



Piper Aircraft Corporation
2926 Piper Drive
Vero Beach, Florida, U.S.A. 32960

SERVICE *No. 967* BULLETIN

PIPER CONSIDERS COMPLIANCE MANDATORY

DATE: January 24, 1994

SUBJECT:

Aileron Hinge Inspection and Replacement

MODELS AFFECTED:

PA-31P Pressurized Navajo
PA-31T Cheyenne II

PA-31T1 Cheyenne I/Cheyenne IA

PA-31T-2 Cheyenne IIXL
PA-42 Cheyenne III

PA-42-720 Cheyenne IIIA

PA-42-720R Cheyenne IIIA

PA-42-1000 Cheyenne 400

SERIAL NUMBERS AFFECTED:

31P-03 through 31P-7730012
31T-7400002 through 31T-7400009
31T-7520001 through 31T-8120104
31T-7804001 through 31T-8304003
31T-1104004 through 31T-1104017
31T-8166001 through 31T-1166008
42-7800001 through 42-7800004
42-8001001 through 42-8001106
42-8301001 through 42-5501023
42-5501025 through 42-5501027
42-5501029 through 42-5501031
42-5501033, and 42-5501039
through 42-5501059
42-5501024 and 42-5501028
42-5501032 and 42-5501034
through 42-5501038
42-5527002 through 42-5527044

COMPLIANCE TIME:

At the next regularly scheduled maintenance event, but not to exceed the next one hundred (100) hours of operation and at each one hundred (100) hours thereafter until reaching one thousand (1000) hours time in service, at which time the aileron hinge must be replaced.

APPROVAL:

The technical contents of this Service Bulletin has been approved by the F.A.A.

PURPOSE:

Reports have been received indicating that small cracks are developing in the aileron spar and reinforcement doubler beneath the inboard aileron hinge attachment point.

Left uncorrected, the structural integrity of the aileron will be compromised to such a degree that aircraft flight characteristics may be affected.

This Service Bulletin provides instructions for inspection and replacement of the inboard aileron hinges.

(OVER)
ATA: 5750

INSTRUCTIONS: (REFER TO SKETCH "A" AS REQUIRED)

1. Remove left and right ailerons. Refer to the appropriate Maintenance Manual for specific instructions.
2. Remove existing inboard aileron hinge bracket and (if installed) the shim.

CAUTION: Do not confuse the aileron hinge with push/pull rod hinges.

3. Inspect area beneath the inboard hinge on the aileron spar for cracks. If cracks are not visually observed, use a suitable dye penetrant method for inspection.
4. If no cracks are found, re-inspect in accordance with the compliance time indicated. If a crack is found proceed to Instruction 5. If the time limit of one thousand (1000) hours time in service is reached with no cracks, proceed to Instruction 7.
5. If the aileron spar is cracked, inspect the rib just behind the hinge for signs of cracking. If the spar assembly and/or rib are cracked, replace them before proceeding further. Refer to the appropriate Parts Catalog for applicable part numbers.

NOTE: New replacement aileron spars will have holes and nutplates installed to accomodate the new aileron hinge bracket.

6. Install the new Hinge Bracket, Piper Part Number 74461-02 (left) and 74461-03 (right) utilizing three (3) each AN3-5A Bolts, Piper Part Number 401-266, three (3) each AN960-10 Washers Piper Part Number 407-564, and one (1) each MS24694S53 Flush Screw, Piper Part Number 410-035, per Hinge Bracket.

NOTE: The flush screw location is at the bottom outboard corner of each hinge bracket.

Burnish the area around the upper, outboard hole on the hinge brackets for ground strap installation. Add one (1) each MS35338-43 Lock Washer Piper Part Number 407-043 between the bolt head and washer, place ground strap terminal against hinge bracket and install bolt. Apply standard torque to each fastener.

NOTE: Some PA-42-720 aircraft may utilize a shim that is placed between the hinge bracket and the spar. If this is the case, replace the existing shim with a new Shim, Piper Part Number 74461-04. Additionally, with shim usage longer Fasteners are also required; i.e., AN3-6A, Piper Part Number 400-440 and MS24694S55, Piper Part Number 410-041.

7. If no cracks are present, it will be necessary to drill additional holes and add two (2) additional nutplates to the existing aileron spar assembly. Align and clamp new hinge brackets and shim together. Mark and drill shims to match hinge brackets. Temporarily install new hinge bracket and shim to aileron spar. Using the new hinge bracket and shim as a template, drill two (2) new .191 inch holes in the spar to match.
8. Remove enough rivets from the aileron skin to gain access to the inside of the aileron.

INSTRUCTIONS (CONT'D):

9. Inspect aileron rib flange for cracks at the original hinge bracket attachment point and replace if cracked. Install two (2) each NAS687A3 Nutplates, Piper Part Number 406-816, using two (2) each MS20426AD3 rivets to attach each nutplate. Seal the open nutplate which was previously used for the static ground strap attachment with RTV-106 sealant. Close the aileron skin using MS20470AD3 rivets as were originally installed.
10. Install the new hinge brackets, and shim if required, utilizing three (3) each AN3-5A Bolts, Piper Part Number 401-266, three (3) each AN960-10 Washers, Piper Part Number 407-564 and one (1) each MS24694S53 Flush Screw, Piper Part Number 410-035, per hinge bracket. See **NOTE** at the end of Instruction 6 for hardware required with shim installation. Burnish the area around the upper outboard hole on the hinge brackets for ground strap installation. Add one (1) each MS35338-43 Lock Washer, Piper Part Number 407-043 between the bolt head and washer, place ground strap terminal against hinge bracket and install bolt. Apply standard torque to each fastener.
11. Touch-up paint as required and check balance of each aileron per instructions contained in the appropriate aircraft Maintenance Manual.
12. Reinstall the ailerons on the aircraft, check rigging, travels and clearances. Refer to the appropriate aircraft Maintenance Manual as required.
13. Make appropriate logbook entry of compliance with this Service Bulletin.

