



SERVICE LETTER

No. 770

Piper Aircraft Corporation

Lock Haven, Pennsylvania, U.S.A.

January 27, 1977

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Subject: Aileron Sprocket/Chain Inspection.

Models Affected: Serial Numbers Affected:

PA-31, PA-31-300 and PA-31-325	
"C/R" Navajo	31-2 to 31-7712005 Inclusive.
PA-31-350 Navajo Chieftain	31-5001 to 31-7752002 Inclusive.
PA-31P Pressurized Navajo	31P-1 to 31P-7630018 Inclusive.
PA-31T Cheyenne	31T-7400002 to 31T-7720002 Inclusive.

Compliance Time:

At the discretion of the owner/operator, recommended at the next regularly scheduled inspection interval (100 hours, Programmed Inspection Event, etc.). Subsequent inspections shall be in accordance with the respective aircraft service manual inspection data.

Purpose:

A report has been received from the field describing rough, "articulated" rotation of the pilot's control wheel. During corrective action, it was determined that the aileron sprocket and mating aileron control chain were misaligned, causing the chain to bind on the sprocket teeth. In addition to the above referenced roughness of operation, this condition, if not corrected, could cause eventual sprocket and/or chain wear.

This service release provides instructions for inspection of the aileron sprocket/aileron control chain for proper alignment and operation, and, if necessary, to reposition the sprocket assembly to gain proper alignment.

Instructions:

Refer to attached sketch/instruction data.

Material Required:

Refer to attached sketch/instruction data, nos. 3, 3a. and 3b.; Shims, part numbers 41179-00 and/or 55817-02, only as required per instructions; suggested unit list price \$.58 and \$.98, respectively.

Availability of Parts:

Your Piper Field Service Facility.

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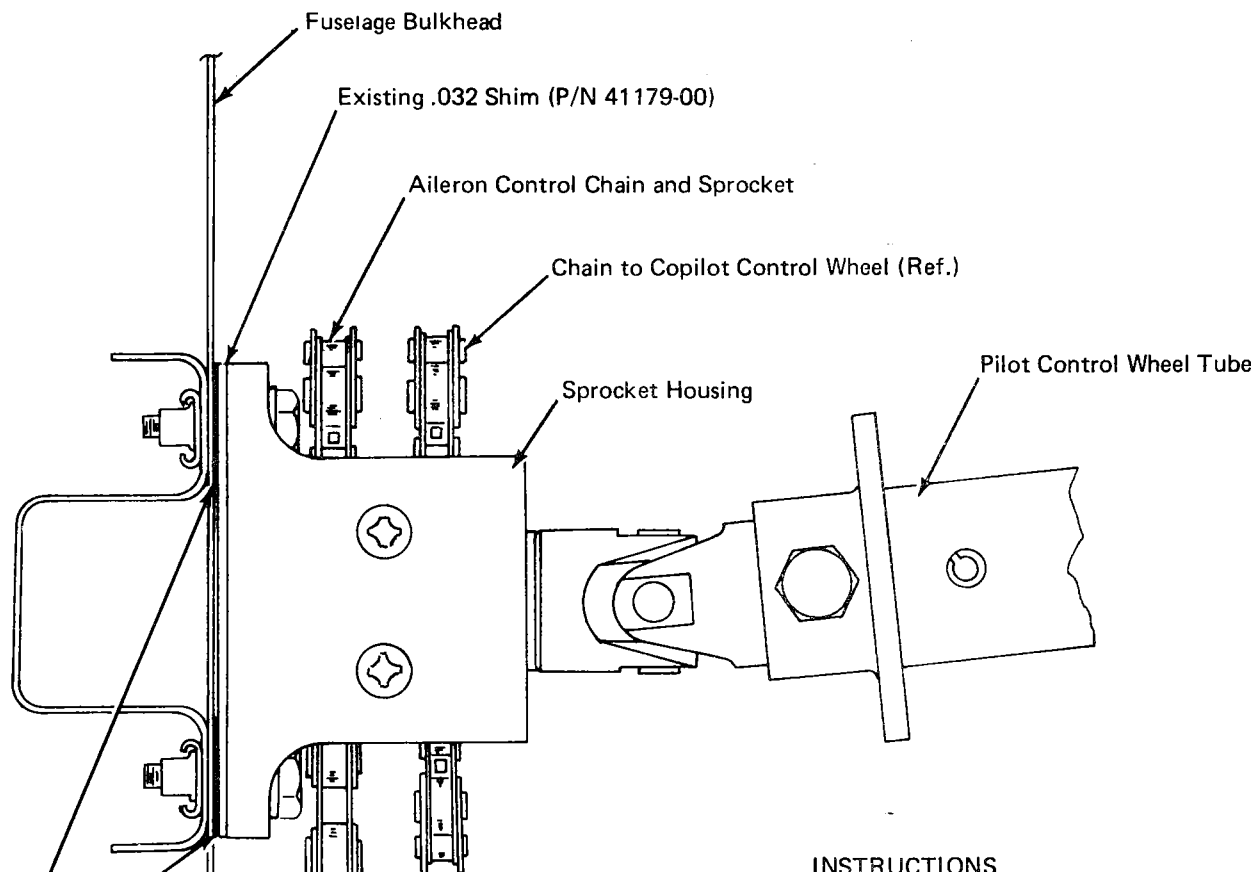
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Effectivity:

This service release is effective upon receipt.

Summary:

Please contact your Piper Field Service Facility to make arrangements to include the provisions of this service release in your next regularly scheduled inspection interval, as recommended by Compliance Time, above, especially if the subject condition is present in your aircraft. This information is submitted in the interest of insuring maximum operation and service life of the subject system.



Add new .012 shim (P/N 55817-02) as req. to attain proper vertical alignment of sprocket and aileron control chain.

INSTRUCTIONS

1. To determine if corrective action is required because of misalignment of the pilot's control wheel sprocket and mating aileron control chain, it will be necessary to perform the following checks.

NOTE

To adequately perform the following checks, the aircraft should be located in an area relatively free of excessive noise and vibration.

- a. Gently grasp the pilot's control wheel with both hands. Slowly rotate the wheel while carefully listening for sounds of roughness or the feel of uneven action when the aileron chain links pass over each tooth of the sprocket.
- b. With one mechanic slowly rotating the pilot's control wheel, and another mechanic (with flashlight and mirror) observing the movement of the aileron chain over the sprocket, observe for smooth flow of the chain links over the sprocket throughout the total travel of the control wheel.
2. If roughness or uneven action is not felt, heard or seen, no further action is required.
3. If roughness or uneven action is detected, it could be due to lack of lubrication on the chain (if so, clean and lubricate), bent teeth on the sprocket (if so, sprocket must be replaced) or sprocket/control chain misalignment that must be corrected as follows.
 - a. Inspect at outboard end of sprocket housing to determine if the .032 shim (P/N 41179-00) is installed between the offset in the housing and the bulkhead. Install shim (P/N 41179-00) if it is not present. This shim will ensure proper horizontal alignment.
 - b. To attain proper vertical alignment, install new .012 shims (P/N 55817-02) between the top or bottom of the sprocket housing and the bulkhead, as required, to ensure a smooth flow of the chain links over the sprocket.
4. Make proper logbook entry of Service Letter 770 Compliance.