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SPECIFICATION ARMY(AUST) 48

FOR

TRUCK, FIRE FIGHTING, $\frac{3}{4}$ TON GS

FIRE ENGINE

ISSUE 17

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Design Endorsed

Date: 20 May 69

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Approved for Production/
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Date: 20 May 69

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3.

1. SCOPE

This Specification covers the fitting of a Fire Tender Body to a Truck Chassis, Fire Tender, 3/4 Ton, 4 by 4, GS Land Rover, as supplied to Specification ARMY(AUST)47. The provision and installation of ancillary equipment is also stated together with stowage requirements for a draft Complete Equipment Schedule.

2. APPLICABLE DOCUMENTS

Reference is necessary to the latest issue of each of the following documents:

2.1 Specifications

- ARMY(AUST) 10 - General Specification to Govern the Technical Data to be supplied by Contractors for 'B' vehicles.
- ARMY(AUST) 47 - Truck, Chassis, Fire Tender, 3/4 Ton, 4 by 4, GS, Land Rover, Series 2A, 109 in WB.
- ARMY(AUST) 64 - Plugs and Sockets 12 pin for use on Vehicles and Trailers.
- ARMY(AUST) 67 - Ladders Fire Extension 13 ft and 16 ft.
- ARMY(AUST) 94 - Belts, Safety Assemblies for Motor Vehicles.
- ARMY(AUST)921 - Extinguisher Fire Bromochlorodifluoromethane 3 lb Stored Pressure Regulated Discharge Type.

These Specifications are available from the Army Design Establishment, Private Bag No 12, P.O. ASCOT VALE, Victoria, 3032.

- DEF(AUST) 28 - Rake, Forest Fire, Hand.
- DEF(AUST) 34 - Application of Unified Screw Threads.
- DEF(AUST) 38 - Extinguishers, Fire, Portable-Types and Capacities.
- DEF(AUST) 47A - Identification Marking of Service Equipment.
- DEF(AUST) 55 - Branchpipe, Fire Hose (Male Instantaneous Inlet).
- DEF(AUST) 56 - Nozzles, Branchpipe.
- DEF(AUST) 61 - Extinguisher, Fire, Water (Gas Pressure 2 gallon capacity).
- DEF(AUST) 63A - Reel, Fire Hose (water).
- DEF(AUST) 64 - Coupling, Fire Hose (delivery 2½ in hose).
- DEF(AUST) 65 - Coupling, Fire Hose (suction, 4 in hose).
- DEF(AUST) 76 - Hose, Rubber (fire, suction, 4 in smooth bore).
- DEF(AUST) 85A - The Preparation of Drawings for Service Equipments.

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2.1

(Cont'd)

- DEF(AUST) 88 - Fire Fighting Vehicles - Standard Service Range.
 - DEF(AUST) 98 - Ladders, Fire, Extension.
 - DEF(AUST)111 - Strainer, Suction, Fire Hose (Metal, 4 in).
 - DEF(AUST)112 - Strainer, Suction, Fire Hose (Bracket, 4 in).
 - DEF(AUST)143 - Corrosion and its Prevention at Bimetallic Contacts.
 - DEF(AUST)167A - Treatments for Metal Parts.
 - DEF(AUST)168 - Climatic Extremes for Service Equipments.
 - DEF(AUST)169 - First Aid Kit, General Purpose.
 - DEF(AUST)172 - Permissible Limits of Radio Frequency Interference.
 - DEF(AUST)195 - Hose, Synthetic Fibre, Reinforced Rubber Lined.
 - DEF(AUST)217 - Blanket, Fire, Asbestos.
 - DEF(AUST)326 - Axe, Pick Head, Firemen's Rubber Grip.
 - DEF(AUST)500A - Engines, Gasoline and Diesel (Industrial Type Reciprocating) Test Code.
 - DEF(AUST)802 - Axes.
 - DEF(AUST)805 - Handles, Axe and Adze.
 - DEF(AUST)808A - Bars, Case Opening, Crow, Fencing, Pinch and Wrecking.
 - DEF(AUST)810 - Cutters, Bolt.
 - DEF(AUST)1000 - Requirements for Packaging Stores for the Services.
- These Specifications are available from the Manager, Central Drawing Office, Department of Supply, Private Bag No 5, P.O. ASCOT VALE, Victoria, 3032.

2.2

Standards

- AS CA8 - Code for Welding.
- AS CB9 - Pump Tests.
- AS CZ1 - Engineering Drawing Practice.
- AS R1 - Safety Glass for Land Transport.
- AS H48 - Wrought Aluminium and Aluminium Alloy Flat and Coiled Sheet for General Engineering Purposes.
- AS H49 - Aluminium Alloy Ingots and Castings for General Engineering Purposes.

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2.2 (Cont'd)

- AS H50 - Wrought Aluminium and Aluminium Alloy Extruded Tubes and Hollow Sections for General Engineering Purposes.
- AS H54 - Wrought Aluminium and Aluminium Alloy, Extruded Bars, Rods, and Solid Sections for General Engineering Purposes.
- AS H59 - Wrought Aluminium and Aluminium Alloy Plate for General Engineering Purposes.
- AS K94 - Methods of Testing Plastics Part 3 - Mechanical Properties.
- BS 381C - Colours for Specific Purposes.
- BS 336 - Fire hose couplings and ancillary equipment.
- BS 2311 - Colour codes for connections in radio and allied electronic equipment.
- BS 3169 - Rubber reel hose for fire fighting purposes.
- BS 3758 - Polyester Filament ropes.

These Standards are available from the Standards Association of Australia in all Capital Cities.

2.3

Drawings

- ADE(V) 37 Series Drawing Schedule Chassis Truck 3/4 Ton GS, Fire Engine, Land Rover Series 2 and 2A, 109 in WB.
- ADE(V) 142-1D - P.T.O. Assembly.
- ADE(V) 142-2B - Bracket Support.
- ADE(V) 142-3A - Arm Connecting.
- ADE(V) 142-4B - Link Connecting.
- ADE(V) 142-5C - Bracket P.T.O. Control.
- ADE(V) 142-6B - Rod P.T.O. Control.
- ADE(V) 142-7C - Lever P.T.O. Control.
- ADE(M) 1 Series Fire Fighting Fittings and Appliances.

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2.3 (Cont'd)

ADE(X) 630 1 and 2 - P.T.O. Modification.

ADE(X) 644 Series - EMEI Truck 3/4 Ton GS Fire Engine.

These Drawings are available from the Chief Superintendent, Army Design Establishment, Private Bag No 12, P.O. ASCOT VALE, Victoria, 3032.

2.4 Publications

Society of Automotive Engineers Handbook. This publication is available in most technical bookshops.

3. DEFINITIONS

3.1 'Inspecting Officer' shall be the Director of Army Inspection or his representative.

