

SERVICE BULLETIN

SUBJECT: MOONEY M20J (201) COWL FLAP HINGE MODIFICATION

MODELS/S/N  
AFFECTED: Mooney M20J (201) S/N 24-0001 thru 24-1546

TIME OF  
COMPLIANCE: At owner's discretion or at next scheduled maintenance.

INTRODUCTION: Reports have been received concerning the wear and need for replacement of cowl flap hinge components on several M20J aircraft. The following instructions describe the procedures to modify any above serial numbered aircraft to a new configuration which will improve this condition.

- INSTRUCTIONS:
1. Remove top and bottom cowling per Service & Maintenance Manual.
  2. Hold each cowl flap closed and mark both cowl flaps and cowling laterally for repositioning during installation of the new hinge assys. Remove cowl flaps from cowling.
  3. L.H. cowl flap assy, P/N 650176-501 - Remove the MS 21047L3 nut plate from inboard baffle, 650195-1.  
NOTE: Countersink all holes on lower flange; doubler must lay flat on dimpled area. Locate doubler, P/N 650195-5, per Figure M20-231-1(A) and drill holes to match in doubler, baffle and flange. Install doubler using MS 20426AD4 rivets. Install new nut plate, MS 21047L3, using MS 20426AD3-5 rivets. Inspect cowl flap to see that there are also doublers at aft end of each baffle. There should be a doubler, P/N 650195-3, on the inboard baffle and, P/N 650196-3, doubler on outboard baffle, 650196-001, refer to Figure M20-231-2(A), (B), and (C). If not installed, order Opt. Kit SB M20-231-002.
  4. R.H. cowl flap assy, P/N 650197-502 - Remove the MS 21047L3 nut plate from inboard baffle. Locate, P/N 650195-6, doubler per Figure M20-231-1(B) & drill holes to match in doubler, baffle and flange. Install doubler using MS 20426AD4 rivets. Install new nut plate, MS 21047L3, using MS 20426AD3-5 rivets. Inspect cowl flap to see that the doubler, P/N 650196-4, is installed on aft end of outboard baffle, 650196-2, refer to Figure M20-231-3(A) & (B). If not installed, order Opt. Kit SB M20-231-002.
  5. Rework lower cowl assy, 650180, to modify the cowl flap hinge assy by drilling out three (3) rivets from each old hinge bracket, P/N 650193 and 650198 (four (4) hinge brackets total). Drill twelve (12) additional rivets from the retainers P/N 650194-1 and -2, (three (3) at each new hinge bracket location), refer to Figure M20-231-4
  6. Assemble the four new hinge assy brackets, P/N 650177-501 and 650178-501 to the left hand cowl flap and P/N 650177-502 and 650178-502 to the right hand cowl flap using the new hardware and bushings provided with the kit, ref. Figure M20-231-5.

Instructions: (Cont'd)

NOTE

It is necessary to align the hinge pivot points exactly on Sta. -17.375 (the same as existing pivot point) when installing four (4) new hinge assy brackets.

7. Clamp or temporarily secure the hinge bracket/cowl flap assys to cowling. Use alignment marks made earlier on cowl flaps and cowling. Check travel of cowl flaps for any interference or binding.
8. Mark and drill holes in new hinge assy brackets, using holes in cowling, when fit is determined to be proper. Drill holes for No. 4 rivets.
9. Install brackets to cowling retainer with MS 20426AD4 rivets, six (6) holes on each hinge assembly bracket, refer to Figure M20- 231-4.
10. Check cowl flaps for travel and interference. Trim cowl flap carefully if needed to allow for nonbinding travel throughout full open to closed positions.
11. Tighten pivot bolts down snug against bushing, 914020-001. This will allow bushing to rotate inside hinge bushing. Make certain at least (2) threads are protruding thru nut plates.
12. Reinstall cowling per Service & Maintenance Manual.

REFERENCE

DATA: Mooney M20J Service and Maintenance Manual.

