

With regard to bookkeeping changes required by affected operators, Federal Aviation Regulations (FAR) § 121.380(a)(2)(v), "Maintenance recording requirements," requires that persons holding an operating certificate and operating under FAR part 121 must keep records "indicating the current status of applicable airworthiness directives, including the method of compliance." Whether an existing AD is superseded or revised, the new AD is assigned a new AD number: A superseding AD is assigned a new 6-digit AD number; a revising AD retains the original 6-digit AD number, but an "R1" is added to it. In either case, the new AD is identified by its "new" AD number, not by the "old" AD number. In light of this, affected operators updating their maintenance records to indicate the current AD status would have to record a new AD number in all cases, regardless of whether the AD is a superseding or a revising AD. Further, operators are always given credit for work previously performed in accordance with the existing AD by means of the phrase in

the compliance section of the AD that states, "Required \* \* \* unless accomplished previously."

One commenter requests a revision to the compliance time to accomplish the inspections of those Principal Structural Elements (PSE) that are near or past the end dates by extending it to one year. The commenter notes that the proposed compliance time of six months to incorporate the latest SID revision into an operator's maintenance program is inadequate to accomplish all overdue PSE's without imposing an undue burden on operators. The FAA does not concur with the commenter's request to extend the compliance time. The FAA has determined that the compliance time, as proposed, represents the maximum interval of time allowable for the affected airplanes to continue to operate prior to accomplishing the required inspections without compromising safety. However, under the provisions of paragraph (d) of the final rule, the FAA may approve an alternative method of compliance or adjustment of the compliance time if operators submit sufficient justification to the FAA.

Several commenters note that the process for reporting inspection results needs improvement. These commenters audited the reports from one operator and found over 200 discrepancies in appendix C of volume III-91 of McDonnell Douglas Report No. L26-011, "DC-8 Supplemental Inspection Document (SID)," dated April 1991, which contains the record of inspection results submitted to McDonnell Douglas Corporation. The FAA does not concur that a change to the AD is necessary. McDonnell Douglas has advised the FAA that it has recognized the occurrence of these discrepancies and has taken steps to correct them and to ensure that they will not occur again. However, under the provisions of paragraph (d) of the final rule, the FAA may approve, on a case-by-case basis, an alternative method of reporting inspection results, if sufficient justification is presented to the FAA.

One commenter requests that proposed paragraph (b), which references only section 2 of volume I of the SID for those PSE's that need to be inspected, be revised to include section 3 of volume 1, since PSE's related to previous AD's are defined in section 3. The FAA concurs. Paragraph (b) of the final rule has been revised accordingly.

One operator requests that proposed paragraph (c) be revised to delegate approval of repairs to Designated Engineering Representatives (DER) of the McDonnell Douglas Corporation, since this operator has experienced delays and additional costs in obtaining approval of repair data by Aircraft Certification Office (ACO) managers. The FAA does not concur. While DER's are authorized to determine whether a design or repair method complies with a specific requirement, they are not authorized to make the discretionary determination as to what the applicable requirement is. Further, it is crucial that the FAA, as well as McDonnell Douglas, be aware of all repairs made to PSE's or to their configuration, and that damage tolerance analysis be performed for each repair to establish its effect on the fatigue life of the affected structure.

Paragraph (d) of the final rule has been revised to clarify the procedure for requesting alternative methods of compliance with this AD.

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 increase the economic burden on any operator nor increase the scope of the AD.

There are approximately 337 Model DC-8 series airplanes of the affected design in the worldwide fleet. The FAA estimates that 222 airplanes of U.S. registry and 15 U.S. operators will be affected by this AD. The procedures required by this AD action will require approximately 544 work hours per operator to accomplish, at an average labor cost of \$55 per work hour. Based on these figures, the cost to the 15 affected U.S. operators to incorporate the revisions of the SID program is estimated to be \$448,800.

The recurring inspection cost will require approximately 298 work hours per airplane per year to accomplish. The average labor charge will be \$55 per work hour. Based on these figures, the recurring inspection total cost impact of the AD on U.S. operators is estimated to be \$16,390 per airplane, or \$3,638,580 for the affected U.S. fleet.

