

**SUBJECT: COWL FLAP MODIFICATION, MOONEY M20K**

MODELS/S/N's AFFECTED: Mooney M20K, S/N 25-0001 thru 25-0774.

TIME OF COMPLIANCE: At owner's discretion.

INTRODUCTION: Modified cowl flaps and hinge assemblies have been developed to provide better aircraft performance and reduce maintenance on M20K aircraft.

INSTRUCTIONS:

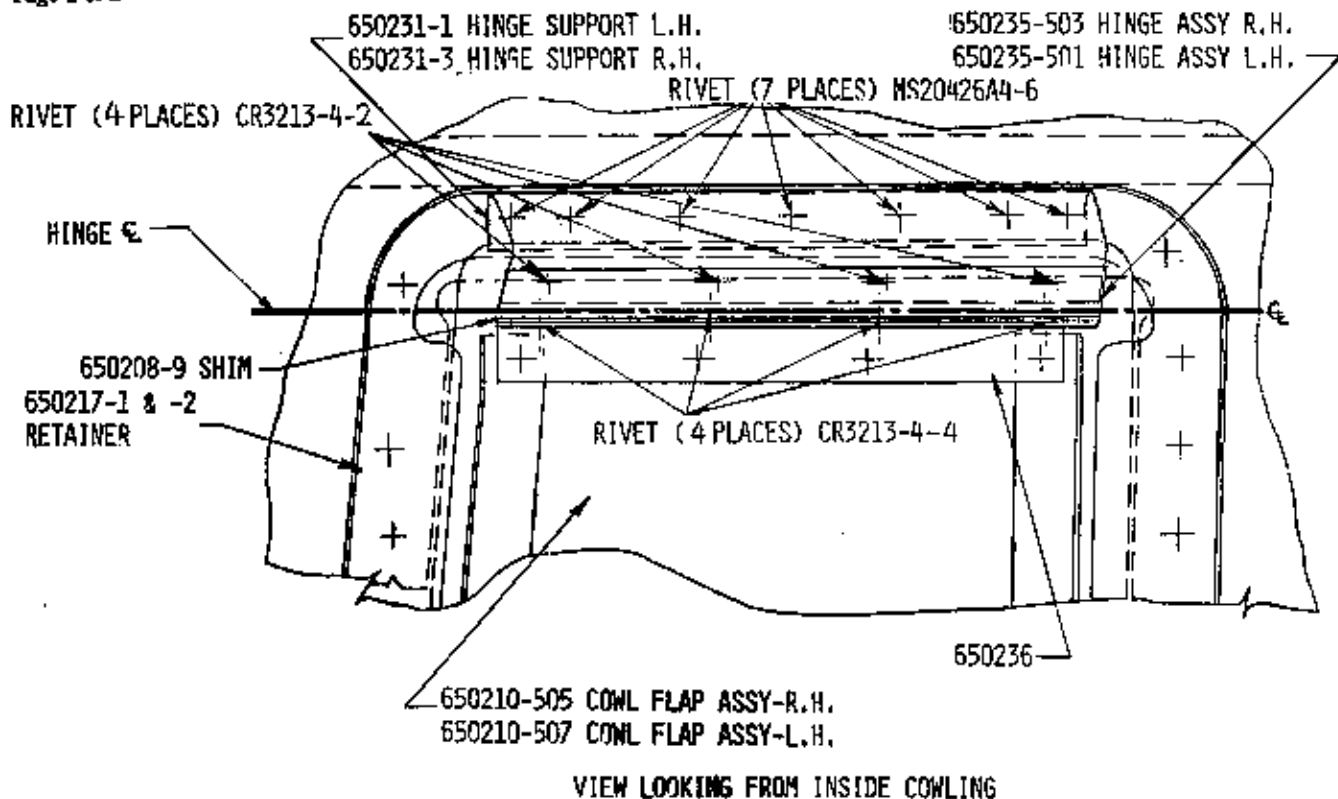
1. Remove upper and lower cowling per Service and Maintenance Manual.
2. Remove existing cowl flaps, right hand and left hand from lower cowling. Drill out hinge bracket rivets and remove hinge brackets.
3. Drill out the 5 rivets at front end of each existing retainer, P/N 650217-1 and -2. Deburr area.
4. Position new hinge support left hand and right hand, P/N 650231-1 and -3 to cowl and cleco thru holes opened in step 3. Cleco hinge assemblies 650235-501 and -503 to 650231-1 and -3 supports thru match drilled holes. (See Figure 2).
5. Position new cowl flap assemblies; 650210-505 and 507; with hinges installed in step 4. Fit 650208-009 shim between hinge and hinge retainer on cowl flap and clamp together. Adjust flap so that it operates freely. Check edge distance between 650236-1 and 3 and 650235-501 and 503. Drill (4) No. 30 (.128) holes into hinge using 650236 retainers as a guide. Cleco together and check operation.
6. When step 5 is complete disassemble all parts except 650231-1 and -3. Using 650231-1 and -3 as a guide drill (2) additional No. 30 (.128) holes thru 650217 retainers and cowling. These holes cannot be back drilled due to interference of the hinge support bracket. Use a hole alignment tool to drill with or measure carefully.
7. Reassemble and check freedom of operation again at this point. Remove hinge pin from 650235-501 and 503 hinge assembly or clecos and separate components. This should provide access to install rivets required to secure the 650231 support to the cowling, the hinge half to 650231 support and the hinge half to the cowl flap support, 650236. See Figure 2 for rivet callouts.
8. After all rivets are installed, reinstall the hinge pin to both cowl flaps and secure with new cotter pins, MS24665-103.
9. Check freedom of operation of both cowl flaps.
10. Install lower and upper cowling to aircraft. Connect all electrical connections and mechanical linkages.
11. Check operation of cowl flaps using cowl flap controls. Check proper rigging of cowl flaps. (Reference M20K Service and Maintenance Manual, pg. 3-10, para. 3-14). Adjust as needed to obtain proper fit and operation.
12. Enter compliance note into Aircraft Log Book and return aircraft to service.

