Rockwell service letter No. SL-AG-54

International

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MAIN GEAR UPPER SHOCK ATTACH FITTING

APPLICABILITY: ALL S-2R Aircraft, Serial Number 1416R through 1464R.

There has been one case of failure of the fuselage fitting which attaches the main landing gear shock strut. In this particular case the landing was made in rough ground to the side of the landing strip and it is possible that the fitting was overloaded. However, the modification described in this service letter will add strength and will improve the fatigue life of the welded cluster.

Two purposes are served by this modification. The amount of weld area is increased which improves the static strength and the heating of the cluster will provide stress relieving which will improve the fatigue life. Since some of the later model S-2R's already incorporate the additional welding, the first step is to examine the aircraft to determine whether or not the additional welding has already been accomplished by comparing the aircraft to the attached drawing. If the additional welding has already been done, it will be necessary only to heat the weld cluster for stress relieving purposes.

Welding and Stress Relieving Procedure:

1. Fill hopper with water to level above hopper brace tube assembly. The water will help keep the hopper from getting too hot.

2. Hoist the nose of the aircraft until both main wheels clear the ground. Hoisting should be accomplished by placing a heavy chain around the engine crank shaft immediately behind the propeller hub. Heavy padding should be used to avoid chafing the engine nose case or the propeller hub. The chain attachment and the hoist should be capable of supporting at least 6,000 pounds.

3. For added safety install wing jacks or barrels under each wing jack point for protection in case of hoist failure.

4. Remove the L/H and R/H upper forward side skins, spray pump, lower pump mount, hopper vent tube, and all lower landing gear skins and channels. Remove the main fuel vent tube assembly and plug the vent hoses for protection.

5. Install protective heat shields to the hopper and wherever required.

6. Remove the main shock struts and spread gear as much as possible to provide working room. Care should be taken when spreading the gear not to go too far or else the side fuselage skins will be damaged. A small box may be placed under each wheel for support when the gear is spread apart.

7. Remove the paint from the area to be welded using the attached drawing as reference. If heli-arc welding equipment is available, heli-arc weld each main shock attach fitting as shown. Use mild steel rod 3/32 diameter. Then stress relieve the welded area by using a large heating tip and applying heat until the fitting and weld area is just starting to turn red. Care should be taken to assure at all times that the hopper and other surrounding parts are not being overheated.

   If heli-arc welding equipment is not available, gas welding is entirely satisfactory. The welding tip should be .042" and the welding rod should be 3/32 diameter mild steel rod. However, due to the thickness of the parts in the welded area, it is necessary to heat the weld area with a large heating tip to the point that it is just starting to turn red and then quickly change to the welding tip and start the welding process. Thus stress relieving is accomplished beforehand and does not need to be repeated after welding.

8. Immediately after welding (if gas welding is used) or after stress relieving (if heli-arc welding is used) and while the cluster is still hot, the main shock strut should be slipped into place on the upper end and the lower end checked for alignment with the landing gear while the welded area is cooling. This is very important as heating or welding will cause the fitting to pull out of alignment. Using hand pressure on the lower end of the shock strut, bend the upper fitting as required to bring about alignment with the gear.

9. Clean the welded area thoroughly, prime with zinc chromate primer and apply a finish coat of medium chrome yellow EA4-266 activated Copon paint.

10. Re-install main shock struts as called out in the Owner's Manual and install all other parts which had been removed.