3.2 'Approved' shall mean approved by the Inspecting Officer.

3.3 'MOEEI' shall mean 'Manufacturers Optional Extra Equipment Item'.

3.4 'Sample vehicle' shall be a Truck, Fire Fighting, 3/4 Ton, GS, that complies in all respects with the requirements of this Specification.

4. REQUIREMENT4.1 General

The vehicle chassis shall be that normally sold on the commercial market as a Land Rover, Series 2A, 109 inch (in), wheel base (WB), 2¼ litre petrol driven engine with the necessary modifications and fittings to comply with Specification ARMY(AUST)47.

4.1.1 The vehicle chassis shall be issued to the Contractor on a no cost basis by the Department of Army.

4.1.2 The Contractor shall check each vehicle chassis and effect any necessary modifications to ensure that each chassis complies with the latest issue of Specification ARMY(AUST)47.

4.1.3 The vehicle chassis shall be fitted with a Fire Engine, Fibre **Glass** body that complies with the requirements of ANNEX 'A'. The completed vehicle shall be fitted with all the fire fighting equipment listed in the draft Complete Equipment Schedule (CES) at ANNEX 'B'.

4.2 Cab and Chassis

4.2.1 The vehicle shall have LAP type safety belts fitted for the driver and two passengers. The safety belts shall comply with Specification ARMY(AUST)94.

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4.2 (Cont'd)

- 4.2.2 One recirculating heater-demister (Rover MOEEI-E1117) shall be provided and fitted in accordance with the sample vehicle.
- 4.2.3 The transmission cover in the cab shall be modified to drawings ADE(V) 37-11C and ADE(X) 630-1 and 2 to provide for a Power Take-Off (PTO) control lever.
- 4.2.4 A boom spray control valve with a pressure gauge in accordance with drawing ADE(V) 37-61 shall be provided and mounted on the dash panel in conformity with the sample vehicle.
- 4.2.5 Provision shall be made for securing the tyre pump and other accessories situated behind the seats in accordance with drawing ADE(V) 37-133 and the sample vehicle.
- 4.2.6 Heat Exchanger
- 4.2.6.1 The vehicle radiator shall be modified in accordance with drawing ADE(X) 630-3 and 4 for the installation of a heat exchanger.
- 4.2.6.2 The heat exchanger shall be of fibre glass construction with a stainless steel cooling coil and mounting inserts manufactured from aluminium bar stock. A REINFORCED PLASTIC part No 112/5 or equivalent may be used providing it complies with the provisions of this sub-para.
- 4.2.6.3 The heat exchanger shall be fitted in accordance with drawing ADE(V) 37-63C and the sample vehicle.
- 4.2.7 The chassis body mounts shall be drilled in accordance with drawing ADE(V) 37-41D.
- 4.3 Fire Pump
- 4.3.1 The fire pump shall be a Coventry Climax model FWBPS (AS) with Trinity water ring primer modified by the supplier to conform to the sample vehicle.
- 4.3.2 The pump shall be driven by the vehicle PTO using a drive shaft Rovert Part No 236941/88 or approved equivalent.
- 4.3.3 The vehicle PTO unit shall be modified in accordance with drawing ADE(V) 142-1.
- 4.3.4 The fire pump suction inlet shall be 4 in screwed 3 Round threads per inch (TPI) to BS 336 and fitted in accordance with drawings ADE(V) 37-14C, 12C and 13B, ADE(X) 630-1 and 2, ADE(X) 644-1D.
- 4.3.5 The fire pumps two delivery valves shall each be fitted with a 2½ in British Instantaneous Coupling (BIC) Male Blanking, Titan Knowsley No 402 or approved equivalent.

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4.3 (Cont'd)

4.3.6 The fire pump shall be capable of complying with the requirement of Table 1 when working through a 4 in suction hose and fitted with all strainers except the basket strainer. The test shall be performed at sea level conditions in accordance with AS CB9.

TABLE 1

Lift, measured vertically from water level to suction eye (ft)	Condition	Pressure lbs/sq in	Output Gal/Min
a. 10	Working through 16 ft of 4 in suction hose (two 8 ft lengths of specified suction hose)	100	500
b. 24	Working through 32 ft of 4 in suction hose (four 8 ft lengths of specified suction hose)	100	Not less than 40% of quantities under a. above

4.3.7 Fire Pump Fittings

4.3.7.1 The fire pump fittings shall be manufactured from aluminium or stainless steel in accordance with the sample vehicle. The materials shall comply with DEF(AUST)143.

4.3.7.2 The fire pump shall have fittings for the attachments of a Room Spray in accordance with drawing ADE(V) 37-43C and the sample vehicle.

4.3.7.3 Fittings shall be provided in accordance with drawing ADE(V) 37-22A for the purpose of filling Knapsack Sprays. A hose manufactured to drawing ADE(V) 37-33 shall be provided.

4.3.7.4 Unions and connections into the body of the pump shall be British Standard Pipe (BSP) parallel in stainless steel or aluminium as used in the sample vehicle with Dowty seal washers and as approved and issued by Coventry Climax GAAM Eng.

4.3.7.5 The fire pump service lines shall be AEROQUIP medium pressure with REUSEABLE fittings, or approved equivalent, in accordance with the sample vehicle.

4.3.7.6 All service lines and fittings shall be positioned so that they are protected against accidental damage and reasonably accessible for maintenance purposes.

4.4 Body Detail

4.4.1 The fibre glass body shall be constructed to Reinforce Plastic Pty Ltd, Drawing No 200/1 and shall be in accordance with the requirements of Annex 'A'. All metal insert pipes and fittings shall be stainless steel or aluminium.

- 4.4 (Cont'd)
- 4.4.2 The hose reel tank capacity is nominally 50 imperial gallons. It shall be fitted with an inbuilt pipe not less than 2 ins diameter terminating at a 2½ in BIC male coupling for connecting a hose and hydrant for filling and draining as required.
- 4.4.3 A combined filling cap and overflow vent to drawing ADE(V)37-31 shall be fitted into the top of the hose reel tank.
- 4.4.4 The hose reel tank shall be provided with two ½ in BSP stainless steel drain plugs in accordance with the sample vehicle.
- 4.4.5 The stowage lockers shall be fitted flush to the body, have recessed handles and shall have rubber or plastic seals to prevent the ingress of dust and water.
- 4.4.5.1 The lockers shall be fitted with lights, 'SAGE' catalogue No 1044, or an approved equivalent, which shall operate automatically when the locker is opened.
- 4.4.6 Both delivery hose lockers shall be fitted with two 'Wilmot Breeden Ltd', Boot Lid Supports T7/6807, or an approved equivalent.
- 4.4.7 Provision for the securing of the Fire Fighting equipment shall be in accordance with drawings ADE(V)37-105 to 111 and the sample vehicle.
- 4.4.8 A Hose Reel, in compliance with drawing ADE(M)1-25, able to carry 120 feet of ¾ inch braided hose shall be mounted on the fire tender body, in accordance with the sample vehicle.
- 4.4.9 The manufacture and installation of the Ladder Gallows shall comply with drawing ADE(V)37-79 and the fitting shall be per the sample vehicle.
- 4.4.10 A step shall be fitted to allow crew access into the rear of the vehicle. (Ref drawing ADE(V)37-65C and 66C).
- 4.4.11 The following items (supplied with chassis) shall be fitted as shown in the ADE(V)37 series of drawings:
- a. Rear Army registration plate.
 - b. Unit, Formation Sign Holders.
 - c. Rear, Stop and Tail lights.
 - d. Rear mounted, Turn indicators (Amber).
- 4.5 Pump Controls
- 4.5.1 The control panel for the pump shall be fitted with the following instruments and controls, in accordance with the sample vehicle.
- a. One 3 inch vacuum gauge.
 - b. One 3 inch pressure gauge.

