ACTIONED # N. PACIFIC RBB 02257 1/JUNE'

TRUCK, SURVEILLANCE, LIGHTWEIGHT, WINCH, MC2 - LAND ROVER 110
FITTING OF ROLL OVER PROTECTION AND HEAD RESTRAINTS

MODIFICATION INSTRUCTION

Introduction

1. This EMEI is authorised for issue by the authority of the CGS. It provides direction and mandatory controls and procedures for the maintenance and support of equipment. Personnel are to obey the instructions and follow the procedures contained in this publication.

2. This instruction details the fitting of a roll over protection system (ROPS) to the Regional Force Surveillance Vehicle (RFSV) to enhance the strength of the front roll-tube and to provide a stronger mounting point for the seat belt and spare wheels. The fitting of head restraints is also detailed in this instruction.

3. This instruction is also to be used for the in-service replacement of the ROPS to this variant.

Note:

1. NSN/MPN and Designation used in this instruction were current at the date of issue. If twelve months or more have expired since issue, the NSN/MPN should be checked for supersession.

General

4. Estimated Modification Time. 2.30 hrs.

5. Priority. Group 1. SAFETY MODIFICATION is to be actioned in accordance with EMEI WKSP A 850 Issue 4, Jun 89 and completion reported in accordance with the Equipment Maintenance Programme issued by HQ Log Comd MM Div, however continued use of vehicles is permitted prior to the modification being completed.

6. Modification to be Applied to. Retrofit action applies to RFSV in the ARN range 51581-51628. Subsequent in-service replacement applies to all RFSV.

7. Items Affected. Front roll tube and front seats.

8. Action Required. By RAEME units authorised to carry out unit, field and base repairs. The modification is only to be carried out by the following tradesmen:

a. Metalsmith ECN 235-2;

b. Defence employed civilian welders with welding certificates three and eight in accordance with AS 1796 - 1783 standard;

c. Defence employed civilian welders who have been assessed by an authorised assessing officer to have passed ECN 235-2 welding certificate standard; and

d. Contract repair and JRA approved warranty repair agent welders with welding certificates three and eight in accordance with AS 1796 - 1783 standard.

TABLE 1 - STORES REQUIRED (To be demanded through normal supply channels) The issue of initial stores for retrofit will be controlled by HQ Log Comd MM Div (Mech Gp).

Item	MPN/NSN	Designation	Qty per Equip
1.	2540-66-128-6105	MODIFICATION KIT ROLL TUBE RFSV, RETROFIT, (JRA NO HYG 5973) COMPRISING ITEMS 1a-1q (see Note 1, 2 and 3)	1
a.	HYG5974	ROLL TUBE ASSEMBLY,	1
✶ b.	HYG5901	COLLAR, ROLL TUBE	2
c.	HYG5948	REAR BRACE ASSY, RIGHT	1
d.	HYG5949	REAR BRACE ASSY, LEFT	1
e.	HYG5908	BRACE, TRANSVERSE, ROLL TUBE	1
f.	HYG5588	CAPPING PLATE LOWER (THREADED)	2
g.	SH108301	SCREW, CLAMPING, ROLL TUBE, METRIC, 8mm dia, 30mm lg	2
h.	BH108151	BOLT, ROLL TUBE, LOWER, METRIC, 8mm dia, 75mm lg	2
i.	NY108041	NUT, ROLL TUBE, LOWER, METRIC	2
j.	WA108051	WASHER, ROLL TUBE, LOWER	4
k.	SH112251	SCREW, CAPPING PLATE, METRIC, 12mm dia, 25mm lg	8
l.	WL112001	WASHER, LOCK, CAPPING PLATE	8
m.	WA112081	WASHER, FLAT, CAPPING PLATE	8
n.	HYG5684	WARNING DECAL	1
o.	HYG5976	INSTALLATION DRAWING	1
p.	HYG5648	HEAD RESTRAINT (Stratos)	2
q.	BYG9257	MOUNTING-AUXILIARY POWER SOCKET	1
2.	8010-66-052-4627	PRIMER COATING, METAL, ZINC RICH EPOXY	500 ML
3.	8010-66-052-4629	PRIMER COATING, METAL, ZINC RICH EPOXY	4 LT
4.	8010-66-092-5065	ENAMEL, MATT, BROWN, GOLDEN	1 LT
5.	3439-66-016-2219	ELECTRODE, WELDING, MILD STEEL	5 KG

