Ayres service letter **No. SL-AG-95**

Corporation

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Service Letter No. SL-AG-95
1 April, 1982

MULTIPLE AIRWORTHINESS CERTIFICATION PROCEDURES

MODELS AFFECTED: S2R-T34 S/N T34-053 DC, T34-062 DC and Subsequent (See the last paragraph below.)

REFERENCE: Model S2R-T34 FAA Airplane flight manual supplement No. 2

REASON FOR PUBLICATION:

FAR 21.187 provides rules for multiple airworthiness certification. Multiple airworthiness certification permits Model S2R aircraft to carry both a normal category and a restricted category airworthiness certificate concurrently. The aircraft may operate in either category if this is done in compliance with the operating rules, limitations, and the approved equipment configuration for the particular category.

The purpose of this publication is to provide in the form of a check list, an orderly procedure for changing the subject aircraft from either certification category to the other category.

The FAA airplane flight manual supplement referenced above permits the specifically named aircraft to be operated under FAR 21.187 in the restricted category at gross weights in excess of the maximum weight listed in the model S2R restricted category type data sheet No. A4SW. Up to 8500 pounds gross weight may be used, provided that the never exceed air speed is restricted to 126 mph. This air speed restriction prevents in flight overload damage due to gusts or maneuvers. The maximum landing weight is restricted to 6000 pounds. This provides normal safety margins against landing damage to the airframe.

However, when operating in the restricted category above 6000 pounds gross weight; There is a possibility of landing gear damage during taxi and takeoff operations. This service letter provides an illustrated inspection check list for the landing gear that will structurally clear the aircraft for return to the normal category from the restricted category.

Both category conversions require log book entries by a certificated mechanic with an appropriate airframe rating. Example entries are given herein.

Finally, use of the procedure published in this service letter is predicated upon original certification of the aircraft in the normal category with strict adherence to applicable limitations while being operated in either category.

APPROVAL: FAA Approved

ESTIMATED MAN HOURS: Two (2) Man Hours

PARTS DATA: Parts required to comply with the Service Letter may be purchased through your nearest Ayres Thrush Dealer. Reference this Service Letter, aircraft model, and factory serial number when ordering from Service Letter No. SL-AG-95 kit consisting of the following:

QTY	Part No.	Description
2ea	90042-1	Restricted door placard
1 ea	50175-582	Restricted category instrument panel placard
1 ea	50175-583	Normal category instrument panel placard
1 ea	9051-27	Diesel fuel warning placard
2 ea	9051-42	Normal fuel filler placard
2 ea	9051-43	Restricted fuel filler placard
2 ea	40100-1	(Special) 126 MPH air speed placard
1 ea	40100-2	(Special) Multiple airworthiness placard

NOTE

One kit should be purchased for each “round trip” conversion.

SPECIAL TOOLS: None

ACCOMPLISHMENT INSTRUCTIONS: Part I Conversion for Normal Category to Restricted Category

1 Install the “RESTRICTED” door placards (P/N 90042-1). Center directly below each front door over the yellow trim stripe.

2 Install the “AUTOMOTIVE DIESEL FUEL WARNING” placard (P/N 9051-27) on the glareshield directly in front of the pilot.

3 Install the “RESTRICTED CATEGORY INSTRUMENT PANEL” placard (P/N 50175-582) in place of the “Normal Category Instrument Panel” placard. Center on the right instrument panel on the lower edge.

4 Install the “FUEL FILLER” placards (P/N 9051-43) which permits the use of diesel fuel on each filler opening. Install these placards in place of the Normal Category fuel filler placards that do permit the use of diesel fuel.

5 Install the “126 MPH AIR SPEED RESTRICTION” placard (P/N 40100-1) immediately adjacent to both air speed indicators.

6 Install the “MULTIPLE AIRWORTHINESS” placard (P/N 40100-2) on the hopper directly in front of the pilot.

7 Install any approved dispersal equipment listed in the Type Certificate Data Sheet No. A4SW, Section III, for Model S2R-T34.

RECORD COMPLIANCE: Make an entry in the aircraft permanent records as follows:

Service Letter No. SL-AG-95 dated 1 April 1982, entitled “Part I Conversion from Normal Category to Restricted Category” under the Multiple Airworthiness Certification accomplished (date) _____.

(signature) _____.

(mechanic license number) _____.