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4.5 (Cont'd)

- c. A 12 V impulse Tachometer with means of illumination.
- d. An Arrow Emergency stop switch (Part No 80247A) or an approved equivalent shall be fitted.
- e. A panel control light switch to allow control of the lighting (Arrow Switch 81747 CB or an approved equivalent).
- f. A Lucas panel light (052448D) or an approved equivalent shall be fitted.
- g. A throttle quadrant shall be fitted to the control panel below the instrumentation in accordance with the sample vehicle.
- h. A securing bracket for the fire pump grease service line shall be fitted below the control panel.

4.5.2 Valves

The valves fitted throughout the pumping equipment shall be SAUNDER BALL PLUG VALVE, Type M Stainless Steel.

4.5.3 Boom Spray

A front mounted Boom Spray shall be produced by the manufacturer to drawing ADE(V)37-43C and 56A and shall be fitted in accordance with the sample vehicle.

4.6 Electrical

- 4.6.1 The fire tenders automotive electrical systems shall be 12 volt positive earth.
- 4.6.2 Radio Interference Suppression shall be in compliance with DEF(AUST)172 Class B1, to prevent interference to commercial radio and Television and the vehicles radio when fitted.
- 4.6.3 The wiring used in manufacture shall be, multi-core, PVC insulated, mould proof, copper wire cable.
- 4.6.3.1 Each circuit shall be identified by a suitable PVC sleeve. (Hellaman Twin Lay or an approved equivalent).
- 4.6.4 All electrical equipment and wiring susceptible to the ingress of water from either the fire fighting appliances or from external sources shall be fully water proofed.

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4.6 (Cont'd)

4.6.5 The lighting shall comply with AMVSC Draft Regulations and shall include the following items (fitted by the Contractor in approved positions).

- a. One combined Reversing/Work Light, mounted as shown in drawing ADE(V) 37-86. The light shall be a 'Hella' 1505 fitted with a C1255 Quartz Halogen Globe, or an approved equivalent.
- b. Two long range driving lights ('HELLA') shall be fitted on the muffler valance in accordance with the sample vehicle. The globes used for the driving lights shall be HALOGEN Headlamps LUCAS 457-12 Volt or an approved equivalent.
- c. One Revolving Lamp, Red 360 degrees, 12 Volt 'HELLA' 1629 or an approved equivalent, shall be fitted in accordance with drawing ADE(V) 37-92C.
- d. An Audible Warning System (Fire Siren 'Sher' Catalogue No 142-12V) shall be mounted externally. Operation shall be by a hand switch located in front of the driver. (Refer drawing No ADE(V) 37-92).
- e. An adjustable Spot Light in accordance with the sample vehicle shall be fitted.
- f. One Portable Search Light, able to give defused and beamed light shall be mounted on the body of the vehicle. The search light shall be a 'HELLA' 250/135 RFWJ-2 or an approved equivalent. The tripod, as supplied with above equipment shall be stowed in accordance with drawing ADE(V) 37-111.
- g. A 12 Pin Socket and Cover to Specification ARMY(AUST)64 shall be fitted at the left hand rear of the vehicle within a radius of 19½ inches from the towing hook.

NOTE: The wiring of the 12 Pin Socket Connection shall comply with Mechanical Engineering Instructions (EMEI) (AUST) A007-1, 317-1 and the sample vehicle.

- h. The pump control panel light shall be the standard 'ROVER' number plate light (276317) and shall be installed in accordance with the sample vehicle.
- i. All assemblies listed above shall have Radio Bond Strips to ensure earthing to the chassis or next adjacent assembly. Where possible existing bonding strips on the chassis will be utilized.
- j. All wiring and electrical connections shall be in accordance with drawing Nos ADE(V) 37-70 and 103 and the sample vehicle.

4.6.5.1 An approved Transceiver, 12 Volt, with three channel regulated frequency band is to be fitted if stated on the Procurement Demand.

4. (Cont'd)

4.7 Complete Equipment Schedule (CES) (Draft)

4.7.1 The CES is shown as ANNEX 'B'. The items listed shall be supplied and installed in the appliance in accordance with drawings ADE(V) 37-105 to 111 and the sample vehicle.

4.7.1.1 The Procurement Demand will list those items of the CES which will be supplied by the Department of the Army.

4.7.2 All CES items shall be branded with a BROAD ARROW in accordance with DEF(AUST)47A.

4.8 Identification Plate

4.8.1 A metal Photo Processed Lettering identification plate shall be fitted adjacent to the manufacturers instruction plate (already fitted).

4.8.1.1 The identification plate shall specify the following:

NOMENCLATURE:	TRUCK, FIRE, 3/4 TON GS, FIRE ENGINE
CENSUS CODE No.:	(As applicable)
BODY MODEL:	ARMY(AUST) SPEC 48 of 1969
BODY NUMBER:	MADE BY:
DATE OF DELIVERY:	
CONTRACT NUMBER:	

4.9 Materials

Unless otherwise specified all materials used in the manufacture of the truck fire fighting shall comply with the relevant Australian, British or American Standards, or in their absence, to a standard approved by the Inspecting Officer.

4.10 Workmanship

4.10.1 Workmanship and construction shall be in accordance with the best trade practice for motor body building and shall be to the satisfaction of the Inspection Officer.

4.10.2 The preparation for, and the application of all metallic-arc and gas welding shall be strictly in accordance with the SAA Welding Codes CA8.

4.10.3 The preparation of surfaces for painting, and painting process shall be the standard commercial processes used for Land Rover vehicles, except that the finishing colour shall be Signal Red (BS 381C colour No 537) Full Gloss.

