

## TRUCK, TRANSPORTER, FLOATING BRIDGE, MC3, W/WINCH, MACK, LAUNCH AND RECOVERY VEHICLE (LRV)

### SERVICING INSTRUCTION

This instruction is authorised for use by command of the Chief of Army. It provides direction, mandatory controls and procedures for the operation, maintenance and support of equipment. Personnel are to carry out any action required by this instruction in accordance with EMEI General A 001.

#### Introduction

1. This EMEI lists the requirements for each level of servicing for the Launch and Recovery System (LRS) fitted to the Truck, Transporter, Floating Bridge, MC3, W/winch, Mack, Launch and Recovery Vehicle (LRV). To complete a service/Technical Inspection (TI) on the cab/chassis for the vehicle, refer to Para 3.a.
2. Para 5 details the servicing sequence for the LRV. Table 2 details the actions to be performed at each level of servicing for the LRV. The corresponding service and TI for the Mack is to be conducted as per the specified intervals for the LRV.

#### WARNING

**All industrial safety, work practices and equipment operating and maintenance instructions pertaining to this EMEI are to be adhered to.**

**The handling, storage and use of chemical substances are to be in accordance with SAFETYMAN, MSDS and EMEI Workshop E series requirements.**

#### Associated Publications

3. Reference may be necessary to the latest issue of the following documents for maintenance and repair procedures:
  - a. [EMEI Vehicle G 709](#) – Truck, Cargo, Heavy, MC3 - Mack – All Variants – Servicing Instruction;
  - b. [EMEI Vehicle G 783](#) – Truck, Transporter, Floating Bridge, MC3, W/Winch, Mack, Launch and Recovery Vehicle (LRV) – Light Grade Repair;
  - c. [EMEI Vehicle G 788](#) – Truck, Transporter, Floating Bridge, MC3, W/Winch, Mack, Launch and Recovery Vehicle (LRV) – Equipment Inspection and Examination Data;
  - d. [EMEI Vehicle D 108](#) – Recovery Equipment – Inspection of Recovery Equipment – Inspection for Useability;
  - e. [DEF\(AUST\)206F](#) – Petroleum, Oils and Lubricants Handbook;
  - f. [Electronic Supply Chain Manual](#) (ESCM);
  - g. Technical Regulation of ADF Materiel Manual – Land ([TRAMM-L](#)) (available from DTR-A website <http://intranet.defence.gov.au/armyweb/Sites/DTRA>);
  - h. [SAFETYMAN Vol 1, Part 5, Chap 1](#) – Management of Hazardous Substances – Excluding Explosives and Radioactive Materials; access to Material Safety Data Sheets (MSDS) for view or print is now available via the [Chem Alert](#) database at <http://ohsc.defence.gov.au/msds/default.htm>; and
  - i. Equipment User/Operator and Servicing Handbooks.

#### Servicing Points

4. Servicing points for the Launch and Recovery System are identified in Figure 1.

### Servicing Sequence

5. The following servicing sequence is to be applied:
  - a. TI/Minor Service – 10 000 km/12 months/250 Engine hours after the last service;
  - b. TI/Major Service – 10 000 km/12 months/250 Engine hours after the last service;
  - c. TI/Minor Service – 10 000 km/12 months/250 Engine hours after the last service;
  - d. TI/Alt Major Service – 10 000 km/12 months/250 Engine hours after the last service;
  - e. The servicing sequence commences again after the Alternate Major Service.
6. Servicing is based on distance travelled, elapsed calendar time or Engine hours with all vehicles being serviced and technically inspected at least once every 12 months.
7. Unit commanders may reduce the periods between services or add servicing tasks to meet operational or exercise requirements. A scheduled service may be anticipated or delayed within a limit of plus or minus 10 percent of the interval between services to meet operational needs and to permit workload planning.

### NOTE

When any equipment exceeds the 10 per cent maximum limit of the servicing interval (Para 5), it is to be classified 'DO NOT USE – XX' until the outstanding service is completed.

### Authorised Personnel

8. Daily servicing of the LRV can be carried out by the operator. The following personnel are authorised to carry out all other services on the LRV as applicable to the task:
  - a. Vehicle Mechanic (ECN 229);
  - b. Recovery Mechanic (ECN 226);
  - c. Technician Electrical (ECN 418);
  - d. Fitter Armourer (ECN 146);
  - e. Tri-service/civilian equivalent; or
  - f. A qualified operator, to carry out general servicing under supervision of a tradesperson listed above.

### Standard Job

9. Standard job numbers have been raised to detail the vehicle servicing/TI procedures. Table 1 details the standard job numbers allocated for the LRV. Refer to Para 3.a for the cab/chassis standard job numbers.

