Piper Aircraft Corporation
Vero Beach, Florida, U.S.A.

SERVICE No. 910A BULLETIN

PIPER CONSIDERS COMPLIANCE MANDATORY

Date October 10, 1989 S

(Service Bulletin No. 910A supersedes and voids Service Bulletin No. 910, dated May 15, 1989 and the affected portions of Service Bulletin No. 528B, dated March 10, 1978)

This Service Bulletin is divided in two Parts. Check each Part for applicable compliance time, purpose and instructions.

SUBJECT: **Wing Lift Strut Assembly Inspection/Replacement**

REASON FOR REVISION: To revise models affected, serial numbers affected, compliance time, purpose, instructions and to add Part II.

APPROVAL: The technical contents of this Service Bulletin have been approved by the F.A.A.

PART I

MODELS AFFECTED:	SERIAL NUMBERS AFFECTED:
PA-18/18A Series Super Cub NOTE: Includes All Serial No. L-21A, L-21B, & L-18, Seaplane, Agricultural, and Military Versions	18-1 through 18-8309025, 1809001 through 1809032, 1809034 through 1809040
PA-19 Super Cub	19-1, 19-2 and 19-3

COMPLIANCE TIME: Before next flight and each twelve (12) month period thereafter.

NOTE:

If the inspection requirements of Service Bulletins No. 528B or No. 910 have been accomplished within the last twelve (12) months or if the wing lift struts are new and were installed within the last twelve (12) months, inspection is required no later than twelve (12) months after the last inspection or new lift strut installation as the case may be. If the aircraft is new with original lift struts installed, the repetitive inspection begins when the aircraft is twelve (12) months old.

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PURPOSE: Piper Aircraft has determined that the five (5) year repetitive inspection interval required in Service Bulletins No. 528B and 910 may be inadequate for the timely detection of serious wing lift strut corrosion. This corrosion, if allowed to progress, may lead to failure of the wing lift strut, and the possibility of loss of wing structure integrity.

The compliance time for the corrosion inspection and treatment is reduced to an interval not to exceed twelve (12) months from the last inspection or the first use of new lift struts . Initially Piper deems it necessary to replace existing wing lift strut with new sealed wing lift struts at a date not to exceed twenty-four (24) months. (See Part II)

Part I of this Service Bulletin provides an inspection an corrosion impediment procedure to detect and treat possible wing lift strut corrosion.

INSTRUCTIONS:

1. Remove wing lift struts and accomplish the inspection per inspection procedures on Sketch "A". Caution: All aircraft utilizing "cuffs" at the wing lift strut roots (top and/or bottom) should take extra care in inspection for external corrosion in the areas covered by the cuffs.
2. Inspect forks, clamps, fairleads and jury struts for condition and replace as necessary. All attaching hardware should be replaced.
3. After completion of the inspection procedure, but prior to the corrosion impediment procedure of the wing lift struts, turn each wing lift strut upside down and tap gently. This procedure is necessary to remove any water, debris, or corrosion particles which may have accumulated.
4. Lift strut tubes indicating presence of internal corrosion and which fail the inspection procedure must be replaced with new wing lift struts called for in PART II of this Service Bulletin. Note: Should corrosion be apparent from the outside, (rust pin holes or large rust stains) strut must be replaced even if strut passes the inspection procedure.
5. Treat (corrosion impediment) each wing lift strut per the instruction procedure note on Sketch "A". Treatment must coincide with each inspection as outlined in the compliance time above.
6. Lift strut assemblies which have been factory treated with corrosion preventive measures are identified by the installation of a cherry lock rivet installed at the upper (wing attachment) end.
7. Alternate preservative materials: In addition to the "Val oil" and "Lionoil" (preservatives), it is permissible to use the following alternate preservatives - Paralketone, linseed oil or any alternate preservatives that satisfy the requirements of Federal Specification TT-S-176D.

   NOTE:

   Upon successful completion of the inspection procedure and treatment, reinstall lift struts on aircraft.
8. Check aircraft rigging and adjust as necessary, use Piper Service Memo 19 (attachment A) as required to accomplish the proper rigging.
9. Make an appropriate logbook entry of compliance with this Service Bulletin.

PART II

MODELS AFFECTED:	SERIAL NUMBERS AFFECTED:
PA-18/18-A Series Super Cub NOTE: Includes All Serial No. L-21A, L-21B, & L-18, Seaplane, Agricultural, and Military Versions	18-1 through 18-8309025, 1809001 through 1809032, 1809034 through 1809040
PA-19 Super Cub	19-1, 19-2 and 19-3

COMPLIANCE TIME: To coincide with the next regularly scheduled inspection event or at next replacement of the wing lift strut, but not to exceed twenty-four (24) months from the initial inspection as called for in Part I of this Service Bulletin.