PARTS LIST: Kit Part Number SB M20- 231-001

	<u>Part Number</u>	<u>Description</u>	<u>Quantity</u>
1)	650195-5	Doubler	1
2)	650195-6	Doubler	1
3)	650177-501	Hinge Assy Bracket	1
4)	650177-502	Hinge Assy Bracket	1
5)	650178-501	Hinge Assy Bracket	1
6)	650178-502	Hinge Assy Bracket	1
7)	AN3-7A	Bolt	4
8)	AN960-10	Washer	8
9)	NOT USED	---	---
10)	914020-001	Bushing	4
11)	MS 21047L3	Nut Plate	2
12)	MS 20426AD4-6	Rivet	20
13)	MS 20426AD3-5	Rivet	4
14)	MS 20426AD4-5	Rivet	18

Parts List: (Cont'd)

Optional Kit P/N SB M20-231-002

	<u>Part Number</u>	<u>Description</u>	<u>Quantity</u>
1)	650195-003	Doubler	1
2)	650196-003	Doubler	1
3)	650196-004	Doubler	1
4)	MS 20426AD4-5	Rivet	16
5)	MS 20426AD4-6	Rivet	9

FIGURES/TABLES:

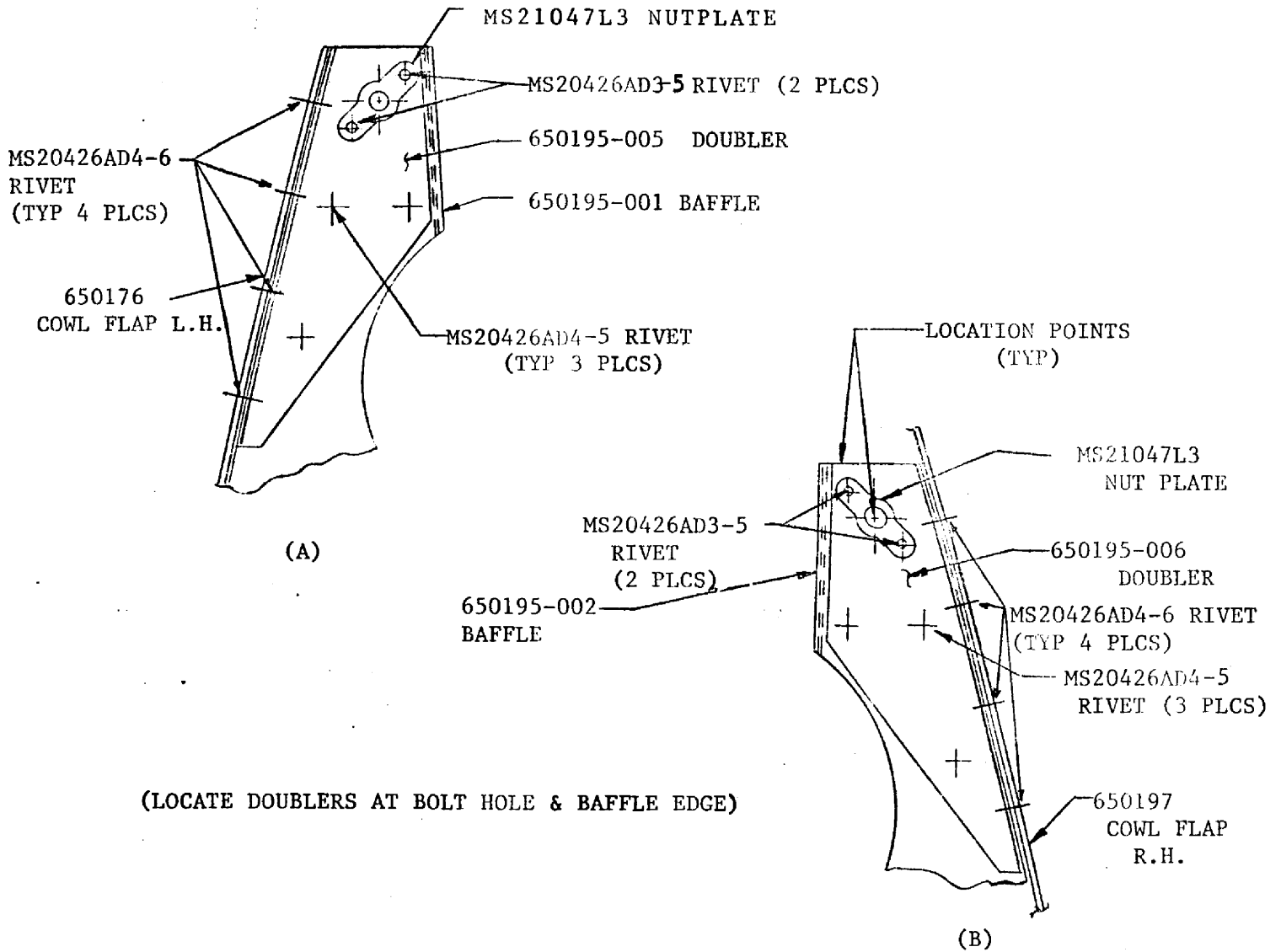


FIGURE M20-231-1

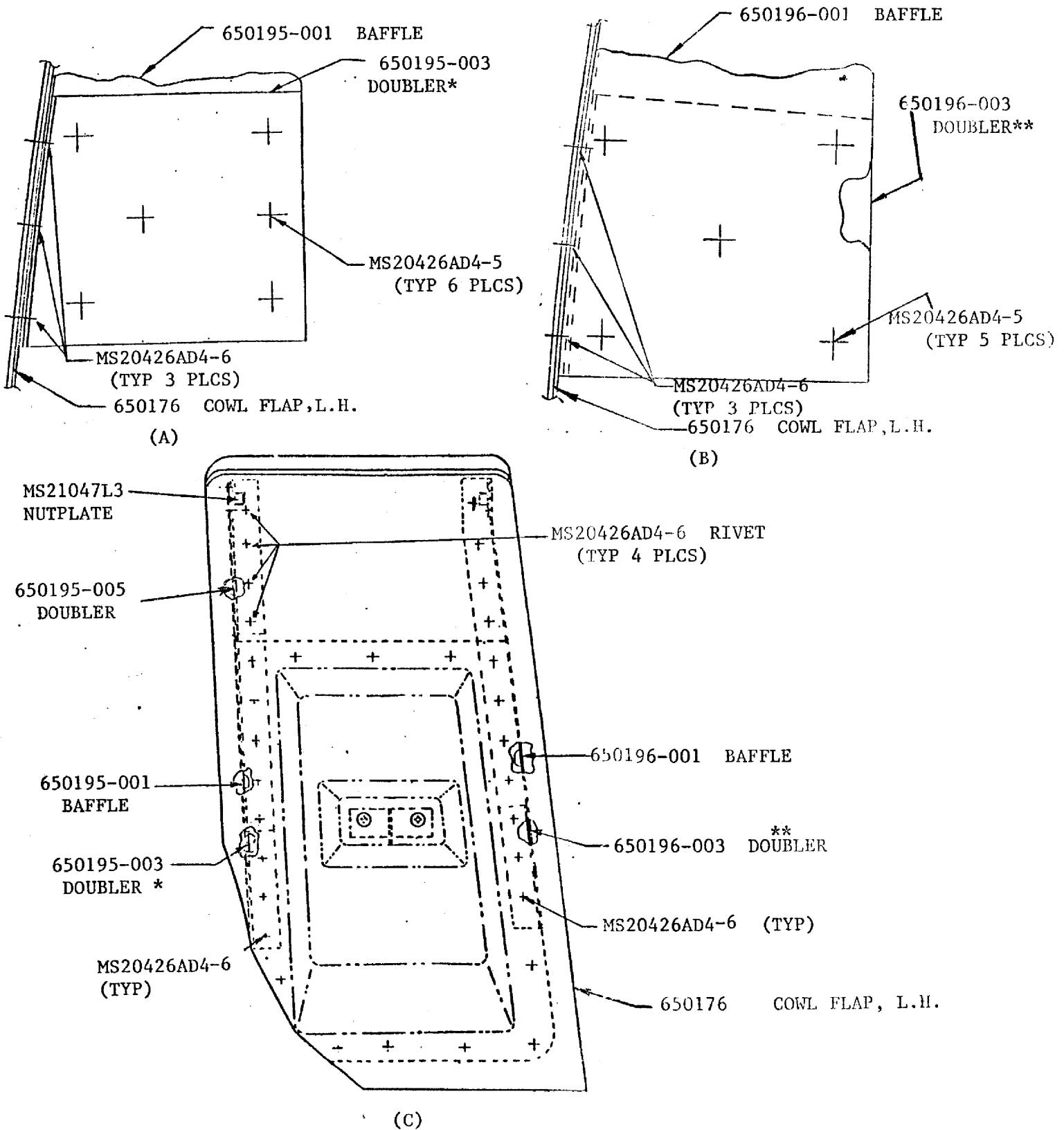
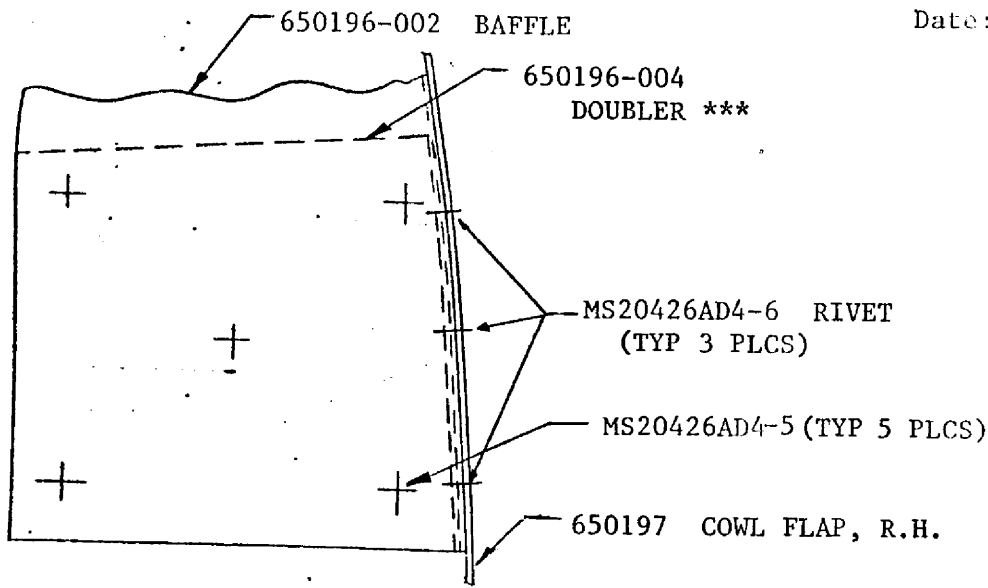
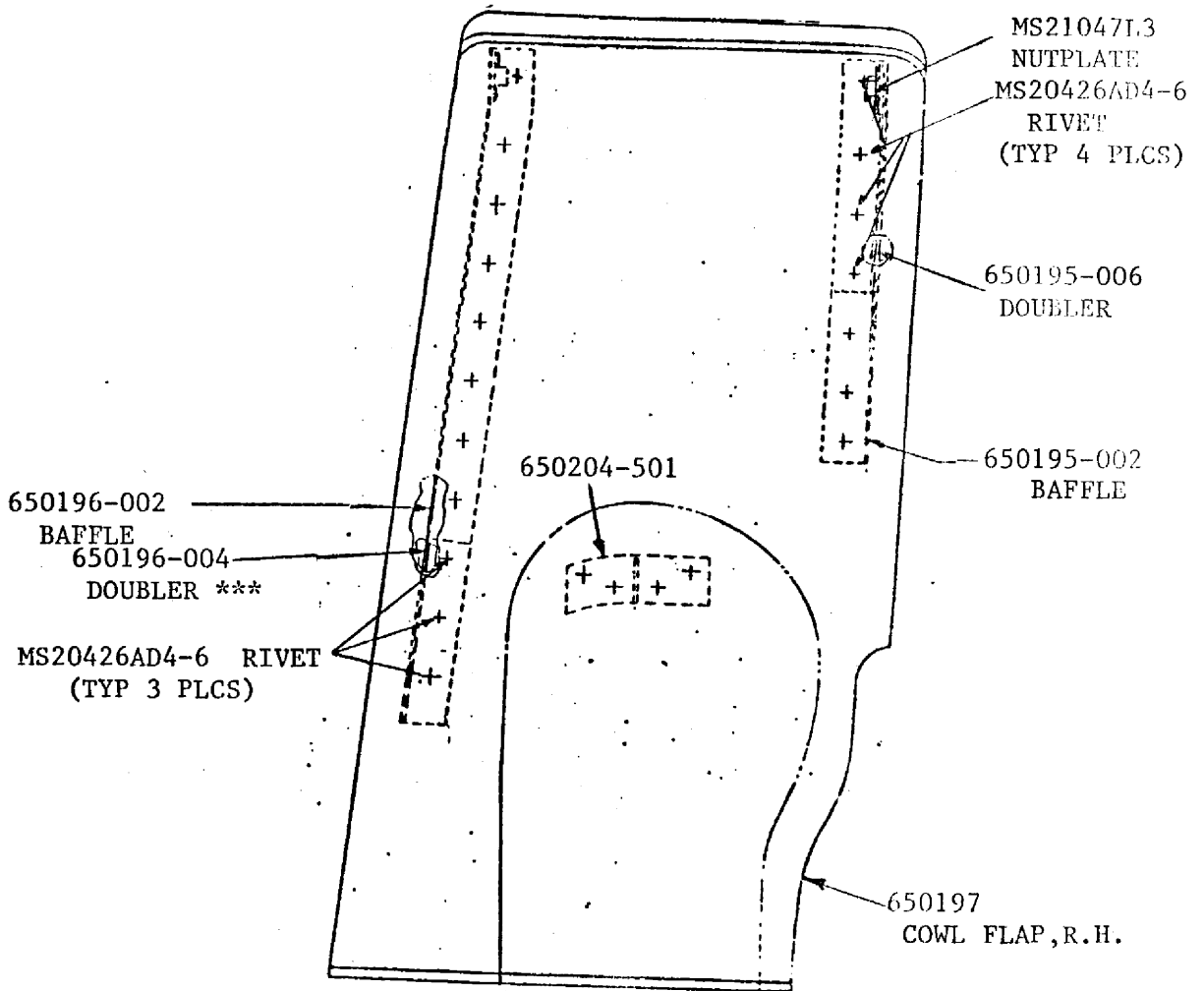


