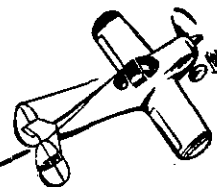


Ercoupe **MEMORANDUM**

**ERCOUPE
SERVICE
MEMORANDUM**

No. 33

SUBJECT: Repair of Aluminum Fuel Tanks



1. The purpose of this memorandum is to describe a method of repair for aluminum fuel tanks, seam leakage or seepage.

2. The method of removal of the wing and fuselage tanks is outlined below and varies for the two types of tanks. The method of repair, however, is common to both types.

A. Removal of the fuselage fuel tank.

1. Disconnect or adjust, as indicated below, the following controls to permit removal of fuselage tank.

- a. Disconnect control and carburetor heat control—at engine.
- b. Disconnect brake cable at lever arm (on firewall) and loosen cable housing clamps (on firewall). Remove locknut on cable handle housing assembly (forward side of instrument panel). Move handle assembly rearward until it clears instrument panel. Allow cable housing to hang free between instrument panel and cable housing clamps.
- c. Disconnect throttle control cable—at carburetor and loosen set screw on the throttle control support at rear end of engine accessory section to permit movement of cable through firewall.
- d. Remove both control wheels by disconnecting wheel shaft at universal joints and removing control stop collars. The components of each assembly should be retained as groups to facilitate reassembly. Taper pin removal is accomplished by turning with "vise grip" pliers after removing nut.

2. Drain fuselage fuel tank.

- a. Turn gas valve to "off" position.
- b. Open left side engine cowling.
- c. Disconnect gas line at filter bowl (remove clamp from hose).
- d. Drain gas through hose by opening the valve.

3. Remove tank.

- a. Disconnect gas lines at tank fittings.
- b. Remove filler cap and gage assembly.
- c. Remove the screws that secure each end of the tank mounting bracket to Frame "B".
- d. Place control column in full forward position.
- e. Rotate tank, dropping right side and moving tank downward through opening between control column and instrument panel. Exercise care to avoid striking the tank against the universal joints on the control column and the engine controls or the instrument panel to prevent damaging the tank.

B. Removal of wing tanks.

1. Remove drain plug from bottom of tank.
2. Remove foot rest (inclined floor board) and floor board.
3. Remove leading edge wing fillets.
4. Remove leading edge Fairing Assembly outer panel connection.
5. Disconnect fuel lines to tank being removed.
6. Remove screws that secure the tank to the center section front spar cap strip and slide tank off.

C. Repair.

1. Preparation after removal of tank, thoroughly cleanse and decontaminate same either by use of steam line (for approximately 2 hours) or by hot water rinse followed by blowing out with air and rinsing with 2 quarts of carbon tetrachloride.
2. Examine any known leakage areas and re-draw or drill out and replace any loose rivets. (Note: Rivets will have work-hardened and redrawing should be done with utmost caution.)

D. Sloshing.

1. Sloshing of tanks should be accomplished with a solution of equal parts of EC570 and ethyl-dichloride. About one pint of this solution is ample for sloshing one tank. EC570 is a product of the Minnesota Mining and Mfg. Co. and if not available locally, can be procured through the Ercoupe Distributor-Dealer Organization.
2. The above solution should be poured into the tank in such a manner that the solution will fall into a seam.
3. The tank should be rotated and moved in such a manner that all seam areas will be covered by the solution during the sloshing

operation. It is not necessary or desirable to cover the remaining surfaces of the tank with the solution.

4. Pour out surplus solution and allow tank to dry for seventy-two hours. During this period, the tank must be left absolutely empty.

E. Testing.

1. After tank is thoroughly dry, close openings and apply air pressure, not to exceed $1\frac{3}{4}$ pounds, to the interior of the tank. While tank is under pressure, test for leaks either by immersion or use of a soapy water solution around the seams.
2. After testing, reinstall tank.