

Airworthiness Directive

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

Amendment 39-3981; AD **80-11-05 R1**

Airworthiness Directives; MCDONNELL DOUGLAS DC-10-10, -10F, -30, -30F, and -40 Series Airplanes

PDF Copy (If Available):

▼ Preamble Information

AGENCY: Federal Aviation Administration, DOT

DATES: Effective December 8, 1980.

▼ Regulatory Information

80-11-05 R1 MCDONNELL DOUGLAS: Amendment 39-3780 as amended by Amendment 39-3981. Applies to Model DC-10-10, -10F, -30, -30F, and -40 series airplanes, certificated in all categories.

Compliance required as indicated.

To ensure integrity of the wing engine pylon structure and attachment, accomplish the following on both the right and left wing:

(a) At each pylon removal and installation after the effective date of this AD, remove and install the engine and pylon separately unless removal or installation, or both, as an assembly is in accordance with a method approved by the Chief, Aircraft Engineering Division, FAA Western Region.

(b) At the next pylon reinstallation after the effective date of this amendment, unless already accomplished, install two flush-head bolts in place of the two raised head bolts adjacent to the pylon aft bulkhead upper flange centerline, in accordance with McDonnell Douglas DC-10 Service Bulletin 54-78 dated April 2, 1980.

(c) At each pylon reinstallation after June 30, 1980, protect the pylon aft bulkhead lug from contact with the clevis to wing attach bolt heads in accordance with a method approved by the Chief, Aircraft Engineering Division, FAA Western Region.

(d) Before further flight following any pylon reinstallation after the effective date of this AD, (1) inspect the aft pylon bulkhead in accordance with McDonnell Douglas DC-10 Nondestructive Testing Manual, Chapter 54-10-11, pages 634 and 634A, dated December 1, 1979; (2) inspect the pylon aft spherical bearing and attaching hardware to verify security of nut and bolt; and (3) inspect torque stripe for alignment. For pylons installed prior to June 30, 1980 on which paragraph (c) of this AD was not accomplished, repeat the inspection within the next 300 hours' time in service after the reinstallation inspection, and again within the next 600 hours' time in service following the second inspection.

(e) At next pylon reinstallation after the effective date of this AD or before the accumulation of 48,000 hours' total time in service, whichever comes sooner, unless already accomplished, install steel thrust links in place of titanium thrust links on all DC-10-10, -30, and -40 series aircraft in accordance with Part 2 of McDonnell Douglas Service Bulletin (SB) 54-47, dated August 18, 1975 (DC-10-30 and DC-10-40 Series), or McDonnell Douglas Service Bulletin 54-82, dated May 15, 1980 (DC-10-10 Series).

(f) Before the accumulation of 3,600 hours' total time in service, or within the next 3,600 hours' time in service or twelve calendar months, whichever comes later, since the last such inspection on airplanes with more than 3,600 hours' total time in service as of the effective date of this AD, and thereafter at intervals not to exceed 3,600 hours' time in service or twelve calendar months since the last inspection, inspect as follows:

1. Inspect wing and pylon attach fitting lugs in accordance with Part 2, paragraph C(1), of McDonnell Douglas Service Bulletin SB 54-74, dated December 21, 1979 (hereinafter referred to as SB 54-74).

2. Visually inspect the upper surface of pylon upper spar in accordance with Part 2, paragraph G, of SB 54-74.

3. Visually inspect lower surface of upper spar and spar cap angles in accordance with

Part 2, paragraph M, of SB 54-74.

4. Inspect pylon in accordance with DC-10 Maintenance Manual, Chapter 5-51-08, dated April 1, 1980. In addition, inspect the pylon aft spherical bearing and attaching hardware to verify security of nut and bolt; inspect torque stripe for alignment.

5. Perform an in situ X-ray or other nondestructive inspection of titanium thrust links to ensure integrity, in accordance with a method approved by the Chief, Aircraft Engineering Division, FAA Western Region.

(g) Within the next 30 days following the effective date of this AD, submit a pylon maintenance program as an amendment to the operations specification, to the assigned FAA Maintenance Inspector for approval, specifying that before the accumulation of 20,000 hours' time in service or within the next 20,000 hours' time in service since the last inspection, whichever occurs sooner, and thereafter at intervals not to exceed 20,000 hours' time in service since the last inspection, the operator will, at a minimum S/B -

1. Inspect pylon aft bulkhead visually in accordance with Part 2, paragraphs E and F of SB 54-74, and by eddy current in accordance with DC-10 Nondestructive Testing Manual, pages 634 and 634A, dated December 1, 1979.

