

THIS SERVICE BULLETIN IS FAA APPROVED FOR ENGINEERING DESIGN

SERVICE BULLETIN M20-258
ISSUE DATE: 1 JULY, 1995

SUBJECT: MOONEY M20R FUEL SYSTEM, SUPPLY AND RETURN LINE, RETROFIT

MODELS/S/N AFFECTED: M20R, S/N 29-0001 THRU 29-0068

TIME OF
COMPLIANCE: AT OWNERS OPTION, WITHIN NEXT 50 OPERATING HOURS OR AT NEXT
SCHEDULED MAINTENANCE ACTION.

INTRODUCTION:

CURRENT PRODUCTION CONFIGURATION OF THE FUEL SUPPLY TUBE ASSEMBLY AND THE FUEL/VAPOR RETURN TUBE ASSEMBLY ARE MULTIPLE TUBE CONFIGURATIONS AND CONTAIN A JOINT WHERE EACH LINE PASSES THROUGH THE FIREWALL. TO AVOID THE POSSIBILITY OF A LEAK DEVELOPING, EACH OF THESE LINES HAVE BEEN CHANGED TO A SINGLE TUBE ASSEMBLY, WITH NO JOINT, BETWEEN THE FLEX LINES IN THE ENGINE COMPARTMENT AND THE COMPONENT EACH LINE CONNECTS TO UNDER THE FLOORBOARD. SOME EXISTING CONFIGURATION COMPONENTS WILL BE REMOVED AND DISCARDED AND SOME COMPONENTS WILL BE REUSED FOR THE NEW CONFIGURATION.

INSTRUCTIONS:

1. Remove upper and lower cowling in accordance with M20R S & M Manual, Section 71-10-00.
2. Remove LH & RH tailpipe hangers from firewall/exhaust cavity area.
3. Remove LH & RH exhaust cavities (screws located around outside edges).
4. Disconnect SCAT tube from alternate air door assembly (upper clamp & tube).
5. If desired, other drain tubes or miscellaneous components may be temporarily moved or disconnected from their normal attachments to allow removal of old fuel tube assemblies and installation of new fuel tube assemblies.

— **Removal of Fuel Supply Lines (RH side)** (see Fig. SB 258-1) —

6. Disconnect flex hose, P/N 156F001-6D-0220 from fuel supply tube assembly, 610195-9, at bracket, 610194-1.
7. Disconnect fuel supply tube assembly, 610195-7 from firewall bulkhead fitting end of tube assembly, 610195-9 (aft of firewall).
8. Disconnect nut and washer, AN924-6 and AN960-916, at tube assembly bulkhead fitting, from bracket, 610194-1. Temporary removal of bracket will prevent distortion of new line assembly during installation.
9. Disconnect nut, AN924-6, and washer, AN960-916, from bulkhead end of 610195-9 tube assembly (fwd side of firewall).
10. Tube assembly, 610195-9, can now be removed from aircraft.
11. Disconnect nut of tube assembly 610195-7, from elbow, MS51528B6, on auxiliary fuel pump.
12. Remove tube assembly, 610195-7, from aircraft.

— **Removal of Fuel/Fuel Vapor Return Lines (LH side)** — (see Fig. SB 258-1)

13. Disconnect flex hose, P/N 156F001-4S-0220, from fuel/fuel vapor return tube assembly, 610195-11, at bracket, 610194-3.
14. Disconnect fuel/fuel vapor return tube assembly, 610195-25 from the firewall bulkhead fitting end of tube assembly, 610195-11 (aft of firewall).
15. Disconnect nut and washer, AN924-4 and AN960-716, at tube assembly bulkhead fitting, from bracket, 610194-3. Temporary removal of bracket will prevent distortion of new line assembly during installation.
16. Disconnect nut, AN924-4, and washer, AN960-716, at bulkhead fitting end of 610195-11 tube assembly (fwd side of firewall). Tube assembly, 610195-11, can now be removed from aircraft.
17. Disconnect nut of tube assembly, 610195-25, from in line AN815-4D union
18. Disconnect 610256-13 tube assembly from union in 610289-5 selector valve. Leave AN815-4D union attached to selector valve.
19. Remove MS21919WDG clamps and hardware (2 places) from 610195-25 and 610256-13 tube assemblies.
20. Tube assemblies, 610195-25 and 610256-13 (with 1 union attached), can now be removed from aircraft.

— **AIRFRAME MODIFICATION ACTION** —

21. Enlarge hole in firewall where fuel supply line passes through to .813 inch dia. (see Fig. SB 258-2). A rotary file or tapered reamer is recommended. — **CAUTION** — Tubular structure is adjacent to area in work.
22. Drill two (2) holes, .193 inch dia., above enlarged hole for bolts to attach new fuel supply line firewall flange/seal assembly (see Fig. SB 258-2 for location dimensions).
23. Enlarge hole in firewall where fuel/fuel vapor return line passes through to .688 inches. (see Fig. SB 258-2).
24. Drill two (2) holes, .193 inch dia., above enlarged hole for bolts to attach new fuel/fuel vapor return line firewall flange/seal assembly (see Fig. SB 258-2 for location dimensions). **DEBURR ALL HOLES.**

— **Installation of NEW Fuel Supply Line (RH side) (see Fig. SB 258-3)** —

25. Carefully thread new, one piece, fuel supply line, 610198-501, through enlarged firewall hole until aft end lines up with elbow, MS51528B6, on auxiliary fuel pump; elbow may require slight repositioning to align with tube assembly. Firewall flange/seal assembly can be slid into position to attach to firewall.