**Table 1 Standard Job Numbers**

| Serial | Standard Job Numbers | Standard Job Description                |
|--------|----------------------|---|
| 1      | 6960                 | Mack LRV & Equipment Annual Tech Insp   |
| 2      | 6957                 | Mack LRV & Equipment Minor Svc & TI     |
| 3      | 6958                 | Mack LRV & Equipment Major Service & TI |

### Additional Tasks

10. No additional tasks are to be added to scheduled maintenance work orders. A separate work order shall be raised to record additional maintenance tasks identified during the servicing and/or the Technical Inspection. These additional tasks may include, but not be limited to, the replacement of wheel bearings, brake pads/shoes, wheel cylinders etc, and outstanding modifications. The additional tasks are to be completed in conjunction with the scheduled maintenance.

**Table 2 Servicing Requirements**

| Serial  | Item or Assembly<br>(Numbers in Parentheses refer to<br>Figure 1)     | TI   | Minor<br>Service | Major<br>Service | Alt Major<br>Service | Capacity<br>(Litres) | Lubricant         |
|---|---|------|------------------|------------------|----------------------|----------------------|-------------------|
| Standard Job Number   |   | 6960 | 6957             | 6958             | 6958                 |                      |                   |
| 1   | Lift winch gearbox (1)  | –    | –                | D                | D                    | 4                    | OEP-220           |
| 2   | Lift winch sheave (2)   | –    | L                | L                | L                    | –                    | Molybond<br>spray |
| 3   | Pontoon lock (3)  | –    | L                | L                | L                    | –                    | Diesel            |
| 4   | Hydraulic control lever (4)   | –    | I                | I                | I                    | –                    | –                 |
| 5   | Pressure relief valve (5)   | –    | I                | I                | I                    | –                    | –                 |
| 6   | Roller extension box (6)  | –    | L                | L                | L                    | –                    | XG-291            |
| 7   | Front roller guide (7)  | –    | L                | L                | L                    | –                    | XG-291            |
| 8   | Frame lock (8)  | –    | L                | L                | L                    | –                    | Molybond<br>spray |
| 9   | Rear frame pivot (9)  | –    | L                | L                | L                    | –                    | XG-291            |
| 10  | Rear roller guide (10)  | –    | L                | L                | L                    | –                    | XG-291            |
| 11  | Centre rollers (11 & 18)  | –    | L                | L                | L                    | –                    | XG-291            |
| 12  | Rear winch fairlead (12)  | –    | L                | L                | L                    | –                    | XG-291            |
| 13  | Rear catch plate (13)   | –    | L                | L                | L                    | –                    | Diesel            |
| 14  | Cable guide roller (14)   | –    | L                | L                | L                    | –                    | XG-291            |
| 15  | Rear winch sheave (15)  | –    | L                | L                | L                    | –                    | XG-291            |
| 16  | Frame pivot (16)  | –    | L                | L                | L                    | –                    | XG-291            |
| 17  | Lift cylinder frame pivot (17)  | –    | L                | L                | L                    | –                    | XG-291            |
| 18  | Lift cylinder base pivot (19)   | –    | L                | L                | L                    | –                    | XG-291            |
| 19  | Hook arm pivot (20)   | –    | L                | L                | L                    | –                    | XG-291            |
| 20  | Hydraulic oil tank (21), (Para 11)                                    | –    | Sample/T         | D                | D                    | 80                   | OM-33             |
| 21  | Hook arm cylinder pivot (22)  | –    | L                | L                | L                    | –                    | XG-291            |
| 22  | Hook guide block pivot (23)   | –    | L                | L                | L                    | –                    | XG-291            |
| 23  | Return line filter (24), (Para 12)                                    | –    | –                | C, I             | C, I                 | –                    | –                 |
| 24  | Return line pressure (25)   | –    | I                | I                | I                    | –                    | –                 |
| 25  | Lift winch cable (26), (Para 13)                                      | –    | C, L             | C, L             | C, L                 | –                    | –                 |
| 26  | Lift frame (27)   | –    | L                | L                | L                    | –                    | XG-291            |
| 27  | Lift arm pivot (28)   | –    | L                | L                | L                    | –                    | XG-291            |
| 28  | LRV module (Para 14)  | –    | I, AR            | I, AR            | I, AR                | –                    | –                 |
| 29  | Raise Technical Inspection Report<br>(Para 15)                        | AR   | AR               | AR               | AR                   | –                    | –                 |
| 30  | Record details of the inspection<br>and service in the vehicle GM 120 | AR   | AR               | AR               | AR                   | –                    | –                 |
| Legend: <b>AR</b> – Action Required, <b>C</b> – Clean, <b>D</b> – Drain and Refill, <b>I</b> – Inspect, <b>L</b> – Lubricate, <b>T</b> – Top up |   |      |                  |                  |                      |                      |                   |

