

Piper PA-24 (Comanche) Series Aeroplanes

**AD/PA-24/41
Amdt 2**

Wing Inspection for Fatigue Cracking

12/91

Applicability: All model PA-24 Model PA-24-250 S/N 24-1 and subsequent Model PA-24-260 S/N 24-3642, 24-4000 and subsequent Model PA-24-400 S/N 26-1 and subsequent.

Requirement: Modify the wing skin and visually inspect the left and right wing lower main spar caps and upper main spar attachment plate, in accordance with the Technical Requirements of FAA Emergency Airworthiness Directive 82-19-01 Piper dated 3 September 1982.

Note: The FAA rescinded AD 82-19-01 on 27 April 1988 and no longer supplies copies . A copy of this document is available, free of charge from Manager, Airworthiness and Operations Branch, Civil Aviation Authority, GPO Box 367, CANBERRA ACT 2601.

Compliance: At intervals not exceeding 100 hours time in service. This Directive was originally issued in June 1984. This amendment, which is issued for clarification only and does not affect compliance times, is effective from 12 December 1991.

Background: This requirement is based upon a FAA Directive issued to prevent the possibility of catastrophic wing failure associated with fatigue damage. Amendment 1 to this Directive clarified that the inspection is repetitive. Amendment 2 clarifies that the inspections must be continued for Australian registered aircraft (even though AD 82-19-01 has been withdrawn by the FAA), because the possibility of fatigue cracking still exists.

PIPER
Airworthiness Directive
Final Copy of Letter
Volume I

82-19-01 PIPER: Amendment 39-4474. Applies to Model PA-24 and PA 24-250 (S/Ns 24-1 through S/N 3687), PA-24-260 (S/Ns 3642, 24-4000 through 24-5034), and PA-24-400 (S/Ns 26-2 through 26-148) airplanes certificated in any category.

COMPLIANCE: Required as indicated, unless already accomplished.

To prevent possible hazards in flight associated with fatigue damage occurring in wing main spar lower caps and upper main spar attachment plate, accomplish the following:

a) For airplanes or wings with 1500 or more hours time-in-service on the effective date of this AD, accomplish paragraph c) within the next 20 hours time-in-service after the effective date of this AD and thereafter at intervals not exceeding 100 hours time-in-service from the last inspection. If the wings have been replaced and the time-in-service on the wings is established and verified by an FAA Maintenance/Manufacturing inspector, such time may be used instead of the aircraft time-in-service. If the time-in-service of replacement wings is unknown or cannot be verified, it must be assumed to be 1500 hours or more.

b) For airplanes or wings with less than 1500 hours time-in-service on the effective date of this AD, accomplish paragraph c) before the accumulation of 1520 hours time-in-service and thereafter at intervals not exceeding 100 hours time-in-service from the last inspection.

c) Visually inspect the left and right wing lower main spar caps and upper main spar attachment plate P/N 20313-00 in accordance with the following instructions:

1. For ease of access before inspecting the lower main spar caps, place aircraft on jacks per the manufacturer's Aircraft Service Manual.

2. Remove left and right inboard bottom wing root fairings to gain access to the bottom main spar cap in the area of the root rib.

3. Per Figure 1, outline wing skin area to be removed. Assure a minimum edge distance as shown between existing rivets and edge of cut out.

4. Insert a protective sheet of metal between the wing skin and spar cap to protect the spar cap from damage when making the skin cut out.

5. Cut out wing skin in area as shown on Figure 1 and dress all edges smooth.

6. Using a suitable stripper, remove the paint and thoroughly clean the bottom spar cap in area shown on Figure 1.

Exercise caution to avoid scratching or damaging the spar surface. Using dye penetrant method, inspect bottom spar cap in the designated area for cracks. (Refer to Figure 1.)