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4. (Cont'd)

4.11 Tendering

4.11.1 The Tenderer shall submit samples of all components and all materials designated as approved components or materials. Alternatively the Tenderer shall state the source of supply in sufficient detail in order that the components and materials can be readily checked or recognized.

4.11.2 Should the Tenderer desire to depart in any manner from the requirements of this Specification, such manner of departure shall be clearly shown in the tender, together with a statement of the advantages to be gained by its adoption.

4.11.3 Warranty and after sales service shall be stated by the Tenderer in his tender.

4.11.4 Tenders, which are not accompanied by the information asked for above, may be rejected without further consideration.

5. QUALITY ASSURANCE PROVISIONS5.1 Inspections

5.1.1 All supplies shall be subject to the approval of the Inspecting Officer. Any supplies submitted for acceptance, which in the opinion of the Inspecting Officer, are inferior in the quality of materials or workmanship or differ in any respect from this specification, drawings, samples or other particulars will be rejected by him.

5.2 Tests

5.2.1 The Contractor shall be responsible for carrying out any tests required by the Inspecting Officer to ensure that the vehicle construction is in accordance with this specification.

5.2.2 The Contractor shall be responsible for providing any test equipment and facilities, including accommodation, that may be required by the Inspecting Officer for the purpose of ensuring that the vehicle construction complies with this specification.

5.2.3 The following tests shall be carried out on the vehicle.

5.2.3.1 Static Lateral Stability

The static lateral stability of the fully laden vehicle, with a dummy crew, shall be not less than 38 degrees to the horizontal plane. If the vehicle fails in this test all modifications made to meet this requirement shall be at the Contractors expense.

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5.2 (Cont'd)

5.2.3.2 Braking

5.2.3.2.1 The fully laden vehicle shall be subjected to six consecutive foot brake applications from a speed of 20 miles per hour (MPH) to rest. The time between applications shall be sufficient only to allow for acceleration to 20 MPH. The vehicle shall stop on all applications within a distance of 28 feet. This test shall be carried out on a dry, smooth, level concrete or bitumen surface free from loose material.

5.2.3.2.2 One further brake test shall be done at 50 MPH, the vehicle shall be safely under control at all times until rest.

5.2.3.3 Handbrake

5.2.3.3.1 The emergency brake (handbrake) shall be tested immediately after the foot brake tests. The handbrake shall be applied once only at a speed of 20 MPH. The vehicle shall stop in a distance of 50 feet.

5.2.3.3.2 The applied hand brake shall be able to hold the fully laden vehicle (with gears in neutral position) on 1:1.67 grade, the vehicle shall be facing up or down the grade.

5.2.3.4 Acceleration

The fully laden vehicle shall be subjected to six consecutive acceleration tests (engine at normal operating temperature). The acceleration from rest to 30 MPH shall not take longer than 20 seconds. The tests shall be carried out on dry, level concrete or bitumen.

5.2.3.5 Vacuum Test

5.2.3.5.1 A vacuum test shall be carried out as a preliminary test, prior to the pump test below. The test procedure shall be as follows:

- a. The blanking cap shall be placed on the suction inlet of the pump, the engine started and the pump engaged to run at an engine speed of 3500 RPM until the vacuum gauge reads at least 24 inches of mercury.
- b. Stop the engine and watch the vacuum gauge, should the needle on the gauge fall to 10 inches of mercury or less within 1 minute all seals, joints, valves and connections shall be checked for air leaks.
- c. Replacement of faulty seals, valves or connections shall be the responsibility of the Contractor and the cost of the repairs and parts shall be borne by him.

5.2.3.6 Pump Test

5.2.3.6.1 The pump shall demonstrate the following requirements:

- a. It shall be self priming, by gravity, from the hose reel tank.

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5.2.3.6.1 (Cont'd)

b. Shall meet the requirements of Para 4.3.6 Table 1. The duration of the test shall be four hours, in which time the engine cooling and lubrication temperatures shall not exceed the limits laid down by DEF(AUST)500A.

5.2.3.6.2 Priming time for the pump shall be at a rate not less than one second per foot for suction lift up to 24 feet.

5.2.3.6.3 All pump services shall be operated and tested during pumping from open water.

5.2.3.6.4 The tests shall be conducted in 'still air' conditions. Hydraulic and other relevant conditions shall be in accordance with AS CB9.

5.2.3.7 Road Test

5.2.3.7.1 The fully laden vehicle shall be given a road test (shake down test) of not less than 30 miles on the highway and not less than 10 miles cross country.

5.2.3.7.2 Should any equipment or stowage suffer undue strain, distortion or damage the Contractor shall modify or replace the equipment at his expense, to ensure that a repetition of the failure does not occur.

6. PREPARATION FOR DELIVERY

Packing, packaging, preservation and marking shall be in accordance with the relevant sections of Specification DEF(AUST)1000 and other requirements, as detailed in the tender schedule or official order.

7. NOTES7.1 Intended Use

The vehicle will be used for fire fighting and fire crew training within Australian Defence Establishments.

7.2 Named Trade Items

Named trade items called upon in this Specification and reference documents may be replaced by an approved equivalent.

7.3 Ordering Data

Procurement documents shall specify the following:

7.3.1 Title, number and date of this Specification.
(see face page).

7.3.2 Details of the type of packaging, preservation, identification and labelling to be used by the Contractor.

7.3 (Cont'd)

7.3.3 Delivery instructions.

7.4 Amendments to Specification

Amendments to any section of the specification can only be affected by means of the 'Change Request' procedure. Should the Contractor desire amendments, these shall be passed, on the correct form through the Inspecting Officer to the Director of Equipment, Army Headquarters. The amendments become effective only on the issue of a Change Authority by the Director of Equipment on behalf of the Master General of the Ordnance.

7.5 Adherence to Specification

The Approving Authority for this Specification is the Director of Equipment on behalf of the Master General of the Ordnance, Army Headquarters. No departure from this Specification or associated Specifications will be approved by the Director of Equipment, unless by reason of the acceptance of a tender, full details of approved alternatives are incorporated in an eventual contract.

Copies of this Specification may be obtained from:

Chief Superintendent,
Army Design Establishment,
Private Bag No 12,
P.O. ASCOT VALE, Victoria, 3032

10. SCOPE

This ANNEX details the minimum requirements for reinforced plastic bodies for fire fighting vehicles.

10.1 Materials10.1.1 General

All reinforced plastics material used in the construction of reinforced plastics vehicle bodies shall be suitable for use under wet and humid conditions. The reinforced plastics material shall be classified as follows:

- 10.1.1.1 Polyester/glass fibre composite laminates where the reinforcement on the tensile side is continuous glass fibre filament. A test laminate prepared by the method described in para 10.4 of this ANNEX shall have not less than the physical characteristics given in Table 1 when determined by the appropriate test methods.