Notes:

1. The modification kit detailed in Table 1 is for the fitment of ROPS to RFSV in the ARN range 51581-51628. All other RFSV are fitted with ROPS during production. For in-service replacement of ROPS, Repair Kit NSN 2540-66-128-6106, JRA number HYG 5977, is to be used. This kit will include all original kit items except the headrests and auxiliary power socket mounting bracket.

2. Vehicles in the ARN range 51581-51628 were fitted with Stratos seats in production. All other RFSV were fitted with ISRI seats in production.

3. The headrests are not interchangeable between seat types and if the seat is damaged the seat and headrest are to be replaced as an assembly.

TABLE 2 - STORES REQUIRED FOR IN-SERVICE REPLACEMENT OF HEADRESTS (To be demanded through normal supply channels)

Item	NSN	Designation	Qty per Equip
1.	HYG5671	HEAD RESTRAINT (ISRI)	2
2.	HYG4719	PLUG HEAD RESTRAINT (ISRI)	2

TABLE 3 - STORES REMOVED (To be disposed of in accordance GEN P series)

Item	MPN/NSN	Designation	Qty per Equip
1.	HYG5665	ROLL TUBE	1
2.	HYG3968	BRACE	2
3.	SH110301	SCREW, METRIC	4
4.	WC110061	WASHER, PLAIN	8
5.	WL110001	WASHER, LOCK	4
6.	NH110041	NUT	4
7.	NIC	BRACKET, BRACE TO BODY	2
8.	NIC	BRACKET, AUXILIARY POWER SOCKET TO BODY	1

9. The completed modification, shown in Fig 4, is to be carried out as follows:

a. Disconnect all battery connections.

b. Remove the boat racks and cam net carrier.

c. Remove the canopy from rear of the vehicle and fold it forward over the cabin roof.

d. Remove the horizontal canopy rails connecting the front roll tube to the front and intermediate canopy bows.

e. Remove the seat belts from the front roll tube mounting point and cover them to prevent damage from weld splatter.

f. Fold the cabin seats forward and cover them with suitable material to avoid damage from weld splatter.

g. Remove the rear seat and mounting bracket assembly from the vehicle.

h. Remove the spare wheels, spare wheel retaining braces and the front roll tube from the vehicle.

i. Remove the auxiliary power supply socket and wiring from the front bulkhead bracket and retain it for refitment to the new ROPS assembly.

CAUTION:

1. When removing the PUP paint, procedures as detailed in EMEI WKSP E 652 must be strictly adhered to, ie, work area is to be well ventilated by use of fan forced air or extraction.

j. Grind the welds and remove the auxiliary power socket bulkhead brackets from the bulkhead and the spare wheel mounting brace brackets from the body side cappings.

k. Slide the collars (item 1b from Table 1) onto the new roll bar assembly (item 1a from Table 1), as shown in Fig 1.

l. Fit the new roll bar assembly to the vehicle and fit the clamping bolts (item 1g from Table 1) as shown in Fig 1.

CAUTION:

1. Heat is <u>not</u> to be applied to the roll tube assembly to assist in fitment.
2. The roll tube assembly is <u>not</u> to be drilled for the clamping bolt.

Note:

1. Ensure that the legs of the roll tube assembly are properly located in the lower retaining bracket.

2. If difficulty is experienced when locating the roll tube assembly during the fitment, then contact MEA, B Vehicle section, on (03) 282 6663.

m. Refit the cam net carrier and the horizontal canopy rails to assist in the location of roll tube and to ensure correct fitting location of the cam net carrier on completion.

n. Drill the lower roll tube retaining brackets to allow the fitment of the lower retaining bolts, nuts and washers (items 1h, 1i and 1j from Table 1), as shown in Fig 1.