7. Using a light and mirror, visually inspect for cracks on the bottom spar cap aft flange per Figure 2.

8. If cracks are found, refer to paragraph d) below.

9. If no cracks are found:

A. Prime spar cap in area cleaned for inspection in paragraph c) 6 above.

B. Add a fabricated plate made of .040 (2024T3 Aluminum) to the wing fairing using standard AN rivets to cover wing skin cut out area per Figure 1; overlap adjoining wing skin approximately 1/2 inch. Ensure attachment rivets do not protrude in line with spar cap or wing skin.

C. Install inboard wing fairings.

D. Remove aircraft from jacks.

10. Gain access to upper main spar attachment Plate P/N 20313-00 by raising spar cover forward of No. 3 and 4 seats.

11. With a 10X magnifier, visually inspect the forward edge of the center area of the upper main spar attachment plate for signs of cracks.

12. If cracks are found, refer to paragraph d). If no cracks are found, reinstall spar cover and return aircraft to service.

d) Before further flight, replace cracked parts with undamaged parts of the same part number, or accomplish a repair which is approved by the Manager, New York Aircraft Certification Office, FAA, New England Region.

e) A special flight permit may be authorized in accordance with FAR 21.197 to a place where the inspections or repairs required by this AD may be accomplished with prior approval of the Manager, New York Aircraft Certification Office, FAA, New England Region.

f) Report findings of cracks found during the above inspection within 10 days to the Manager, New York Aircraft Certification Office, FAA, 181 South Franklin Avenue, Valley Stream, New York 11581 (516 791-6680). (Reporting approved by Office of Management and Budget under OMB Control No. 2120-00056).

g) An equivalent method of compliance with this AD may be used if approved by the Manager, New York Aircraft Certification Office, FAA, 181 South Franklin Avenue, Valley Stream, New York 11581.

h) Upon submission of substantiating data by an owner or operator through an FAA Maintenance Inspector, the Manager, New York Aircraft Certification Office, FAA, New England Region, may adjust the compliance times specified in this AD.

This amendment becomes effective on October 21, 1982, to all persons except those to whom it has already been made effective by priority letter from the FAA dated September 3, 1982, and is identified as AD 82-19-01.

FOR FURTHER INFORMATION CONTACT:

J. Maher, Airframe Section, ANE-172, New York Aircraft Certification Office, 181 South Franklin Avenue, Valley Stream, New York 11581; telephone (516) 791-6221.