TABLE 1PHYSICAL CHARACTERISTICS OF TYPE 1 MATERIAL

Property	Requirement	Test Method
Tensile strength	18 000 lb/sq in	Method 301C of AS K94.3*
Flexural strength	24 000 lb/sq in	Method 304B of AS K94.3*
Minimum glass content	28 per cent	Para 10.5
Hardness	Barcol 40	Para 10.6

*AS K94, Methods of Testing Plastics: Part 3, Mechanical Properties.

- 10.1.1.2 Laminates other than polyester/glass fibre and laminates made from resins or additives for which the physical properties are not readily available. Such laminates may be used providing details of the laminates are submitted to the Inspecting Officer for approval.

- 10.1.2.2 Fasteners and Underwater Fittings. All fastenings and underwater fittings shall be of a suitable corrosion-resistant material, consideration being given to the possibility of galvanic attack of dissimilar metals per DEF(AUST)143.

10.2 Workmanship10.2.1 Body

The finished body shall be free of soft or tacky spots, cracking, crazing, fretting, delamination, lack of adhesion, air inclusion, discolouration, and sources of capillary attraction. There shall be no runs or curtains of resin and all edges shall be adequately sealed. After removal from the mould all internal and sharp external corners shall be mechanically tapped to ensure that the complete edge is found and free from voids. In the event of minor patching being required on the external surface adjacent to the gel coat, a suitable cap filling compound shall be used.

10.2 (Cont'd)

10.2.2 Gel Coat

A gel coat, where used, shall exhibit freedom from bubbles, crazing and other surface defects, and shall also show evidence of adequate adhesion to the base laminate. It shall be free from wrinkling or 'tripping' and have sufficient flexibility to withstand cracking upon flexion of the section of the laminate. Thickness of the gel coat shall be from 0.010 to 0.035 inches.

10.2.3 Hardness

The Barcol hardness of the body, when tested by the method described in para 10.6 of this ANNEX not less than 14 days after manufacture, shall be not less than 40.

10.3 RECOMMENDATIONS FOR THE DESIGN AND CONSTRUCTION OF REINFORCED PLASTICS VEHICLE BODIES

10.3.1 Bulkheads

Bulkheads shall be able to withstand the weight of any equipment fitted to the bulkhead, together with any other local loading. A factor of safety of 4 on the ultimate wet strength is recommended in this case.

10.3.2 Decks

Decks are classified into two types:

External decks - which may be subject to impact loading.

Interior flats - which are subject to loading of personnel and/or equipment.

10.3.2.1 External Decks - A uniform load at 150 lb/ft² shall be used for external decks, including the watertight tank. A factor of safety of 4 on the ultimate wet strength is recommended.

10.3.2.2 Interior Flats. In the case of interior lockers/hose locker, and non-watertight areas, a loading should be determined depending on the intended use of the area. Suggested loading is 60 lb/ft² in the static condition. This should be modified as necessary to allow for the accelerations due to road movement.

10.3.3 Connections of Deck to Shell

The joints between deck and shell shall be compatible with the moulding method used. Parts shall not be forced into positions, and a bond lap of 2 inches shall be used with heavier laminates. Where joints are used which leave an edge of a laminate that is not tapered or butted to an adjacent piece the edge should be sealed with a resin to prevent water absorption and delamination. The tank connection shall be watertight.

10.3.4 Secondary Bonds for Body Laminates in Two Parts

The connection of premoulded halves is of major importance and only woven rovings or cloth shall be used as reinforcements for this purpose, care being exercised that the warp is laid in the direction of the principal stresses. Woven glass staple fibre, chopped glass strand mat, or chopped glass rovings shall not be used as reinforcement for the purpose of such connections. Fig 1 illustrates two recommended methods of making such connections.

For joints which use an adhesive to connect cured or partly cured laminates, a layer of resin impregnated reinforcement shall be placed between the faying surfaces to act as an adhesive carrier and a resin-reinforcement to oppose the shear force in the joint.

10.3 (Cont'd)

10.3.5 Fittings

The loads, transmitted to the body by such fittings as chain plates, brackets, cleats, etc., should be carefully considered. Adequate strength shall be provided directly under the load to prevent local failure, and to spread the load over an adequate supporting area. These supporting areas shall be tied into the main members of the body, such as transverse or longitudinal frames, bulkheads etc.

10.3.6 Fastenings

The selection of the type of fastenings to be used shall depend on the load, laminate strength and thickness, location, etc. It is recommended that the minimum spacing of bolts with respect to each other and to the side or edge of the laminate shall be as given in Table 2.

TABLE 2
MINIMUM SPACING OF BOLTS

Type of Reinforcement	Edge Distance Diameters	Side Distance Diameters	Spacing Diameters
Woven glass roving or cloth	2.5	2.5	3
Glass mat	2.0	2.0	3

The bearing strength in way of bolts as a function of ultimate tensile strength of laminate is given in Table 3. To determine the maximum bearing stress at the bolt which the laminate will withstand without permanent deformation or breakdown, the ultimate tensile strength of the laminate is multiplied by the number given in the 'no permanent deformation' or 'maximum load' columns, respectively, in Table 3. If several types of reinforcement are used in the laminate, the bearing stress value should be determined by an appropriate test. If no test information is available, the bearing stress value may be determined for each type of reinforcement and the lowest of these values applied to the whole laminate.

10.3.6 (Cont'd)

TABLE 3
LAMINATE BEARING STRENGTH

Type of Reinforcement	Laminate Thickness	Bolt Dia.	No Permanent Determination	Max Load
Woven glass roving or cloth	$\frac{1}{4}$	$\frac{1}{4}$	0.641*	0.914*
Glass mat	$\frac{1}{4}$	$\frac{1}{4}$	1.87*	2.89*

*Bolt bearing stress divided by ultimate tensile strength of laminate.

10.3.7 Fastenings (Threaded)

Where threaded type fasteners are used, the fastener shall always be perpendicular to the plies of reinforcement. Edge fastening by this method is not recommended. Fasteners of this type shall have side and edge distances equal to $2\frac{1}{2}$ times the fastener diameter and a spacing 3 times the fastener diameter.

10.4 TEST LAMINATE10.4.1 Relationship to Body Structure

The test laminate shall be laid up at the same time and shall be of the same cross-section as the body structure.

10.4.2 Reinforcing Material

Reinforcing material shall be identical to that used in the actual lay up of the body laminates.

10.4.3 Resin System

The resin/catalyst/accelerator or resin/catalyst system shall be mixed in proportions in accordance with the resin manufacturer's instructions.

10.4.4 Curing Conditions

The curing conditions shall be identical with those used in curing the body structure.

10.4.5 Preparation

All sawing machining and finishing operations used in preparing the test specimens shall be slow enough to avoid heating the specimen more than is absolutely necessary.