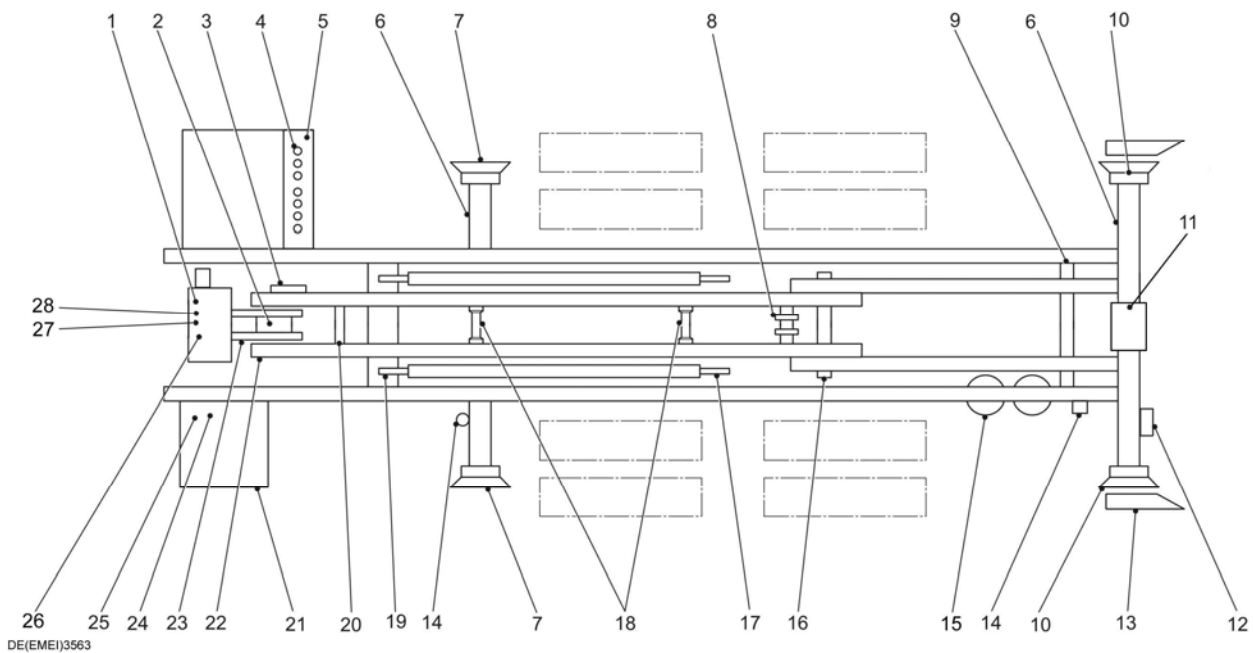
**General Information**

**11.** The hydraulic oil is to be check sampled annually and changed at each major/alt major servicing. The sample report is to be retained in the vehicle GM 120 log book for reference. Hydraulic oil is to be replaced if sampled results are unsatisfactory.

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- 12.** The hydraulic oil filter is to be cleaned each major/alt major servicing or when an oil change is required as determined by sampling and analysis.
- 13.** The winch rope is to be cleaned using low pressure fresh water, e.g. garden hose. The winch rope is not to be cleaned using high pressure cleaners. Once cleaned, the winch rope is to be inspected by a Recovery Mechanic (ECN 226-2) in accordance with Para 3.d prior to lubricating it with Lubricating Oil, Preservative, Corrosion Inhibited, NSN 9510-99-337-1498.
- 14.** The following inspections/actions are to be completed:
  - a.** Inspect and tighten all LRS mount bolts.
  - b.** Perform a complete LRS operation test (ensure Lift Frame limit switches operate correctly).
  - c.** Inspect all flag holders, clips and chains.
  - d.** Inspect all LRS wiring and work lights.
  - e.** Inspect and check all pin locking fasteners (ensure Lift Frame to Chassis locking rods are lubricated and function correctly).
  - f.** Inspect the main frame bearing blocks.
  - g.** Inspect all tow winch guides and rollers.
- 15.** Raise and complete a Technical Inspection (TI) report entering the details of the inspection in Part 2 of the vehicle's GM 120, placing a copy of the report into the GM 120. The original TI is to be retained with the work order.

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**Figure 1 Launch and Recovery System**

**END**

Distribution List: **VEH G 59.0 – Code 2** (Maint Code)  
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