PURPOSE: Part II of this Service Bulletin announces the availability of new sealed wing lift struts which, when installed, will relieve inspection requirements of Part I of this Service Bulletin

INSTRUCTIONS:

1. Remove old wing lift strut.
2. Prepare, prime and paint new sealed wing lift struts to match aircraft before assembly.
3. Inspect clamps, fairleads and jury struts for condition and replace as necessary. All attaching hardware should be replaced.
4. Install new Sealed Wing Lift Strut Assemblies, Piper Part Number 89497-02 (front) and Piper Part Number 89498-02 (rear) on each wing.
5. Install "No Step" Decal, Piper Part Number 80944-02, at the base of each wing lift strut in the approximate location of the original "No Step" decal.
6. Check aircraft rigging and adjust as necessary. Use Piper Service Memo 19 (attachment A) as required to accomplish the proper rigging.
7. Upon successful completion of Part II of this Service Bulletin, make an appropriate logbook entry of compliance.

MATERIAL REQUIRED: As required by inspection for Part I or as required by Part II, two (2) each Front Wing Strut Assemblies, Piper Part Number 89497-02, two (2) each Rear Wing Strut Assemblies, Piper Part Number 89498-02, and four (4) each "No Step" Decal, Piper Part Number 80944-02.

AVAILABILITY OF PARTS: Your Piper Field Service Facility.

EFFECTIVITY DATE: This Service Bulletin is effective upon receipt.

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SUMMARY: Any applicable factory participation will remain in affect for a period of time not to exceed 180 days from the effective date of this Service Bulletin.

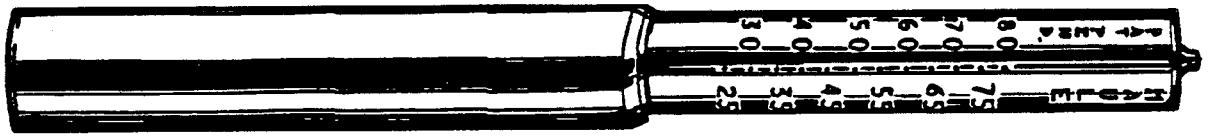
Special pricing is in effect for the Front Wing Lift Strut, Piper Part Number 89497-02 and for the Rear Wing Lift Strut, Piper Part Number 89498-02, for twenty-four (24) months from the effective date of this Service Bulletin.

Please contact your Factory Piper Field Service Facility to make arrangments for compliance with this Service Bulletin in accordance with the compliance time indicated.

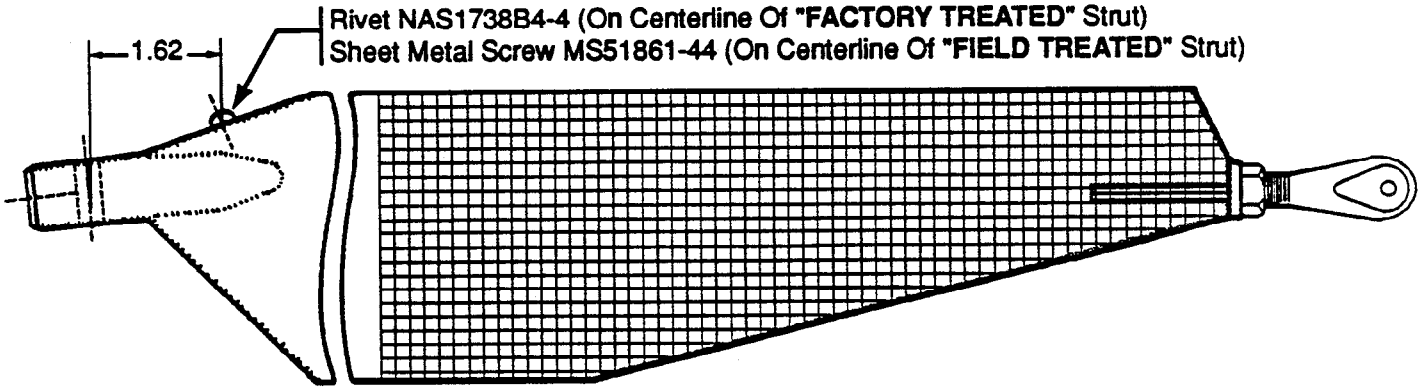
NOTE: If you are no longer in possession of this aircraft, please forward this information to the present owner/operator and notify the factory of address/ownership corrections. Changes should include aircraft model, serial number, current owner's name and address.