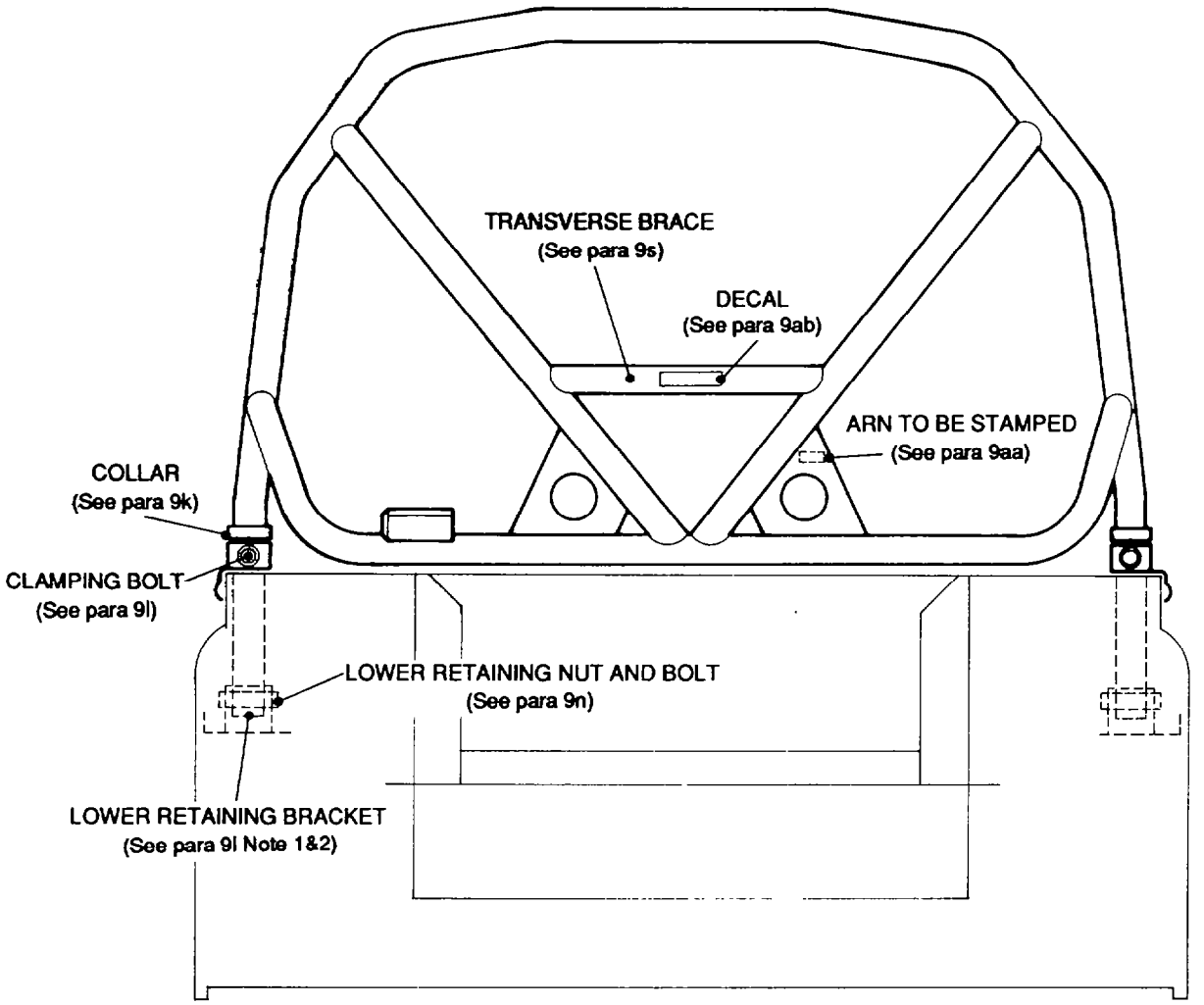

FIG 1 - ROLL TUBE REAR VIEW (REAR BRACES NOT SHOWN)

o. Assemble the threaded capping plates to the rear brace assemblies (items 1c, 1d and 1f from Table 1) utilising the screws and washers (items 1k, 1l and 1m) and ensure that correct alignment and maximum thread engagement is achieved.

p. Position the capping plates and rear brace assemblies to obtain a flush fitting of the rear brace assemblies to the roll tube.

q. Mark and grind the contact area of the threaded capping plates to the body capping and the rear braces to the roll tube.

r. Tack weld the threaded capping plate to the body capping and the rear braces to the roll tube.