10.4 (Cont'd)

10.4.6 Size

A cured slab 12 by 12 in of uniform thickness is required.

NOTE: It is important to indicate on the test laminate the direction of the warp filaments where woven reinforcement is used.

10.4.7 Evaluation

Where for design purposes, it is necessary to evaluate a test laminate, the method given in B.S. 3532, Unsaturated Polyester Resin Systems for Low Pressure Fibre Reinforced Plastics, shall be followed.

10.5 DETERMINATION OF GLASS CONTENT

10.5.1 Method A

For Laminates Containing Resin and Glass Reinforcement Only. The weight of glass shall be determined by incinerating to constant weight a specimen of the laminate. A muffle furnace having an operating temperature of not less than 1200°F shall be used and weighing shall be made to constant weight. At least five specimens, each weighing not less than 5 g, shall be tested and the results averaged, and the glass content expressed as percentage by weight.

10.5.2 Method B

For Laminates Containing Resin and Glass and Other Fillers or Reinforcements. Before testing, the precise composition of the laminate shall be reported by the fabricator, giving the other component than glass or resin, eg, mineral earths, synthetic fibres, asbestos fibres, as a ratio of this component to the resin. Incineration shall be carried out as in Method A and a suitable allowance made for other volatile matter than glass or resin, eg, mineral earths, synthetic fibres, asbestos fibres, as a ratio of this component to the resin. Incineration shall be carried out as in Method A and a suitable allowance made for other volatile or non-volatile matter than glass, eg, loss of weight of calcium carbonate or complete destruction of synthetic fibres.

10.6 DETERMINATION OF HARDNESS

10.6.1 Principle

This test is a method of determining the indentation hardness of the hull, which gives an indication of the degree of cure of the structure.

10.6.2 Apparatus

The instrument used shall be the Barcol Impressor, Model GYZJ-934-1, made by the Barb-Colman Co., Rockford, Illinois, USA.

10.6 (Cont'd)

10.6.3 Procedure

The surface to be tested shall be substantially flat over 1 ft square area and shall have a smooth surface. The surface should be **at least** 0.1 in thick. The Barcol Impressor shall be applied to the surface and pressed firmly, when the dial gauge will indicate a reading which shall be noted instantaneously. The procedure shall be repeated in random fashion over the surface of the laminate.

10.6.3.1 Readings shall not be taken on the gel coat.

10.6.3.2 High readings well away from the average shall be separated and the remainder averaged. A minimum number of ten readings shall be averaged.

10.6.4 Notes on Operation of Test and Sources of Error.

10.6.4.1 The Barcol tester should be examined frequently for wear in the needle and should be calibrated against the standard metal disc supplied with the instrument.

10.6.4.2 Some sources of error are:

- a. Worn Indentation Needle. The needle should be examined at regular intervals and if showing signs of wear or flatness should be replaced. Worn needles will give high results.
- b. Curvature of Surface. A concave surface will tend to give low readings and a convex one high readings.
- c. Surface Defects. High readings will be obtained where glass fibres are near the surface underneath the indentation needle. Variable and often low readings will sometimes be obtained where the surface is not completely smooth, as the needle may not strike normal to the surface. Surfaces exposed to air may give lower readings, as a thin layer of partially cured resin may be present.
- d. Time Effects. The readings should be taken instantaneously, as a reading several units lower will occur if the needle is allowed to sink into the resin. A continued rapid drop may indicate poor cure or use of a flexible type of resin.

10.7.1 Five test specimens shall be prepared as described in Method 304B of AS K94.3, * and shall then be boiled in distilled water at ordinary room temperature for at least 15 minutes and a maximum time of one hour. They shall then be dried with a clean cloth and their flexural or tensile strengths determined in the direction of maximum strength as in Method 304B or 301C, respectively of AS K94-3, within 5 minutes of removal from the cold water.

* AS K94, Methods of Testing Plastics; Part 3, Mechanical Properties. (B.S. 2782 : 1965 endorsed with amendments.)

10.8 GLOSSARY OF CERTAIN TERMS USED IN STANDARD

10.8.1 Accelerator

A chemical compound used in conjunction with a catalyst (q.v.) to enable polymerisation to take place at room temperature.

10.8.2 Catalyst

In the sense used in this standard a catalyst is a chemical compound, generally an organic peroxide, which initiates the polymerisation of a polyester resin.

10.8.3 Cure

The process of hardening a thermosetting resin under the influence of heat and curing agents.

10.8.4 Filler

A substance added to a resin to extend it or to give it special properties.

10.8.5 Gel Coat

A thin layer of unreinforced resin on the outside of a reinforced plastics moulding; the gel coat hides the fibre pattern of the reinforcement, protects the bond between resin and reinforcement and can provide special surface properties; it is often pigmented.

10.8.6 Hardener

See catalyst.

10.8.7 Lay-up

Resin impregnated reinforcement in position on a mould before polymerisation.

10.8.8 Plasticizer

A chemical compound added to some plastic to make them softer or more flexible.

10.8.9 Polyester

(In the sense used in this standard) abbreviation for 'unsaturated polyester resin'.

10.8.10 Reinforced Plastics

(In the sense used in this standard) mouldings and laminates made of polyester or other resin reinforced with (generally) glass fibre.

10.8.11 Tripping

A surface defect shown as severe wrinkling of parts, or of the whole, of the gel coat.

1	2	3	4	5	6	
5	4210	66-031-1986	EXTINGUISHER, fire, vapourizing liquid. BCF 1b (less bracket)	1	-	NX
6	2610	66-010-7864	INNER TUBE, PNEUMATIC TYRE, truck type 7.50-16, valve TR 15	1	-	NX
7	2540	66-018-2063	MIRROR ASSEMBLY, REAR VIEW, 5 in diam w/c Arm	2	-	NX
8	2590	66-016-2427	PLATES Veh Unit, and Formation Sign	4	-	X
9	2610	66-010-7865	TYRE, PNEUMATIC, truck type, CCND, lug type 7.50-16 by 6 ply	1	-	NX
10	7530	AB416	VEHICLE LOG BOOK - 'B' Vehicles, Includes Cover and Sections 1, 2, 3, 4A, 5	1	-	X
11	7530	AB416-4-49	Section 4, Servicing Schedule For Trucks ¼ ton and 3/4 ton, GS, Land Rover Series 2	1	-	X
12	7530	AB417	VEHICLE RECORD BOOK, 'B' Vehicles	1	-	X
13	2530	66-010-5971	WHEEL, PNEUMATIC TYRE, disc, well base, 16 in	1	-	NX
14	2540	66-019-3878	BELT AUTOMOBILE SAFETY LAP, Front Seat	3	-	NX
15	4210	66-016-0821	<u>PART 2</u> ADAPTER, STRAIGHT, FIRE HOSE - 4 in BSS 336, female suction coupling to 2½ in BIC male coupling	1	-	NX
16	4210	66-021-8246	BIC, 2½ in - female to female	1	-	NX
17	4210	66-021-8250	male to 3/4 in hermophradite hose reel fitting	1	-	NX
18	4210	66-014-6753	BIC, female coupling, to universal thread female coupling	2	-	NX
19	4210	NIC	BRANCH PIPE, Plastic/Aluminium Angus A.W.G. 2C c/w 2½ in BIC male	2	-	NX
20	4210	NIC	BRANCH PIPE, Fire Hose 2½ in BIC inlet 1-3/4 in 11 tpi outlet, 6 in lg, c/w 1 in outlet nozzle	1	-	NX
21	4210	66-020-2652	BRANCH PIPE Straight Jet and Water Fog Type for 3/4 in Hose Reel c/w Hermophradite Coupling (Quell Type TP14)			
22	4210	66-021-7831	BRANCH PIPE, Foam, BIC 2½ in male, c/w 5 ft Rubber Hose and Pick-up Tube (PB5X model) Pyrene or equivalent	1	-	NX