ACCOMPLISHMENT INSTRUCTIONS: Part II Conversion for Restricted Category to Normal Category

1 Remove or obscure the “RESTRICTED” door placards (P/N 90042-1) from below each front cockpit door.

2 Install the “NORMAL CATEGORY INSTRUMENT PANEL” placard (P/N 50175-583) in place of the “RESTRICTED CATEGORY INSTRUMENT PANEL” placard. Center on the right instrument panel on the lower edge.

3 Install the “FUEL FILLER” placards(P/N 9051-42) which do not permit the use of diesel fuel on each filler opening. Install these placards over or in place of the RESTRICTED CATEGORY fuel filter placards that permit the use of diesel fuel.

4 Remove or obscure the “126 MPH AIR SPEED RESTRICTION” placard (P/N 40100-1) immediately adjacent to both air speed indicators.

5 Remove the external (quick disconnectable) dispersal equipment components. Also remove the boom hangers.

6 Remove the lower skin panel covering the landing gear cavity which is just aft of the firewall. Remove both side skins from the aft fuselage.

A certificated mechanic with an appropriate airframe rating must conduct the following inspection of the main and tail landing rear areas. Upon satisfactory completion, the mechanic must record compliance in the Log Book entry specified at the end of the Section.

NOTE

The yellow paint used to protect the aircraft from corrosion is an epoxy base paint and has a brittle finish. Cracks in the structural members and clusters normally result in visible cracks in the paint. If cracks in the paint are discovered or any structural distortion is noted, the paint should be removed and a visual and a dye penetrant inspection should be used to evaluate any possible damage. If any damage is found, the necessary repairs should be accomplished and inspected per FAR 43 and AC 43. 13-1A.

NOTE

The main gear should be inspected with wing jacks in place to reveal looseness in the gear attach fittings. The tail gear should also be inspected with the tail wheel off the ground. Jack up the tail wheel using the jack point on the tail wheel trunnion lug which is just forward of the tail wheel.

7. MAIN LANDING GEAR INSPECTION: Gear Legs Left and Right

7-1 Inspect the lower weld cluster (Figure 1, View A) for cracks or distortion. Inspect the weld bend around the torque plate.

7-2 Inspect all tube members in the main gear leg for straightness. An overload in the drag direction usually bends Member X in Figure 1.

7-3 Inspect the weld bends in Figure 1, View B for cracks and inspect the attach lugs for straightness. Rotate the attach bolts with a wrench while applying force to the main wheel. If any looseness is felt or suspected in these bolts, remove them and check the hole bushings for elongation. Install new bolts and bushings, if necessary.

7-4 Inspect the weld beads in Figure 1, View C, for cracks. Check the bolt for looseness.

7-5 Inspect the welding clevis end of the lower tube in Figure 1, View D, for bending or cracks. If Member X is bent, this clevis will also have to bend.

7-6 Inspect the welds on the end plates of the rubber shock assembly in Figure 1, View E. Remember that the ends of this member are always in tension. Inspect the upper attach bolt for looseness.

FUSELAGE ATTACHMENTS: Left and Right

7-7 Inspect the forward gear attach legs for straightness and check all weld beads for cracks. Refer to Figure 2. View F.

7-8 Inspect the aft gear attach lugs for straightness and all weld beads for cracks. Refer to Figure 2, View G. Damage usually occurs to this lug first. Inspect the lower longeron between the forward and aft lugs for straightness.

7-9 Inspect all tube members in the landing gear cavity for straightness, particularly Member Y in Figure 2. This Member Y usually bends first due to overload which is caused by hitting large obstacles with the main wheel.

7-10 Inspect the upper shock strut attach lug for weld cracks and bolt looseness in Figure 2, View H. This lug is in simple tension and most likely would be damaged by hole elongation.

8. TAIL LANDING GEAR INSPECTION: Landing Gear Parts

8-1 Inspect the tail wheel casting for cracks and elongated holes. Refer to Figure 3, View 1. If any looseness is felt with the tail wheel off the ground, remove all bolts and inspect the bolts and bolt holes. Carefully check the arms of the aft lug for cracks.

8-2 Inspect the welds and tubes of the trunnion assembly for damage, Refer to Figure 3, View J. Overloads usually cause cracks in the tubes just forward of the upper clevis. Refer to Figure 3. Check all bolts and bolt holes for damage and elongation. Rebush the holes, if necessary.

8-3 Inspect the upper and lower tail strut lugs for cracks and elongated holes. Refer to Figure 3, View K. Rebush the hole if looseness is found.