REFERENCE DATA: Mooney M20K Service and Maintenance Manual.

PARTS LIST: Kit S120-068-001

	QTY	PART NO.	DESCRIPTION
1)	1	650210-505	Cowl Flap Assy, R.H.
2)	1	650210-507	Cowl Flap Assy, L.H.
3)	1	650231-001	Hinge Support, L.H.
4)	1	650231-003	Hinge Support, R.H.
5)	2	650208-009	Shim
6)	1	650235-501	Hinge Assy, L.H.
7)	1	650235-503	Hinge Assy, R.H.
8)	4	MS24665-103	Cotter Pin
9)	8	CR3213-4-4	Rivet, Blind
10)	8	CR3213-4-2	Rivet, Blind
11)	14	MS20426A4-6	Rivet

FIGURES/TABLE: See attached Figures No. 1 and No. 2.



S.I. M 20-68B
DATE: 9-15-84

FIGURE 1

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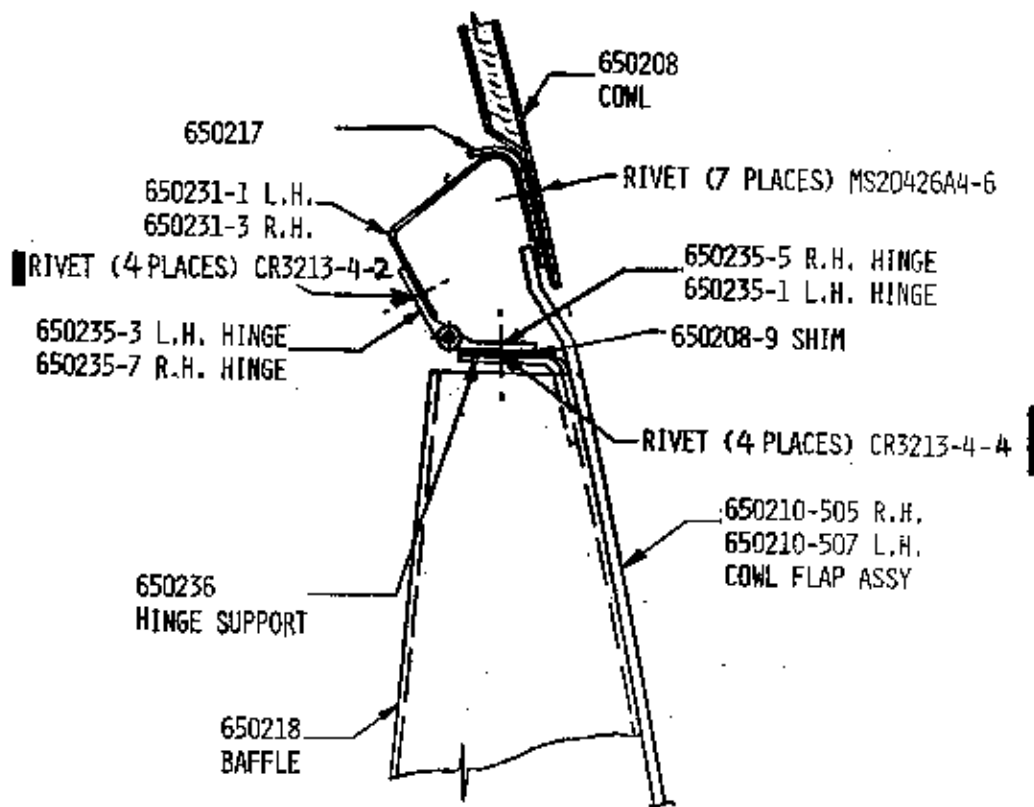


FIGURE 2