1	2	3	4	5	6
23	4210	66-016-8279	EXTINGUISHER FIRE - DRY CHEMICAL, 5 lb	1	- NX
24	4210	66-016-4119	DRY CHEMICAL, 20 lb	1	- NX
25			Extinguisher, Fire Vapourizing Liquid, BCF 12 ft complete with Bracket Gravener G848	1	- NX
26	4210	66-022-2305	HOSE ASSEMBLY, RUBBER, 3 braids, 3/4 in ID w/hermophradite coupling, 120 ft long	1	- NX
27	4210	66-014-7202	HOSE ASSEMBLY, RUBBER, suction fire hose, 4 in ID by 96 in lg, w/aluminium alloy couplings screwed 4 in by 3-rd tpi	3	- NX
28	4210	66-014-9047	HOSE, SYNTHETIC FIBRE, RUBBER LINED, 100 ft lg c/w BIC couplings, fire hose, aluminium alloy, 2½ in, BIC delivery	12	- NX
29	4210	66-015-9335	HOSE, SYNTHETIC FIBRE RUBBER LINED 2½ in ID 25 ft long c/w BIC male and female couplings	1	- NX
30	4210	NIC	HOSE, PLASTIC, c/w Hermophradite Coupling, 5 ft, Knapsack Filling	1	- NX
31	4210	66-016-2619	COVER, SUCTION HOSE, 4 in Canvas 8 ft long	3	- NX
32	4210	66-021-8252	HYDRANT, FIRE, aluminium alloy, portable, BIC 2½ in Double HD outlet w/base adaptor	1	- NX
33	4210	66-018-0022	<u>SIAMESE CONNECTION, FIRE HOSE -</u> 2½ in collecting/dividing, British Instantaneous Coupling, c/w double male	1	- NX
34	4210	66-018-0021	2½ in breeching/collecting, British Instantaneous Coupling adaptor	1	- NX
35	4210	66-021-3292	SUCTION COLLECTING HEAD, 4 in 3rd tpi, to 2½ in BIC male, 3 way	1	- NX
36	4210	66-014-6755	<u>STRAINER -</u> BASKET, SUCTION HOSE	1	- NX
37	4210	66-014-6754	SUCTION, FIRE HOSE, aluminium alloy, 4 in hose	1	- NX
38	4210	66-021-5110	SLEEVE, BASKET STRAINER, canvas, suction hose	1	- NX
39	6230	NIC	SEARCHLIGHT 221 mm portable 12 V Hella No 1507, Quartz Iodine	1	- NX

1	2	3	4	5	6	
40	6230	66-018-8140	LANTERN, ELECTRIC, searchlight, portable 'Nife' type S6	1	-	NX
41	4210	66-021-1675	FILLER, GOOSENECK, w/2½ in B1 Coupling	1	-	NX
42	5120	66-015-9963	SOCKET, hydrant key and bar, telescopic	1	-	NX
43	4210	66-021-4710	SPINDLE CAP, HYDRANT, aluminium alloy, false, 1-3/8 in sq drive end	1	-	NX
44	5120	66-014-7203	SPANNER, adjustable, 2½ in 5 in fire hose couplings	2	-	NX
45	5120	NIC	ADAPTOR, Hydrant Spindle MFB Pattern	1	-	NX
46	4210	66-032-1597	AXE, PICK HEAD, FIREARMS, GP with Insulated Handle	1	-	NX
47	5120	NIC	SPANNER HYDRANT SPINDLE, MFB Pattern	2	-	NX
48	4210	66-022-0432	JACKET, FIRE HOSE, aluminium alloy, adjustable, 8½ lg	2	-	NX
49	4210	66-021-1674	LADDER, FIRE EXTENSION, Wood, 2 sections 16 ft lg extended	1	-	NX
50	4210	66-017-9371	BLANKET, Fire, Asbestos, 72" x 72" c/w Metal Case	1	-	NX
51	4020	66-021-4708	ROPE, Polyester, 2 in circ. by 50 ft long, suction line	1	-	NX
52	4210	66-018-0017	RAKE FORREST FIRE, 'RAKKO' Type	1	-	NX
53	5110	66-011-0377	AXE, SINGLE BIT, 4½ lb	1	-	NX
54	5120	66-012-6821	HANDLE, MATTOCK-PICK, 5 lb pick	1	-	NX
55	5120	66-012-6893	PICK, DIGGING, w/o handle, 5 lb	1	-	NX
56	J1	JAA3664	SHOVEL, GS(Aust)	1	-	NX
57	NIC	ADE(V)37-75	BOX MISCELLANEOUS FIRST AID	1	-	NX
58	6545	66-019-9083	FIRST AID KIT General Purpose	1	-	X
59	4240	66-012-8944	GOGGLES INDUSTRIAL MULTIPURPOSE (prs)	3	-	NX
60	8415	66-017-5522	GLOVES, Cloth, Asbestos (prs) 3	1	-	NX
61	NIC	NIC	BOX TOOLS, Steel (ADE(V)37-78 & 119)	1	-	NX
62	4930	99-942-6975	GUN GREASE, Hand Type	1	-	NX
63	5110	66-01305245	FRAME Hand Hacksaw	1	-	NX
64	5110	66-014-9434	BLADE HAND Hacksaw 18 tpi 12 in	2	-	X

