

Rockwell service letter

No. SL-AG-39

International

P.O. BOX 3090 ALBANY, GEORGIA 31706-3090 PHONE 229/883-1440 FAX 229/439-9790

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March 16, 1965

FUEL VENT OVERFLOW

APPLICABILITY: ALL S-2C models, S/N 1254C thru 1284C

When the fuel capacity was increased to 100 gallons usable, the existing fuel vent system was not revised. Service has shown that this vent discharges large amounts of fuel overboard when the tanks are topped with cool gasoline and the airplane is left in the sun. This situation arises because of air trapped in the outboard portions of the tanks coupled with the normal expansion of the gasoline.

The modification of this Service Letter consists of an additional vent system which allows the air trapped in the outboard portions of the tank when they are topped, to discharge without building excessive pressures in the tank. The only fuel which will go overboard then is that from the actual expansion of the gasoline in excess in the expansion space provided in the tanks.

Until this modification is installed, do not fill the tank above the $\frac{3}{4}$ gage mark to avoid the overflow mentioned above and the pressurization of the tanks by the existing vents when the engine is not running.

INSTALLATION INSTRUCTIONS:

Note: For safety, all drilling near the drained fuel tanks should be done with a hand drill or air motor. Hold a wet sponge under holes drilled in tank top skin to catch all shavings.

1. See Drawing SK-308 for details of this installation. All items referred to in these instructions are shown on that drawing.
2. Drain fuel tanks.
3. Remove filler cap flange. Vent Assembly, Item 1, can be installed from this hole if you can reach the area satisfactorily. If mechanic's arm is too large, the tank inspection covers aft and outboard may be removed for easy access.

4. On top tank skin, drill a $\frac{1}{4}$ " diameter hole 3" inboard of the outboard tank side rivet line and $1\frac{3}{4}$ " aft of the forward tank side rivet line (which is the main spar rivet line). Move straight forward $5\frac{1}{4}$ " from this hole and drill a $\frac{5}{16}$ " diameter hole in the leading edge skin.
5. Place the Vent Assembly (Item 1) in position and drill #19 diameter holes, four in the tank top skin and four in the leading edge skin, to match the holes in the Vent Assembly flanges.
6. Add zinc chromate paste around the aft vent assembly flange to seal between it and the tank top skin. Take care not to get the paste in the vent hole in the tank top during installation and remove any excess inside tank after installation. Install machine screws, washers and nuts (Items 13, 14 and 15) here and in the forward flange through the leading edge skin. The nuts for the leading edge screws are accessible through the inspection hole on the bottom of the leading edge in that area.
7. Re-install filler flange (and tank inspection covers if removed) using zinc chromate paste to seal.
8. Repeat operation 3 through 7 above on opposite tank.
9. Install Items 3 and 4 through inspection holes on bottom leading edges as shown on SK-308. Nut plate should be up and channel is on left hand side of leading edge rib on both wings.
10. Remove fuselage side panels above the wing. Trim the lower fuselage side panels on each side of airplane for clearance of the hose which will pass through the wing leading edge rib (dust cover) at the root. See the main view and the view looking outboard in the upper left hand corner of SK-208. This can be done without removing the panels.
11. Drill a $\frac{7}{16}$ " diameter hole in each dust cover rib $4\frac{1}{2}$ " forward of the main spar web and 5" up from the bottom of the wing and install grommets (Item 7). See view looking outboard in upper left hand corner of SK-308.
12. Install the Item 5 tubes, leaving a $2\frac{1}{2}$ " sticking out from the grommet in the dust cover rib.
13. Install hoses (Item 8) using clamps (Item 11). Push hoses up against the grommets in Items 3 and 4 and tighten clamp. Check the $2\frac{1}{2}$ " overhang of the dust cover rib grommet.
14. Install the Vent Assembly (Item 2) as shown in the main view and Section A of SK-308, using Items 17 and 21. Position vent as high as possible with Item 17 clamps against gear attach gussets.
15. Install hoses (item 9) as shown in main view of SK-308. Push lower end of hoses up tight against grommets in dust cover rib while holding hoses (Item 8) tight against grommets Item 3 and 4.

16. Drill 3/16" diameter hole for Item 18 and opening for Item 22 in lower side skin below wing on left hand side as shown in Detail "B" of SK-308.
17. Install Item 22 grommet in opening mentioned in Step 16 above.
18. Remove the root fairing strip on the inboard edges of the gas tank (L.H. only) so the lower side can be pulled back for access. Install Item 6 tube as shown in main view of SK-308 using Item 12 and Item 17 clamps. Put 2 washers between side skin and clamp when installing the lower Item 17 clamps.
19. Replace all skin panels.
20. Go to the existing fuel vent overboard line which is the 1/2" O.D. tube protruding from lower skin on the left side between the landing gear legs. File a 45° cut facing forward on the end of this tube as shown in the sketch at right. Also drill a 1/16" diameter hole in the aft wall only of this tube 1" up from the lower end.