Based on the above figures, the total cost impact of this AD is estimated to be \$4,087,380 for the first year, and \$3,638,580 for each year thereafter. This total cost figure assumes that no operator has yet accomplished the requirements of 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 "major rule" under Executive Order 12291; (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 \*5578 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 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.

14 CFR § 39.13

§ 39.13 (Amended)

14 CFR § 39.13

2. Section 39.13 is amended by removing amendment 39-6330 (54 FR 25591, July 8, 1987), and by adding a new airworthiness directive (AD), amendment 39- 8469, to read as follows:

93-01-15. McDonnell Douglas: Amendment 39-8469. Docket 91-NM-220-AD. Supersedes AD 87-14-06, Amendment 39-6330.

Applicability: Model DC-8 airplanes, certificated in any category.

Compliance: Required as indicated, unless accomplished previously.

To ensure the continuing structural integrity of these airplanes, accomplish the following:

(a) Within one year after August 10, 1987 (the effective date of AD 87-14-06, Amendment 39-5631), incorporate a revision into the FAA-approved maintenance inspection program which provides for inspection of the Principal Structural Elements (PSE's) defined in section 2 of volume I of McDonnell Douglas Report No. L26-011, "DC-8 Supplemental Inspection Document (SID)," dated December 1985, in accordance with section 2 of volume III of that document. The non-destructive inspection techniques set forth in Volume II of the SID provide acceptable methods for accomplishing the inspections required by this AD. All inspection results, negative or positive, must be reported to McDonnell Douglas, in accordance with the instructions of section 2 of volume III of the SID. Information collection requirements contained in this regulation have been approved by the Office of Management and Budget (OMB) under the provisions of the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq.) and have been assigned OMB Control Number 2120-0056.

(b) Within 6 months after the effective date of this AD replace the revision of the FAA-approved maintenance inspection program required by paragraph (a) of this AD with a revision that provides no less than the required inspection of the Principal Structural Elements (PSE's) defined in sections 2 and 3 of volume I of McDonnell Douglas Report No. L26-011, "DC-8 Supplemental Inspection Document (SID)," dated March 1991, in accordance with section 2 of volume III-91, dated April 1991, of that document. The non-destructive inspection techniques set forth in sections 2 and 3 of volume II, dated March 1991, of that SID provide acceptable methods for accomplishing the inspections required by this AD. All inspection

results, negative or positive, must be reported to McDonnell Douglas, in accordance with the instructions of section 2 of volume III-91 of the SID. Information collection requirements contained in this regulation have been approved by the OMB under the provisions of the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq.) and have been assigned OMB Control Number 2120-0056.

(c) Cracked structure detected during the inspections required by paragraphs (a) and (b) of this AD must be repaired before further flight, in accordance with a method approved by the Manager, Los Angeles Aircraft Certification Office, FAA, Transport Airplane Directorate.

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

(e) 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.

(f) Certain inspections and reporting shall be done in accordance with McDonnell Douglas Report No. L26-011, "DC-8 Supplemental Inspection Document (SID)," dated December 1985, as indicated. This incorporation by reference was approved previously by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51 as of August 10, 1987 (54 FR 25591, July 8, 1987). Certain other inspections and reporting shall be done in accordance with McDonnell Douglas Report No. L26-011, "DC-8 Supplemental Inspection Document (SID)," volume I, revision 3, dated March 1991; volume II, revision 5, dated March 1991; and volume III-91, dated April 1991. Volume I (revision 3, dated March 1991) and volume II (revision 5, dated March 1991) of McDonnell Douglas Report No. L26-011, "DC-8 SID," contain the following list of effective pages:

Volume	Shown on 'list of effective pages'	Revision level shown on page	Date shown page
Volume I	.. List of effective pages A, B, C .....	3	March 1991.
Volume II	. List of effective pages A, B, C, D, E, F, G, H, I, J, K, L .....	5	March 1991.

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, P.O. Box 1771, Long Beach, California 90846-1771, attention: Business Unit Manager, Technical Publications--Technical Administrative Support, C1-L5B. 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, 3229 East Spring Street, Long Beach, California; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

(g) This amendment becomes effective on February 26, 1993.

Issued in Renton, Washington, on January 11, 1993.

N.B. Martenson,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

(FR Doc. 93-1432 Filed 1-21-93; 8:45 am)

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58 FR 5576-01, 1993 WL 10459 (F.R.)

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