2. Visually inspect front spar bulkhead in accordance with Part 2, paragraph H of SB 54-74.

3. Inspect wing front spar attach fitting (foot stool) in accordance with Part 2, paragraph L of SB 54-74.

4. Inspect lower forward spherical bearing in accordance with Part 2, paragraph I of SB 54-74.

5. Inspect upper forward spherical bearing plug assembly in accordance with methods specified in Part 2, paragraph J of SB 54-74 for both steel and titanium plugs.

6. Inspect thrust link installations in accordance with Part 2, paragraph C(2) of SB 54-74.

7. Inspect the aft spherical bearing as follows:

i. Remove aft spherical bearing through bolt. Magnaflux bolt and visually inspect inner bore of bushing in situ. Visually inspect forward and aft surfaces of spherical bearing for cracks using 10X (power) glass (or equivalent). Reinstall through bolt.

ii. Verify that torque of through bolt is 1200 to 1300 inch-pounds.

iii. Inspect aft spherical bearing forward face/clevis clearance.

iv. Torque stripe nut to bolt.

8. Ultrasonically inspect the bulkhead lug and wing clevis to wing attachment including bolts in accordance with DC-10 Nondestructive Testing Manual, Chapter 54-10-11, pages 635, 636, 637, 638, 638A, 638B, 651, 652, 654 and 655, as applicable dated December 1, 1979.

9. Perform an X-ray or other in situ inspection of steel thrust links to ensure integrity, in accordance with a method approved by the Chief, Aircraft Engineering Division, FAA Western Region.

(h) After a pylon has been subjected to vertical or horizontal misalignment, or both (e.g. during maintenance), before further flight, inspect in accordance with DC-10 Nondestructive Testing Manual, Chapter 54-10-11 pages 634 and 634A dated December 1, 1979.

(i) After each installation of a pylon with a titanium upper forward spherical bearing plug, after 200 hours' time in service from time of installation and not later than 400 hours' time in service after installation, ultrasonically inspect titanium plug in place in accordance with McDonnell Douglas Nondestructive Testing Manual 54-10-11, pages 628, 628A, 628B and 628C dated December 1, 1979.

(j) Inspect pylon for structural integrity in accordance with McDonnell Douglas DC-10 Maintenance Manual, Chapter 5-51-08 dated April 1, 1980 prior to further flight after events producing high pylon loads including, but not limited to:

1. Hard or overweight landings,

For the purposes of this AD, overweight landings are landings made at aircraft weights in excess of 369,000 pounds for DC-10-10 series airplanes and 436,000 pounds for DC-10-30 or DC-10-40 series airplanes.

2. Severe turbulence encounters,

3. Engine vibration which requires engine removal or critical engine failure, or both,

4. Ground damage (workstands, etc.),

5. Compressor stalls requiring engine removal,

6. Excursions from the runway of a nature that might have imposed loadings more severe than those normally encountered on the runway.

(k) Whenever fasteners are replaced as a result of the inspections specified in SB 54-74, Part 2, paragraph G, prior to installing new fasteners, inspect the holes and the area around adjacent fasteners (without removing fasteners) for cracks using eddy current or equivalent NDT methods.

(l) All discrepancies found as a result of inspections required by this AD which exceed limitations specified in FAA approved data must be corrected prior to further flight.

(m) Alternative inspections, modifications or other actions which provide equivalent level of safety may be used when approved by the Chief, Aircraft Engineering Division, FAA Western Region.

(n) Special flight permits may be issued in accordance with FAR 21.197 and 21.199 to operate airplanes to a base for the accomplishment of inspections required by this AD.

(o) Report results of all inspections to the assigned FAA Maintenance Inspector within 24 hours of accomplishment in the following format:

"N" Number, hour's time in service at inspection, pylon number, results of inspection by specific paragraph and subparagraph of this AD. In reporting be as specific as possible to identify location and size of crack, or specific location of discrepant fastener, etc. List part numbers.

This supersedes Amendment 39-3513 (44 FR 45375), AD 79-15-03, as amended by 39-3557 (44 FR 53735).

Amendment 39-3780 became effective May 27, 1980.

This amendment 39-3981 becomes effective December 8, 1980.

▼ Footer Information

▼ Comments