FIGURE M20-231-2



(A)



(B)

FIGURE M20- 231-3

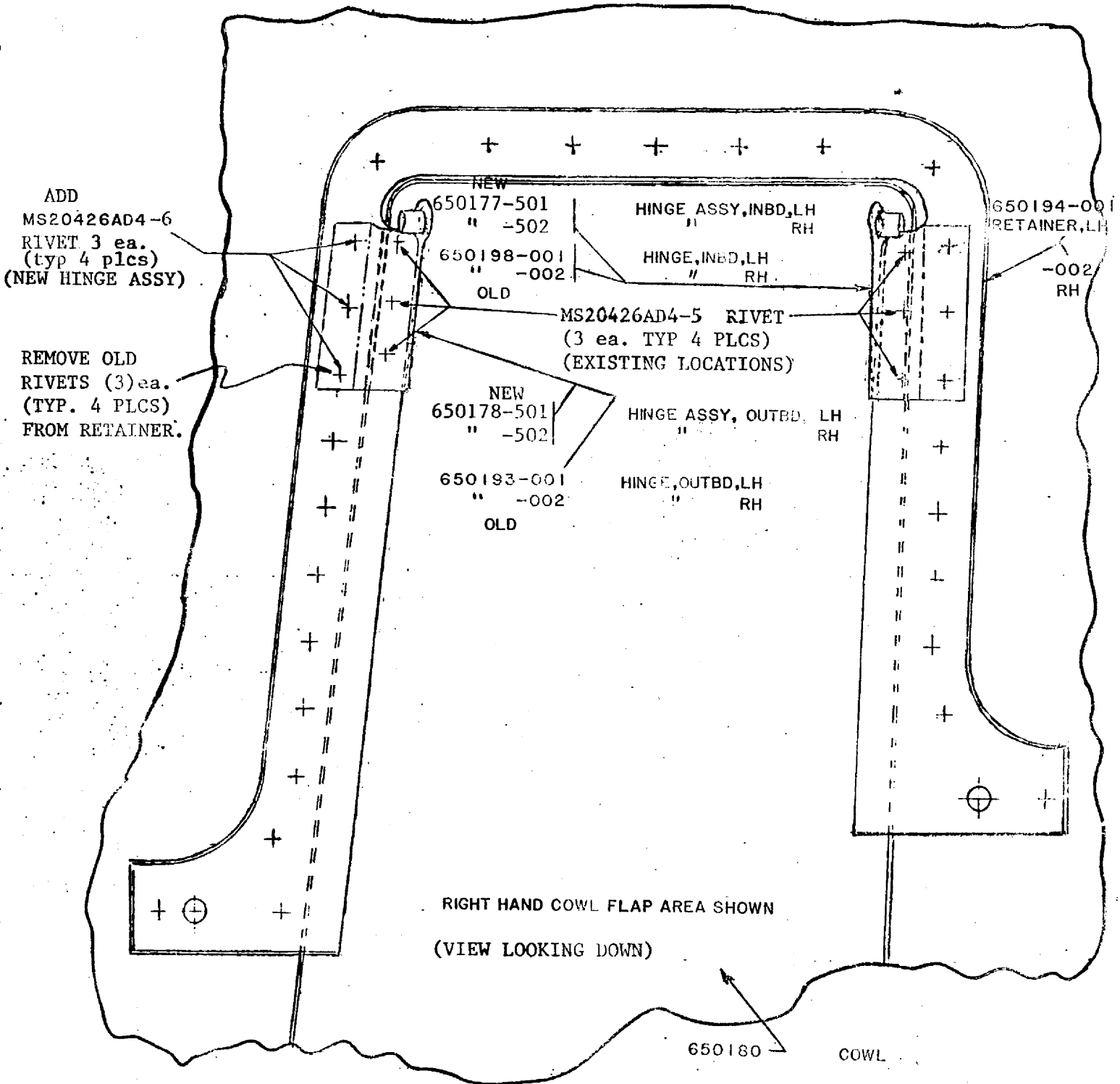
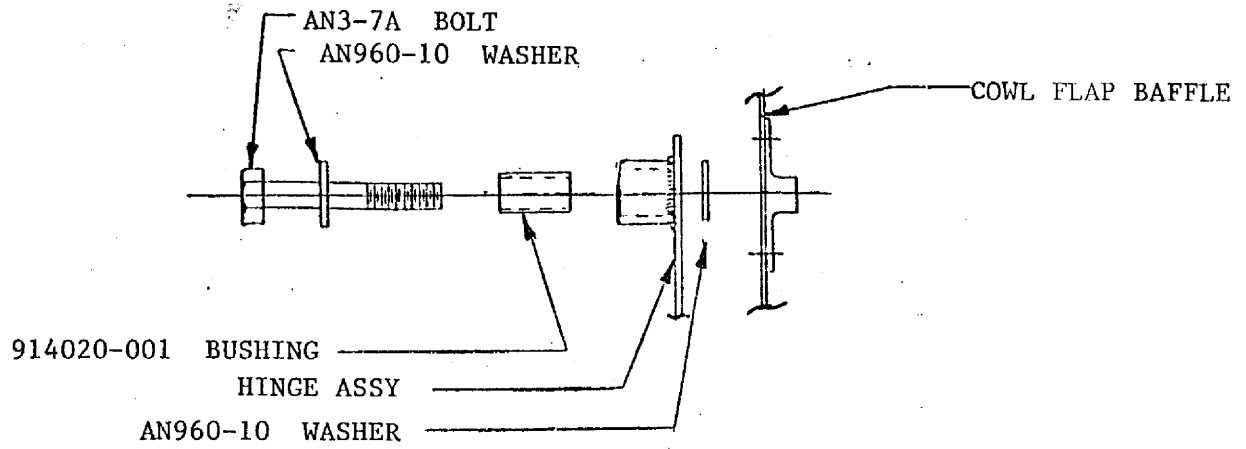


FIGURE M20-231-4



(TYPICAL HINGE/BOLT INSTALLATION)  
FIGURE M20-231-5