1	2	3	4	5	6	
65	5110	66-014-9436	BLADE HAND Hacksaw 32	2	-	X
66	5110	66-011-8035	CHISEL, Cold, Hand Flat 3/4 in	1	-	NX
67	5120	66-013-6747	WRENCH, Open End, Adjustable 10 in	1	-	NX
68	5120	66-010-8484	HAMMER, ENGINEERS, Ball Pein 1 lb 8 oz	1	-	NX
69	5120	66-014-8024	WRENCH, PIPE, 'Stiltson' 14 in	1	-	NX
70	5120	66-014-4241	SCREW DRIVER, Cellulose/Acetate Handle Square Shank 12 in long by 3/8 in	1	-	NX
71	5120	66-012-0782	BRUSH, Wire Scratch 1½ in by 6 in 76 Knot	1	-	NX
72	5120	66-011-1427	CROWBAR, chisel and point ends, 48 in by 1-1/8 in	1	-	NX
73	5110	66-011-6707	CUTTERS, BOLT, straight jaw, 24 in	1	-	NX
74	8465	66-014-2482	BAG, Water Canvas 1½ gallon	2	-	NX
75	5120	66-014-0253	PLIERS, Side Cutting 8 inch	1	-	NX
76	NIC		CAP, BLANKING, DELV. VALVE, Male, Aluminium/Alloy 2½ in BIC 'Titan' 402	2	-	NX
77	NIC		CAP, BLANKING, Tank Fill, Female, 2½ BIC Alum/Alloy, 'Titan' 403	1	-	NX
78	NIC		CAP, Blanking, 4 in Screwed 3 Round tpi	1	-	NX
79	4320	66-023-5762	GASKET STAND PIPE (Perrie No 9/FBI)	1	-	X
80	5330	66-023-3389	PACKING PERFORMED, Sealing, Suction Tube Cap (Coventry Climax No FP318)	1	-	X
81	5310	66-023-3680	WASHER SHOULDERED 2½ in BIC (Coventry Climax FWP 1003)	1	-	X
82	NIC		USER, HANDBOOK for fire fighting equipment	1	-	X
83	7610	66-022-0101	OPERATING INSTRUCTIONS Pyrene Foam Branch Model FB-5X	1	-	NX
84	NIC		LAMP, QUARTZ Halogen 12 V 55 W warning light, reversing light 'Hella' C1255	1	-	X
85	NIC		LAMP QUARTZ Halogen 12 V 55 W fog light 'Hella' YC 1255	1	-	X

1		2	3	4	5	6
86		NIC	LAMP INCANDESCENT 12 V Spotlight	1	-	X
87	6240	66-010-8797	13.5 V, 4 Cp, 'G' shape, clear	2	-	X
88	2990	66-010-5974	CRANK, HAND, engine starting	1	-	NX
89	5120	66-021-1609	Tommy Bar	1	-	NX
90	LV6/ MT1	TSE(M)55-2	BASE PLATE, jack, wooden, 10 in x 10 in x 1½ in	1	-	NX
91	LV6/ MT3	1070-Z	BOX, tin, spare bulb, empty	2	-	NX
92	LV6/ MT14	0493-Z	CAP, tyre valve	1	-	NX
93	LV6/ MT14	6721-Z	CORE, tyre valve, insides	1	-	NX
94	LV6/ MT1	0964-Z	GAUGE, pressure, tyre, 10/80 lb	1	-	NX
95	LV6/ MT1	6653-Z	JACK, lifting screw, 5 cwt, 5¼ in min height, 12 in max height, c/w handle	1	-	NX
96	6230	99-942-7876	LIGHT, EXTENSION, c/w cable and plug, w/o globe	1	-	NX
97		LV6-MT11	ROPE, Towing Steel Light	1	-	NX
98	LV6/ MT1	TSE(V)68-2 1000-Z	POURER, oil, beaked, 1 pint	1	-	NX
99	LV6/ MT1	1004-Z	PUMP, tyre, hand operated, vehicle type c/w hose and adaptor	1	-	NX
100	LV6/ MT2	MV1424-Z	ROLL, tool, vehicle, (leather only)	1	-	NX
101	5120	66-014-3819	SCREWDRIVER, cellulose-acetate handle, Flat Tip 6 in by 5/16 in	1	-	NX
102	LV6/ MT2	MV1545-Z	SPANNER, box, wheel nut, .920 in a/f (heavy)	1	-	NX
103	5120	66-021-1609	WRENCH, tubular, Box Hex, 14 mm, (11/16 in x 13/16 in) DE	1	-	NX
104	2920	66-010-7868	SPARK PLUG, 14 mm, Normal, 3/4 in reach	1	-	X
105	Y3	YCA 0397	TAPE, insulating, 3/4 in, 10 yd roll, rolls	1	-	X
106	6145	66-014-2971	WIRE, ELECTRICAL, No 20 SWG lbs	¼	-	X
107	4210	66-016-5781	FOAM, Liquid Compound Fire Extinguishing 5 gal	2	-	X

1		2	3	4	5	6
		1. 2. 3.	<p style="text-align: center;"><u>PART 3</u></p> <p><u>ROLE</u> For use in the fighting of fires and training of firemen and Army units.</p> <p><u>GENERAL DESCRIPTION</u> Fire fighting equipment mounted on a self-propelled chassis (Land Rover series 2 or 2A, 109 in WB) modified in accordance with Specification Army(Aust)47 and equipped to employ pumped water and hand extinguishers as extinguishing agents.</p> <p><u>ASSOCIATED DOCUMENTS</u> A. Maintenance Scale No AUST/MT/147 (chassis only)</p> <p><u>FOOTNOTE:</u> a. Spare b. New Items introduced.</p>			

DRAFT COMPLETE EQUIPMENT SCHEDULE

FOR

SEARCH LIGHT 221mm portable 12
"HELLA" No. 1507 Quartz Iodine

			AMENDMENTS				
			BULLETIN No.	DATE			
<u>PART 1 - BASIC ITEM</u>							
<u>PART 2 - ASSOCIATED STORES</u>							
<u>PART 3 - INFORMATION SECTIONS</u>							
1.							
Item No.	Stock No.		Designation	Quantity		Exp Class	Foot note ref.
	Sec/Class	Item Ident No.		a	b		
1.	6230	NIV	<u>PART 1</u> SEARCHLIGHT 221mm portable 12V "Hella" No. 1507, Quartz Iodine.	-	1	NX	
2.	6230	NIV	<u>PART 2</u> TRIPOD, SEARCHLIGHT, Folding "Hella" 8001.	1	-	NX	
3.	6230	NIV	CONNECTING PIECE "Hella" 8006.	1	-	NX	
4.	6230	NIV	SUPPORT BASE "Hella" 8002.	1	-	NX	
5.	6230	NIV	LENS, Diffusing, clear, "Hella" 2.9806.06.	1	-	NX	
6.	6230	NIV	BULB, QUARTZ IODINE "Hella" Y1255 (12V, 55W) (P14.5t CAP) (SPARE).	1	-	NX	
7.		NIV	COVER, Canvas.	1	-	NX	
8.		NIV	CABLE REEL, 10" Search Light c/w 120ft of cable and connector.	1	-	NX	