FUSELAGE ATTACHMENTS:

8-4 Inspect the tail wheel trunnion attachment lugs for straightness and weld cracks. Refer to Figure 4, View L. Check the welds in the tube cluster just above the lug. Check all of the tubes that join together in this cluster for straightness.

8-5 Inspect the upper shock strut attachment lug. Refer to Figure 4, View M. Check for weld cracks, hole elongation, and straightness of the cross member.

9. TOXIC FUME CHECK: Check to determine if toxic chemicals have contaminated the aircraft to the extent that the toxic fumes would cause a hazard in the cockpit on passenger carrying flights. If necessary, thoroughly wash the aircraft and the hopper with a strong detergent. Repeat this treatment until the fumes and odor are no longer present outside the hopper with the lid closed.

RECORD COMPLIANCE: Make an entry in the aircraft permanent records as follows:

Service Letter No. SL-AG-95 dated 1 April 1982, entitled "Part II Conversion from Restricted Category to Normal Category" under the Multiple Airworthiness Certification accomplished (date) _____.

(signature) _____.

(mechanic license number) _____.

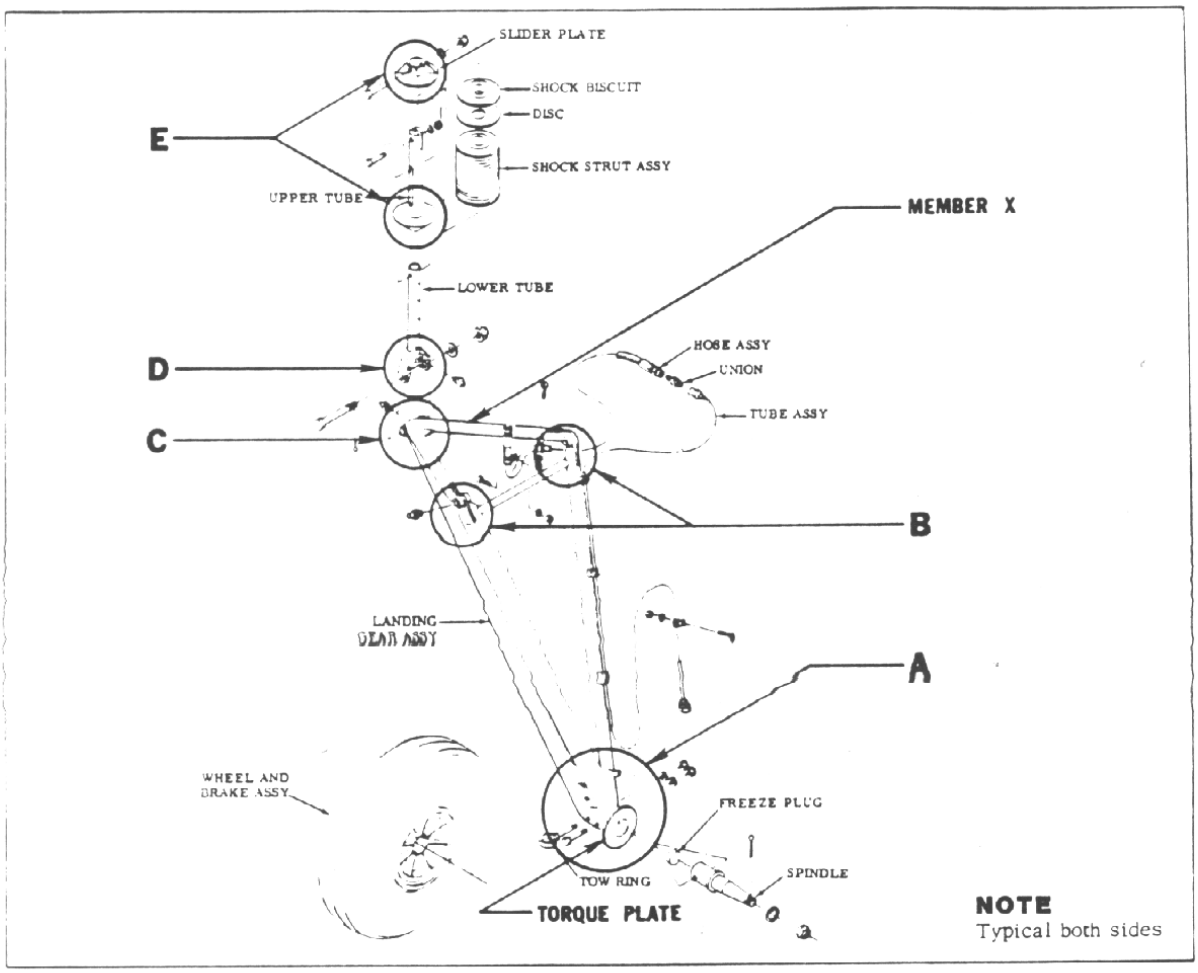

FIGURE 1

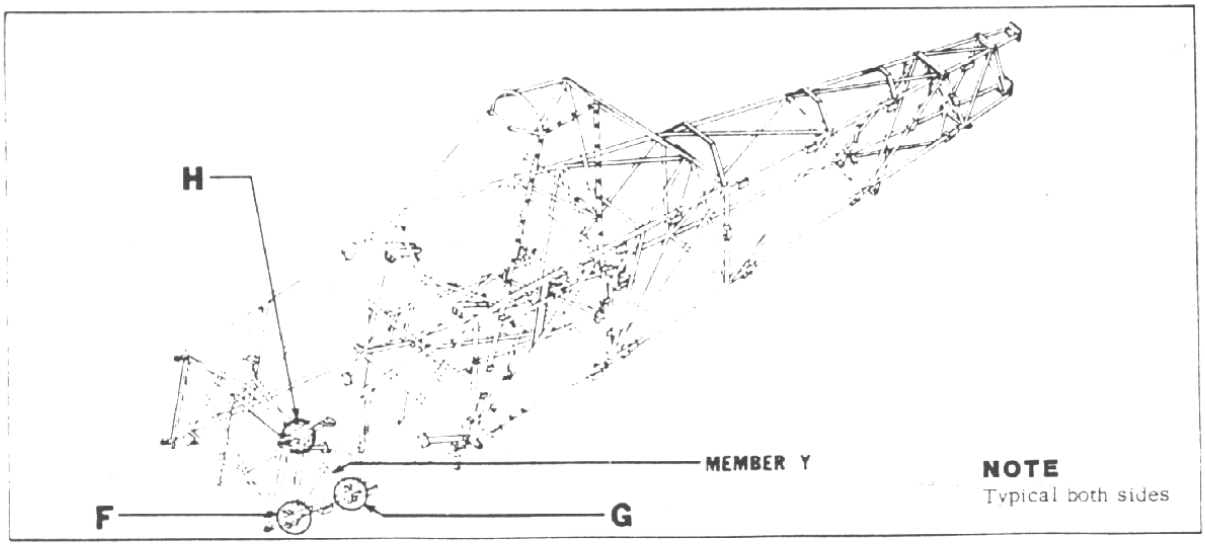

FIGURE 2

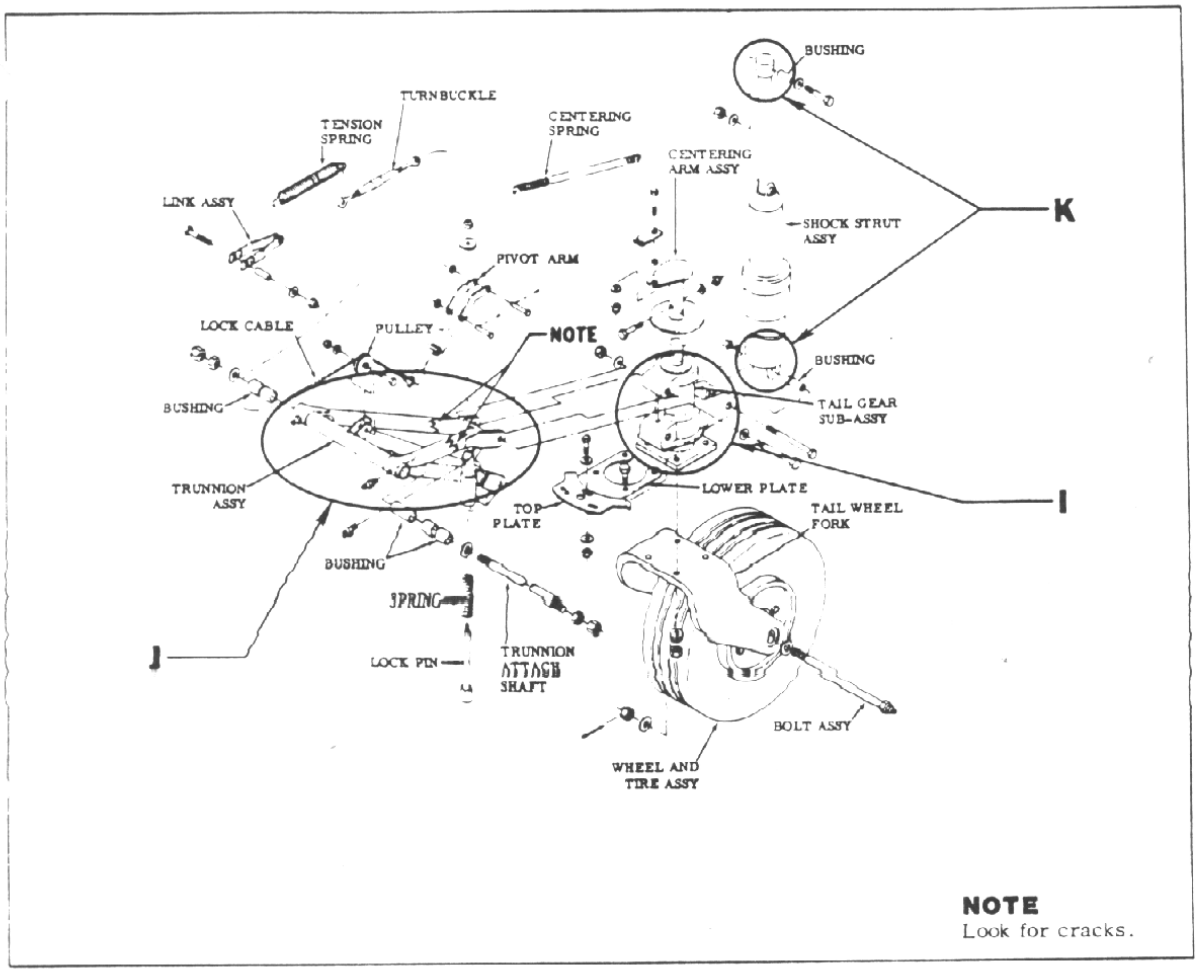

FIGURE 3

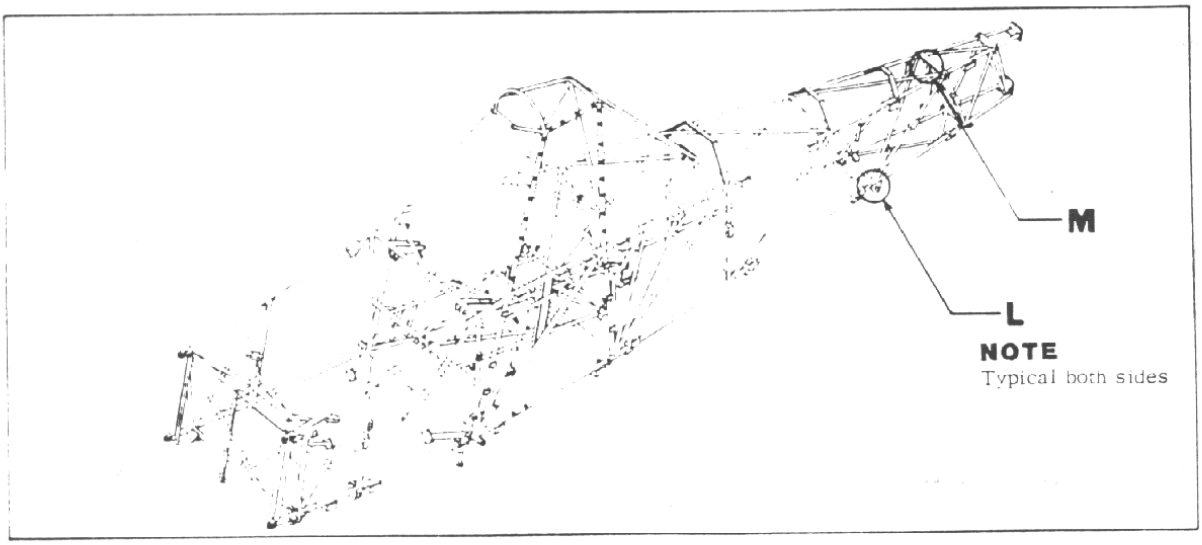

FIGURE 4