Note:

1. Fit the spare wheels to ensure that there is clearance between the bulkhead and the stowage bins and then remove them from the vehicle.

s. Position the transverse brace (item 1e from Table 1) in the vee of the roll tube assembly braces, as shown in Fig 1, mark and grind the contact area and then tack weld the brace in position.

t. Weld the collars to the roll tube assembly using two welds of three cms, 180 degrees apart, on the upper part of the collar only.

Note:

1. Ensure that the collars contact the upper roll tube retaining bracket before welding.

u. Fully weld the threaded capping plate to the body capping, as shown in Fig 2.

v. Fully weld the transverse and rear braces to the roll tube.

w. Remove the cam net carrier, horizontal canopy bows and roll-tube mounting bolts and raise the ROPS assembly to complete the welds on the lower edges of the roll tube assembly.

x. Lower the ROPS assembly and refit all mounting bolts after applying Loctite 277 to the threads.

y. Clean all welds and paint all exposed surfaces with primer, zinc rich epoxy and allow to dry, then apply brown paint (item 4 from Table 1) as a finish coat.

z. Fit the auxiliary power socket bracket (item 1q from Table 1) and wiring to the bracket on the roll tube.

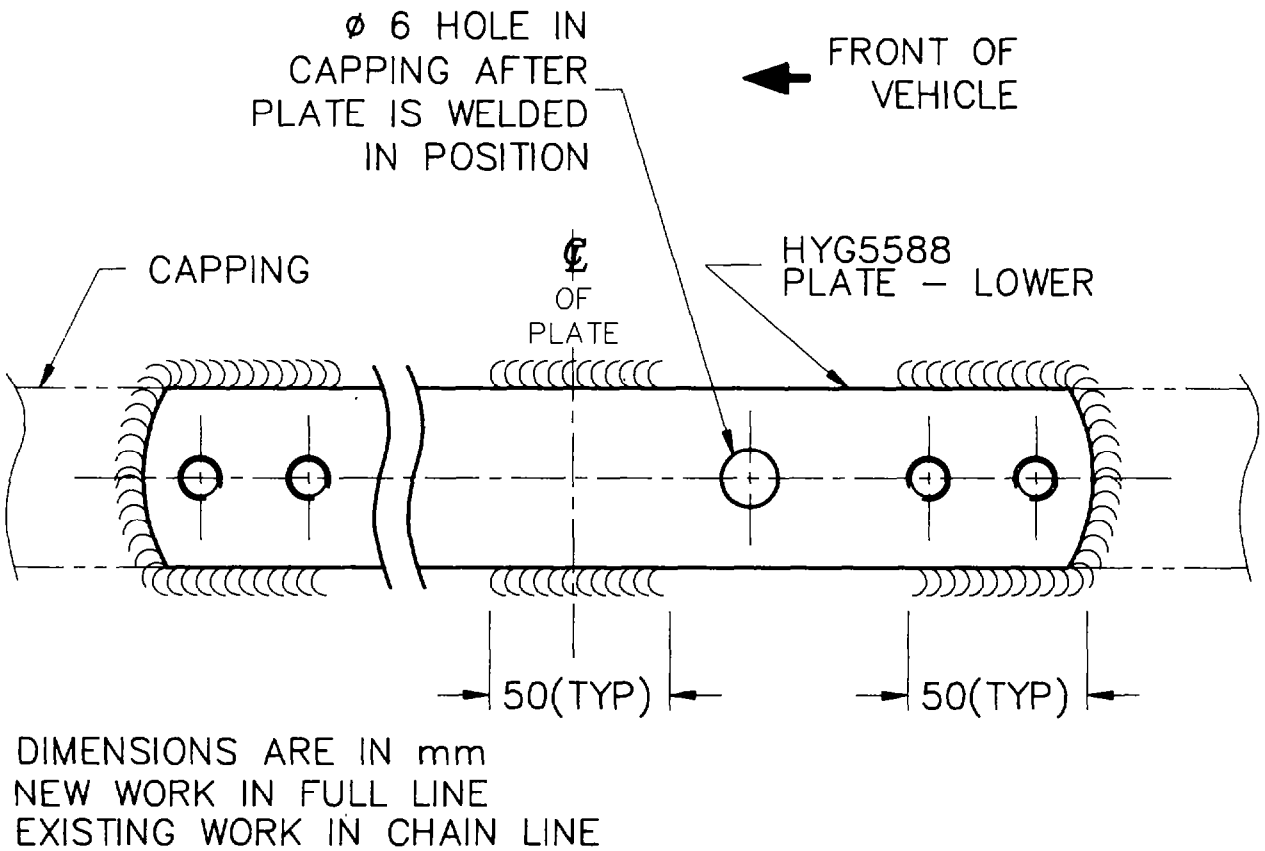

FIG 2 - WELD DIMENSIONS LOWER CAPPING PLATE

aa. Using 6 mm metal stamps, clearly mark the vehicle ARN on the front and rear of the gusset as shown in Fig 1.

ab. Fit the warning decal (item 1n from Table 1) as shown in Fig 1.

ac. Refit the spare wheels and the rear seat assembly.

ad. Replace the seat belts on the upper mounting position of the roll tube and return the seats to the upright position.

