



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

SERVICE *No.* 528D BULLETIN

* **PIPER CONSIDERS** *
* **COMPLIANCE MANDATORY** *

Date October 19, 1990 S

(Service Bulletin No. 528D supersedes and voids Service Bulletin No. 528C, dated October 11, 1989)

This Service Bulletin is divided into Two (2) PARTS. Check each PART for Purpose, Instructions, and Compliance Time.

SUBJECT:

Wing Lift Strut Assembly
Inspection/Replacement

REASON FOR REVISION:

To revise Compliance Time,
Purpose, Instructions, and to
announce the availability of new
sealed lift struts

MODELS AFFECTED:

All aircraft incorporating
steel wing lift struts (See note)
J-2 Series, Cub
J-3, NE-1, L-4 Cub
J-4 Series Coupe
J-5, J-5C, L-14, AE-1, HE-1, Series
Cub Cruiser
PA-11 Series, Cub Special
PA-12 Series, Super Cruiser
PA-14 Series, Family Cruiser
PA-15 Vagabond
PA-16 Clipper
PA-17 Vagabond
PA-20 Series, Pacer
PA-22 Series, Tri-Pacer/Colt
PA-25 Series, Pawnee

SERIAL NUMBERS AFFECTED:

ALL
500 through 1975
ALL
4-401 through 4-1649
5-1 through 5-1389
11-1 through 11-1678
12-1 through 12-4036
14-1 through 14-523
15-1 through 15-388
16-1 through 16-736
17-1 through 17-215
20-1 through 20-1121
22-1 through 22-9848
25-1 through 25-8156024

NOTE:

All variations of the PA-18 Series and PA-19 Series are no longer
Affected by this Service Bulletin and are covered by Piper Service
Bulletin No. 910A (or latest revision).

APPROVAL:

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

(OVER)
ATA: 5701

PART I

PURPOSE: The five (5) year repetitive inspection interval, required by compliance with Service Bulletin No. 528C may not be adequate for timely detection of serious wing lift strut corrosion. Eventually, undetected corrosion will reduce the strength of the lift strut, and could possibly lead to failure of the strut. In Service Bulletin No. 528C, the compliance time for the existing corrosion inspection and treatment procedure was reduced, and is currently at intervals *not to exceed twelve (12) months from the last inspection or the first use of a new lift strut.*

PART I of this Service Bulletin provides an inspection and treatment procedure to detect and treat the corrosion which may be present in the wing lift strut assemblies.

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

NOTE

If the inspection requirements of Service Bulletin No. 910A or 528C have been accomplished within the last twelve (12) months or if the wing lift struts are new, and have been installed within the last twelve (12) months, the repetitive inspection will be required no later than twelve (12) months after the last inspection or new lift strut installation as the case may be. Upon reaching (24) months from the effective date of this Service Bulletin, proceed to PART II. Compliance with PART II of this Service Bulletin will relieve the repetitive inspection requirements of PART I.

INSTRUCTIONS:

1. Prepare the aircraft for the removal of old wing lift struts by supporting the wing as necessary.
2. Remove wing lift struts and accomplish the inspection per "Inspection Procedure" on Sketch "A".

CAUTION:

All aircraft utilizing "cuffs" at the wing lift strut roots (top and/o bottom) should take extra care in inspection for external corrosion in the areas covered by the cuffs.

3. Inspect forks, clamps, hardware, fairleads and jury struts for condition and replace as necessary.
4. Turn each wing lift strut upside down and tap gently. This procedure is necessary to remove any water, debris or corrosion particles.
5. Inspect lift struts according to "Inspection Procedure" in Sketch "A". Lift struts indicating presence of internal corrosion or which fail the "Inspection Procedure" must be replaced with new sealed wing lift struts. Should corrosion be apparent from the outside (rust pin holes or large rust stained areas), strut must be replaced even if strut passes the "Inspection Procedure".

NOTE

The new sealed lift struts may be installed one at a time during the (24) months compliance time (PART II) provided the repetitive inspection requirements above are met for the lift struts that have not been replaced. Replacement of all lift struts with the new sealed lift struts will relieve the repetitive inspection requirements of PART I of this Service Bulletin.