NOTE

Coat mating surfaces of firewall and flange/seal assembly and fuel line (inside firewall pass through sleeve) on each new tube assembly with PRO-SEAL 700 before installing attachment bolts, washers and nuts.

26. Attach tube assembly nut to auxiliary fuel pump elbow; do not tighten at this time.
27. Attach 610198-501 tube assembly to 610194-1, bracket with AN960-916 washer and AN924-6 nut; reattach bracket to footwell.
28. Attach tube assembly flange/seal assy. (coated with ProSeal 700) to firewall with (2) AN3-4A bolts, (4) AN960-10 washers, and (2) MS21042-3 nuts.
29. Tighten tube nut at auxiliary fuel pump elbow and the two nuts on bolts at firewall flange/seal assy.
30. Position and tighten nut on flex hose, 156F001-6D-0220, to new 610198-501 tube assembly bulkhead fitting at 610194-1 bracket.

— **Installation of NEW Fuel/Fuel Vapor Return Line (LH side) (see Fig. SB 258-3)** —

31. Carefully thread new, one piece, fuel/fuel vapor return line, 610198-503, through enlarged firewall hole until aft end lines up with port on fuel selector valve, 610289-5. Firewall flange/seal assembly can be slid into position to attach to firewall.
32. Attach tube assembly nut to fuel selector valve; do not tighten at this time.
33. Attach 610198-503 tube assembly to 610194-3, bracket with AN960-716 washer and AN924-4 nut; reattach bracket to footwell.
34. Attach tube assembly flange/seal assy. (coated with ProSeal 700) to firewall with two (2) AN3-4A bolts, (4) AN960-10 washers, and (2) MS21042-3 nuts.
35. Tighten tube nut at fuel selector valve and the two nuts on bolts at firewall flange/seal assy.
36. Position and tighten nut on flex hose, 156F001-4S-0220, to new 610198-503 tube assembly bulkhead fitting at 610194-3 bracket.
37. Position one (1) MS21919WDG5 clamp on tube assembly (aft position) and MS21919WDG8 clamp on tubular structure. Secure with AN3-4A bolt, AN960-10 washer (2 each), and MS21042-3 nut (see Fig. SB 258-3).
38. Position the other MS21919WDG5 clamp on tube assembly (fwd location) and MS21919WDG10 clamp on tubular structure. Secure with AN3-10A bolt, AN960-10 washer (2 each), 914019-3 bushing, and MS21042-3 nut (see Fig. SB 258-3).

— **Finalization & Completion of Retrofit Procedures** —

39. Check clearance of new lines to rudder torque tube and brake master cylinders through full deflection of controls and brake travel.
40. Loosen fuel supply line connection at engine driven pump inlet. Flush fuel supply line by turning auxiliary fuel pump ON.
41. When all fuel lines have been tightened securely, turn auxiliary boost pump ON (Mixture Control in idle cut-off) and check for leaks at all new & reconnected connections. It is recommended that the entire fuel system be leak checked.
42. Reconnect all components removed or disconnected, IE. alternate air SCAT tube & clamp and any other drain line(s) temporarily repositioned during the retrofit procedures.

43. Reinstall LH & RH exhaust cavities. Reseal front portion of exhaust cavities at firewall with ProSeal 700.
44. Reinstall LH & RH exhaust tailpipe hangers. Verify tailpipe clamps are secure on tailpipe and that no interference exists between tailpipe and fuselage or cowling.
45. Reinstall LWR and UPPER cowling per M20R S & M anual, Section 71-11-00.
46. Enter compliance note into aircraft log book and return aircraft to service.

WARRANTY: Mooney Aircraft Corporation will provide credit for up to 4.0 hours labor to the Mooney Service Center accomplishing the retrofit procedures stated in this Service Bulletin when warranty claims are received by Mooney Service Parts within 180 days of the date of this Service Bulletin. The retrofit kit, listed below, will be provided to the Mooney Service Centers in accordance with standard Mooney Warranty Policies.

REFERENCE DATA: N/A

PARTS LIST: KIT PART NUMBER — SB M20-258-1

ITEM	P/N	DESCRIPTION	QTY
1	610198-501	TUBE ASSEMBLY, FUEL SUPPLY	1
2	610198-503	TUBE ASSEMBLY, FUEL/FUEL VAPOR RETURN	1
3	AN3-4A	BOLT	6
4	AN3-10A	BOLT	1
5	AN960-10	WASHER	10
6	MS21042-3	NUT	7
7	914019-3	BUSHING (@FWD CLAMP LOCATION)	1
8	MS21919WDG8	CLAMP (AFT LOCATION TUBULAR STRUCTURE)	1
9	MS21919WDG5	CLAMP (RETURN LINE CLAMPS)	2
10	MS21919WDG10	CLAMP (FWD LOCATION TUBULAR STRUCTURE)	1

FIGURES/TABLES:SEE FOLLOWING FIGURES