MATERIAL REQUIRED: One (1) each Aileron Hinge Bracket, Piper Part Number 74461-02 (left) and one (1) each Aileron Hinge Bracket, Piper Part Number 74461-03 (right); two (2) each Shims (if required), Piper Part Number 74461-04; four (4) each NAS 687A3 Nutplates, Piper Part Number 406-816; six (6) each AN3-5A Bolts, Piper Part Number 401-266; six (6) each AN960-10 Washers, Piper Part Number 407-564; two (2) each MS24694S53 Flush Screws, Piper Part Number 410-035 and two (2) each MS35338-43 Lock Washers, Piper Part Number 407-043. (If shim installation is required substitute the following Fasteners: six (6) each AN3-6A Bolts, Piper Part Number 400-440 and two (2) each MS24694S55 Flush Screws, Piper Part Number 410-041.)

AVAILABILITY OF PARTS: Your Piper Field Service Facility.

EFFECTIVITY DATE: This Service Bulletin is effective upon receipt.

SUMMARY: There is no applicable factory participation for this Service Bulletin.

Please contact your Factory Authorized Piper Field Service Facility to make arrangements for compliance with this Service Bulletin in accordance with the Compliance Time indicated.

SUMMARY (CONT'D):

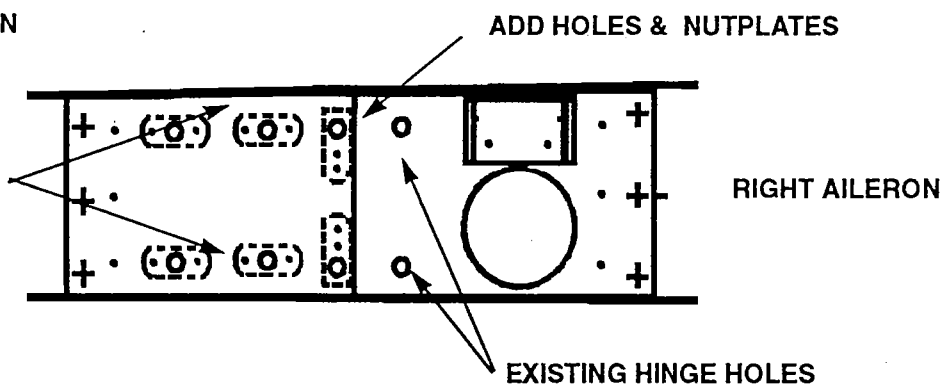
NOTE: If you are no longer in possession of this aircraft, please forward this information to the present Owner/Operator and notify the factory of address/ownership corrections. Changes should include aircraft model, serial number, current owners name and address.

Corrections/Changes should be directed to:

PIPER AIRCRAFT CORPORATION
ATTN: Customer Services
2926 Piper Drive
Vero Beach, FL 32960

TYPICAL AILERON

INSPECT:
CRACKS WILL
APPEAR ALONG
SPAR FLANGE
AND AT ATTACH
HOLES.

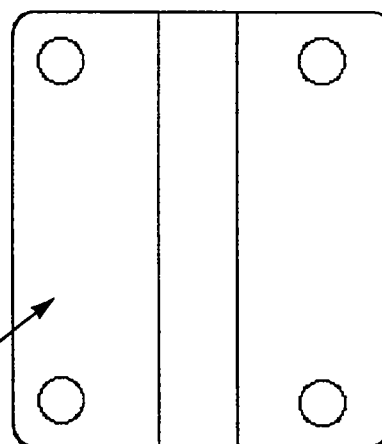
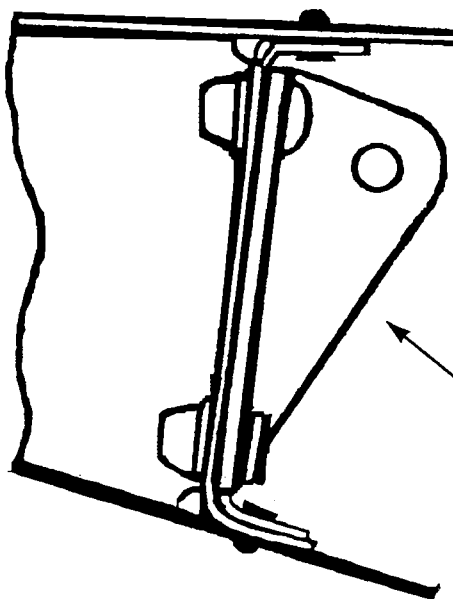
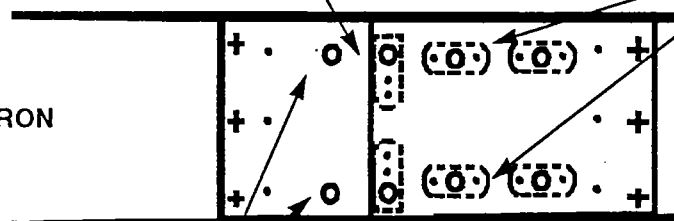


ADD HOLES & NUTPLATES

LEFT AILERON

EXISTING HINGE HOLES

INSPECT:
CRACKS WILL
APPEAR ALONG
SPAR FLANGE
AND AT ATTACH
HOLES.



INSTALL NEW HINGE
P/N'S 74461-02 (LEFT)
AND 74461-03 (RIGHT)

SKETCH A