ae. Refit the horizontal canopy rails, canopy, cam net carrier and boat racks.

af. Refit the battery connections.

CAUTION:

1. The roll over protection assembly is not to be modified or repaired ie, drilling, grinding and welding is not permitted.

WARNING:

1. The roll over protection assembly is to be replaced should any one or combination of the following occur:
   a. The vehicle is involved in a roll over accident.
   b. Where distortion has occurred to the roll over structure or capping rails.
   c. Weld failure.

10. Head restraints are to be fitted as follows:

a. Locate the vertical tubes located beneath the vinyl trim in the seat back and cut the vinyl with a sharp instrument to expose the apertures, as shown in Fig 3.

b. Fit the restrants (item 1p from Table 1) into the tubes until they are flush with the seat squab.

Note:

1. Should the head restraints not fully engage in the tubes it may be necessary to use an 8 mm ream or drill to remove any restriction in the tubes.

WARNING:

1. For inservice replacement of ISRI headrests use items 1 and 2 from Table 2. The headrests are not interchangeable between seat types and if the seat is damaged the seat and headrest are to be replaced as an assembly.

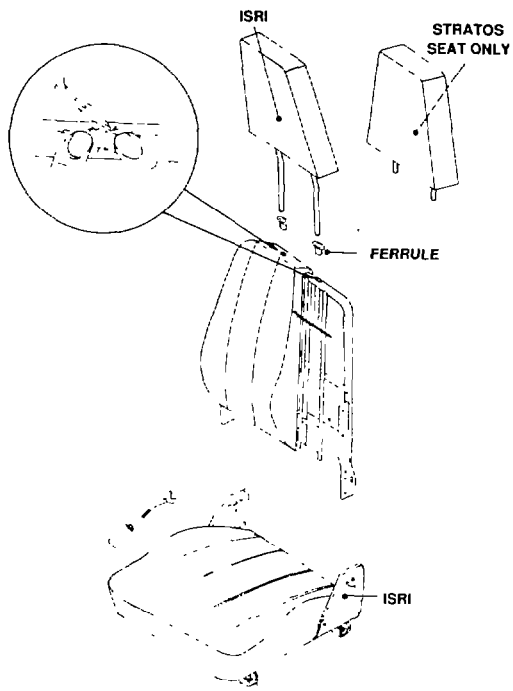

FIG 3 - FITTING OF HEAD RESTRAINTS

FIG 4 - COMPLETED ROPS

11. Modification Record Plate. Deface the numeral 12 on the modification record plate, including those vehicles modified in production.

12. Documentation. Details of the modification are to be entered in Part Three of the TGM 120 Record Book for Service Equipment of all the subject vehicles, including those vehicles modified in production.

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