Corrections/changes should be directed to:

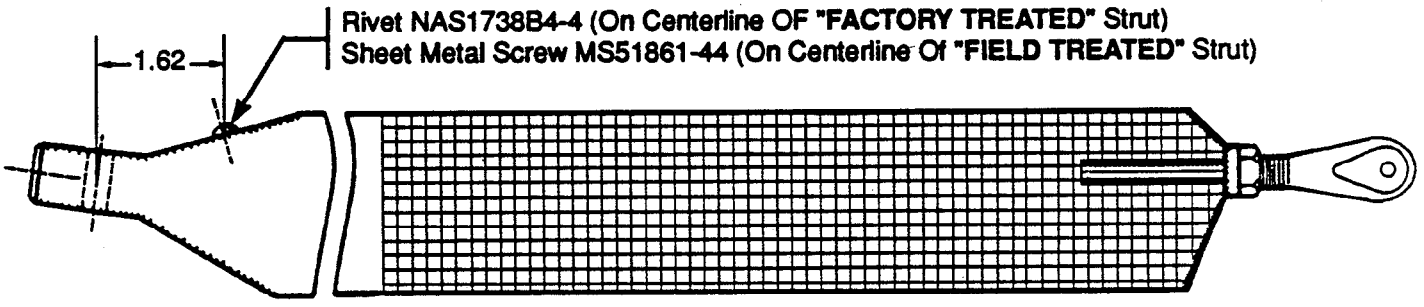
Piper Aircraft Corporation
Attn: Customer Services
P.O. Box 1328
Vero Beach, Florida 32961-1328



VIEW OF MAULE FABRIC TESTER



BOTTOM VIEW OF FRONT LIFT STRUT ASSEMBLY



BOTTOM VIEW OF REAR LIFT STRUT ASSEMBLY

INSPECTION PROCEDURE

1. Securely tape a sheet of thin 1/4 inch graph paper to the lower 11 inches of the top and bottom surface on all wing lift struts.
2. Using a Maule "FabricTester" and holding tool normal to strut contour, apply pressure at a scale reading of 80 in in each of the grid blocks.
3. Remove the paper and inspect the lift strut tubes. A perceptible dent will appear if internal corrosion is present. If any dents are found, be certain the dent are in the metal by carefully removing the paint.
   a. Lift strut tubes indicating the presence of any precptible dent in the metal must be replaced with a new lift strut assembly before further flight.
   b. If no dents appear in the metal, the lift strut may be considered airwothy.

   NOTE

   Further internal corrosion may be impeded per the following procedure:
   a. Remove lift strut from aircraft.
   b. Inject one quart of Valoil, Lionoil Multi-Purpose L-1, Linseed Oil, Paralketone or any alternate preservative conforming to Federa lSpecification TT-S-176D, into the bolt hole at the top of the strut.
   c. Plug the bolt holes and slosh oil until interior of strut is throughly coated.
   d. Drain oil from strut (through bolt holes) and install MS51861-44 sheet metal screw, as shown, for future identification.
   e. Reinstall strut to aircraft and rig.
4. Record lift strut inspection in aircraft logbook.

SKETCH "A"

REFERENCE SERVICE BULLETIN 910A

SERVICE MEMO

ATTACHMENT "A"

Service Memo No. 19

RIGGING PROCEDURE
Piper PA-18 and PA-19

RIGGING PROCEDURE: Raise the forward part of the airplane so that the wheels are just clear of the ground and support it by props under the front landing gear fittings. Raise the tail to approximate level flight position and support it there.

LEVELING: Level the airplane as follows: Drop plumb bob from P. K. Screw in door frame top channel to intersect punch mark in enclosure door rear hinge.

DIHEDRAL ANGLE: To check dihedral angle at the front spar proceed as follows:

Stretch a string along the top of the wings above the front spar, from wing tip to wing tip, and draw it tight.

Check the dimension vertically from the string to top of fuselage front spar wing hinge fitting. For correct dihedral this dimension should be 3 $\pm$ 1/8 inches.

To check for equal dihedral in each wing proceed as follows:

Using the 30 inch level (without any spacer blocks) hold it spanwise against the bottom of the wing under the front spar in the space between the jury struts and lift strut attachments. Note the position of the bubble and do the same on the other wing. Re-adjust the front struts until both wings show the same amount off level, being careful with each adjustment to set the left strut out the same number of turns as the right one is set in, and vice versa.

WASH OUT: To adjust the wash out in the wings (dihedral of the rear spar) proceed as follows:

Set a 3/8 inch spacer block on top of the 30 inch level at one end. Working on the rib adjacent to the outer end of the aileron, hold the level fore and aft along the bottom of the rib with the spacer block at the rear and the front end of the location of the front spar. The correct wash out will exist when the bubble is centered. Adjust the rear struts in or out to obtain this condition.

TAIL ASSEMBLY: With the airplane in level position the stabilizers should be leveled at their rear spars. The hinge line should be straight from tip to tip.

Plumb the fin at the rudder hinges.