INSTRUCTIONS (CONT'D):

6. Treat (corrosion impediment) each wing lift strut per the "Inspection Procedure" note on Sketch "A". Treatment (corrosion impediment) must coincide with each inspection as required by the compliance time above.
7. Upon completion of the "Inspection Procedure" and treatment, reinstall serviceable lift struts on the aircraft.
8. Check aircraft rigging and adjust as necessary. (Use appropriate Piper Service Memo and Owner Handbook as required to accomplish proper rigging.)
9. Make a logbook entry of compliance with PART I of this Service Bulletin.

MATERIAL REQUIRED: Not applicable

PART II

PURPOSE: Piper has developed an improved wing lift strut which will eliminate the concern for internal corrosion in wing lift struts. The new struts also feature an improvement in the design of the lift strut fork which eliminates the requirements of Piper Service Bulletin No. 157D.

It will be necessary to replace existing wing lift struts with new sealed wing lift struts at a date not to exceed (24) months from the effective date of this Service Bulletin.

COMPLIANCE TIME: Upon reaching (24) months from the effective date of this Service Bulletin or as required by PART I inspection.

INSTRUCTIONS:

1. Prepare the aircraft for the removal of wing lift struts by supporting the wing as necessary.
2. Remove the old wing lift struts.
3. Inspect clamps, hardware, fairleads and jury struts for condition and replace as necessary. Note that the new Piper sealed lift strut assemblies incorporate the latest configuration fork bolt assembly.
4. Refer to the Part Number Supplement on Page 6 of this Service Bulletin to determine the proper wing lift strut part number for the appropriate aircraft.
5. Install, rig, and adjust the new sealed lift strut assemblies as required.
Note: Use appropriate Piper Service Memo and Owners Handbook as required to accomplish proper rigging.
6. Install "No Step" Decal, Piper Part Number 80944-02, on each wing lift strut approximately six (6) inches from the bottom of the struts, or paint the statement "NO STEP" in one (1) inch minimum high letters, in a color which contrasts with the airplane color, on each wing lift strut approximately six (6) inches from the bottom of the struts, and in such a direction that the "No Step" caution can be read when entering and leaving the airplane.
7. Make appropriate logbook entry of compliance with PART II of this Service Bulletin for strut(s) replaced.

MATERIAL REQUIRED: As required by inspection, refer to the Part Number Supplement on Page 6 of this Service Bulletin when ordering the new sealed lift struts; four (4) each per aircraft, "No Step" Decal, Piper Part Number 80944-02.

AVAILABILITY OF PARTS: Your Piper Field Service Facility.

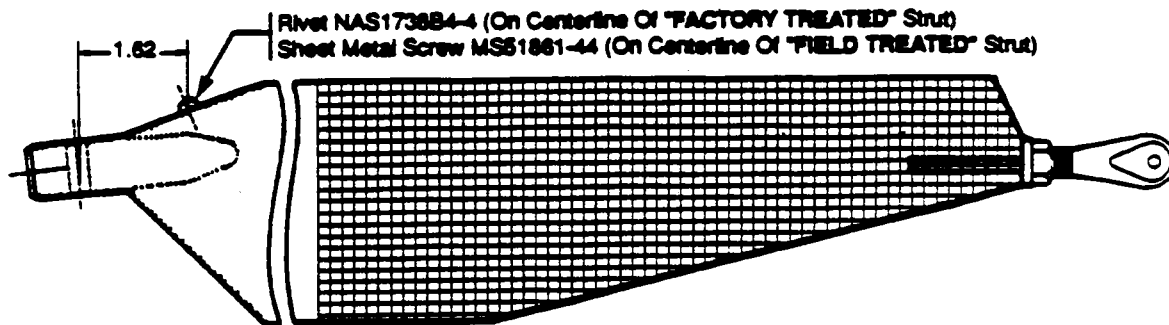
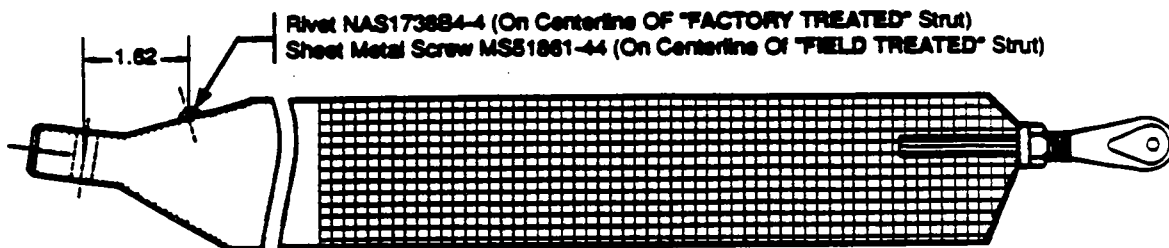
EFFECTIVITY DATE: This Service Bulletin is effective upon receipt.