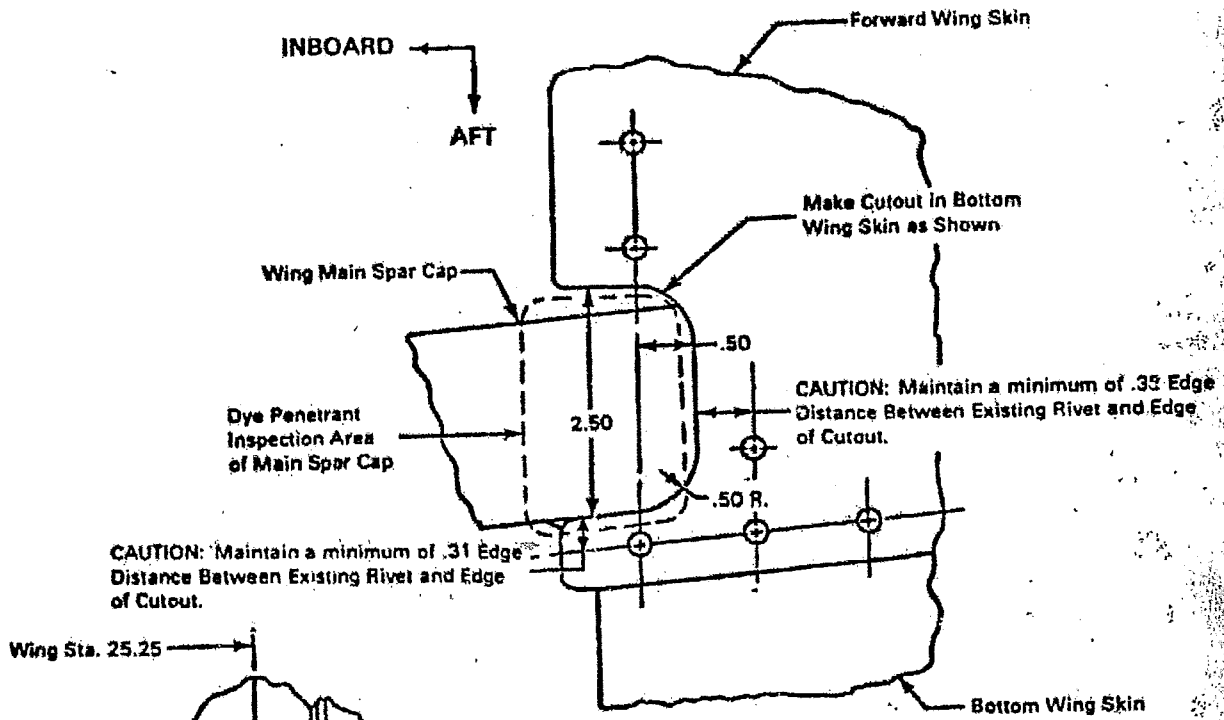


FIGURE 1

Bottom View of Left Wing Shown
Bottom View of Right Wing Opposite

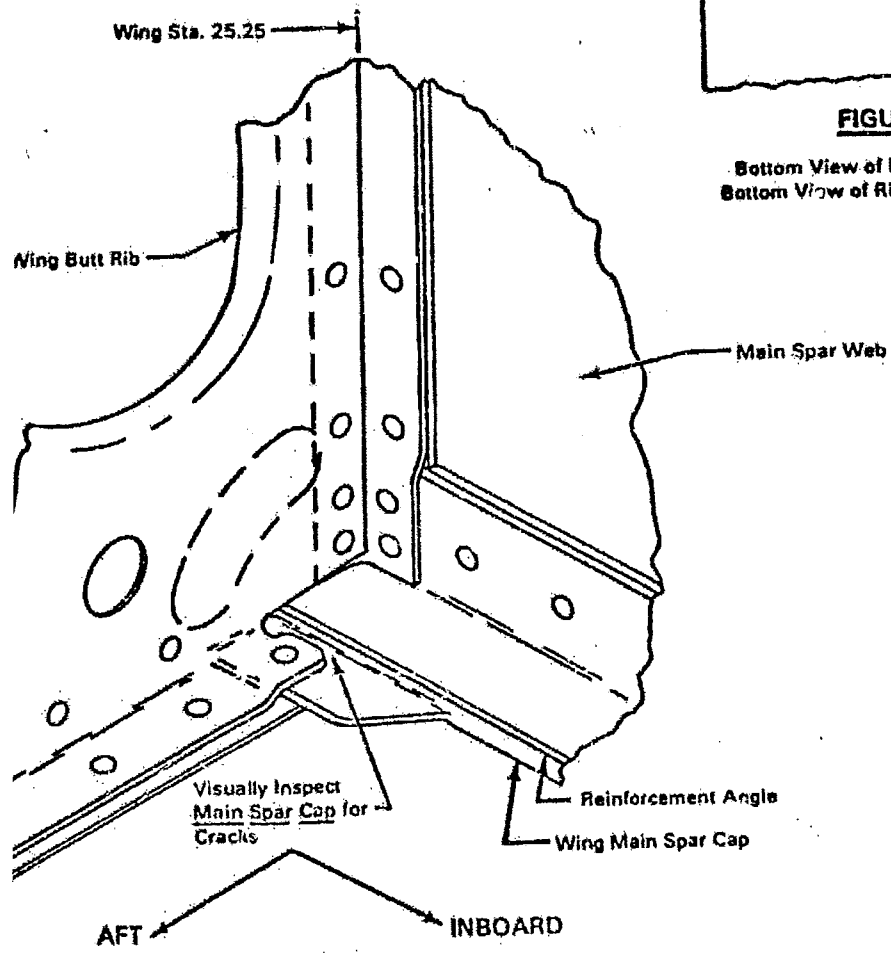


FIGURE 2

Left Wing Shown
Right Wing Opposite