



THE DON LUSCOMBE AVIATION HISTORY FOUNDATION

A non-profit group dedicated to preserving the Luscombe Aviation Heritage

FAA APPROVED

Luscombe Silvaire model 8 Aircraft Type Certificate Holder

SERVICE RECOMMENDATION #4

January 22, 1996

Applicability: All Luscombe model 8 series aircraft.

Purpose: To facilitate annual inspection for airworthy condition in Luscombe Silvaire airplane landing gear, both conventional and Silflex style.

Background: NTSB and several owners have reported failure of the main landing gear leg within the 2" area just above the axle weldment (see fig A). Corrosion damage in this area can be exacerbated by loose attachments and fittings to the gear leg which can lead to metal fatigue. The past few years of Luscombe operations have been punctuated by owner/operator reports of rust damage, or in several occasions, complete failure of the lower main gear leg from corrosion just above the axle shaft weld joint. Mechanics in the field have also reported "weld" repairs to gearlegs which are not authorized on Luscombe landing gear.

Condensation within the gear leg lets moisture accumulate in the sealed leg between the axle tube and the first hole up the leg where the brake pulley mounting bolt pierces the assembly, which makes this section particularly susceptible to corrosion.

Time of Compliance: The next annual inspection, or within the next 12 calendar months, whichever comes first, and at intervals not to exceed 12 months thereafter.

Compliance procedure: Remove the gear fairings as necessary to gain access to the lower gear leg area for inspection. Locate the reinforcement patch on the rear side of the gearleg and centerpunch the reinforcement as noted on figure A. Drill the reinforcement and gearleg with a small hole (1/8") in the center of the reinforcement patch area where the upper leg joins the axle, just slightly (1/2") above the axle centerline. This drain hole at the rear of the gear leg will allow any trapped moisture to drain from the leg and minimize corrosion to this area. It will also allow some "drying air" access to the area to keep corrosion to a minimum.

Inspect: Inspect the area and note any water draining, or rust dust/flakes that might come out on the drill or a wire inserted into the hole. Use a small ballpeen hammer and scratch awl or punch to prick the base of the upper gear leg above the weld. If you are able to pierce the tubing, replace the lower leg with a new unit. Legs with no water or rust indicated may be returned to service. If there is any question as to the integrity of the leg, complete items 1-3 below. Treatment in accordance with #3 below is advised. NOTE: Inspect for weld repairs to the gear leg. Weld repairs to the gear leg is not an approved procedure. Components containing weld repairs are considered UNAIRWORTHY and must be removed and replaced because welding destroys the heat treat properties of the part.

1. Remove the lower leg for further inspection.
2. Inspect leg thoroughly. Tapping the lower leg gently with a ball peen hammer at the reinforced area will free rust flakes, dirt, and sediment that may contribute to corrosion. Turning the leg upside down and tapping it on a bench, the loose debris can be removed through the use of gravity. Small amounts of rust debris may be considered normal for an unprotected steel surface in service and should not condemn the gear leg. More than a thimble full of debris should make the gear leg suspect, and additional non destructive tests such as X-ray or ultrasound are indicated prior to returning the leg to service. Absent these tests or other conclusive inspection techniques confirming airworthiness, preventative replacement of the gear leg is indicated. NOTE: Legs showing evidence of corrosion should be inspected, then treated as noted in "preventative action" and reinspected annually for further development of corrosion. If the gear leg is found to have water or rust indicated internally;
3. Clean legs internally with thinner and a wire brush, then protected them with a water resistant epoxy primer MIL spec P23377F or equivalent, and/or washed with an epoxy finish coat (Imron 326, 924, 824, 826 or equivalent) to keep moisture away from the steel internal surface. DLAHF can supply the epoxy primer & finish kits.

DLAHF has adopted a similar specification for a finish wash of all new production gearlegs, and installation of the drainhole on new manufacture of similar parts.

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Special tools and materials: Tools and materials required are a screwdriver & wrench for the fairing removal, a #B1 or 1/8" drill bit, a drill motor, a small wire, a ball peen hammer, and light.

FAA REVIEW The design engineering aspects of this bulletin have been shown to apply to the applicable Federal Aviation Regulations, and are FAA Approved.

Approximate cost:

Labor: 3 man hours

Parts: None required

Supplemental data

It is also suggested that Luscombe owners and operators consult with FAA AC43.13-1A, chapter 6, dedicated to corrosion, and the COMPREHENSIVE LUSCOMBE, a detailed maintenance guide for Luscombe owners.

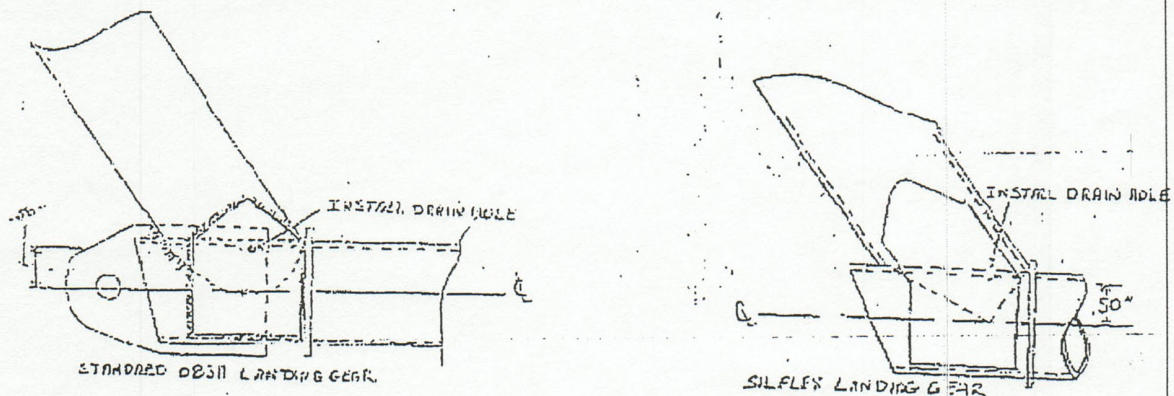


FIGURE A

Maintenance Records

After completion of the inspection of the aircraft gear in accordance with this service recommendation, so note details in the aircraft maintenance records for future reference. If any defects are noted, please complete a malfunction and defect report for filing with the FAA, a copy of this, or description of defects and location including aircraft serial and/or wing serial number, aircraft registration number and owner name should be forwarded to the Luscombe Foundation at Box 63581, Phoenix, AZ 85082.

Sample Maintenance Record Entry

"Installed drain holes in lower landing gear strut in accordance with Luscombe Foundation service recommendation #4. Completed inspection of gear for corrosion and structural defect. (note findings) Notified ATC holder and FAA of any structural defects. Mechanic # date."