SUMMARY: There is no factory participation applicable to this Service Bulletin. Special pricing is in effect for the sealed lift struts as listed on the Part Number Supplement sheet on Page 6, for at least 180 days from the effective date of 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.

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 Service
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 surfaces on all wing lift struts.
2. Using a Maule "Fabric Tester" and holding tool normal to strut contour, apply pressure at a scale reading of 80 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 dents are in the metal by carefully removing the paint.
 - a. Lift strut tubes indicating the presence of any perceptible dent in the metal must be replaced with new lift strut assembly before further flight.
 - b. If no dents appear in the metal, the lift strut may be considered airworthy.

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 Federal Specification 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 thoroughly 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"

PART NUMBER SUPPLEMENT

| <u>Model</u> | <u>Serial Number</u> | <u>Part Number</u> | <u>Notes</u> |
|---|----------------------------|-----------------------------|--------------|
| E-2 Series Cub | 11 through 361 | (Note 3) | 1,2,3 |
| J-2 Series, Cub | 500 through 1975 | 85546-2 Rear 85545-2 Fwd | 1,2 1,2 |
| J-3, NE-1, L-4 Cub | ALL | 85548-2 Rear 85547-2 Fwd | 1,2 1,2 |
| J-4 Series Coupe | 4-401 through 4-1649 | 85550-2 Rear 85549-2 Fwd | 1,2 1,2 |
| J-5, J-5C, L-14, AE-1, HE-1 Series Cub Cruiser | 5-1 through 5-1389 | 85553-2 Rear 85552-2 Fwd | 1,2 1,2 |
| PA-11 Series, Cub Special | 11-1 through 11-1678 | 85555-2 Rear 85554-2 Fwd | 1,2 1,2 |
| PA-12 Series, Super Cruiser | 12-1 through 12-4036 | 85553-2 Rear 85552-2 Fwd | 1,2 1,2 |
| PA-14 Series, Family Cruiser | 14-1 through 14-523 | 85553-2 Rear 85552-2 Fwd | 1,2 1,2 |
| PA-15 Vagabond | 15-1 through 15-388 | 85557-2 Rear 85556-2 Fwd | 1,2 1,2 |
| PA-16 Clipper | 16-1 through 16-736 | 85559-2 Rear 85558-2 Fwd | 1,2 1,2 |
| PA-17 Vagabond | 17-1 through 17-215 | 85557-2 Rear 85556-2 Fwd | 1,2 1,2 |
| PA-20 Series, Pacer | 20-1 through 20-1121 | 85559-2 Rear 85560-2 Fwd | 1,2 1,2 |
| PA-22 Series, Tri-Pacer/Colt | 22-1 through 22-9848 | 85559-2 Rear 85560-2 Fwd | 1,2 1,2 |
| PA-25-150 Pawnee | 25-1 through 25-731 | 61046-6 | 2,4 |
| PA-25-235/260 Pawnee | 25-2000 through 25-8156024 | 64038-2 | 2,4 |

NOTES

1. All strut assemblies include forks.
2. Struts come painted with prime coat only.
3. Owners/ operators must call or write Piper Customer Services for quotes on price and delivery date.
4. PA-25 Series lift struts are single piece for each side of aircraft.