ARMY CODE No:
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AIR PUBLICATION
5102 A (UH)

AMBULANCE; 4 STRETCHER, 4x4, ROVER

(with SPECIALIST EQUIPMENT)

USER HANDBOOK

March 1981

BY COMMAND OF THE DEFENCE COUNCIL

MINISTRY OF DEFENCE

PUBLICATIONS AUTHORITY

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AMENDMENTS

It is essential that this book be kept up to date with all amendments. Immediately an amendment is inserted, particulars will be entered hereunder.

Amdt No.	Date	Signature	Amdt No.	Date	Signature
1	14/12/83	W. Wardlaw.			
2	14/12/83	W. Wardlaw.			

NOTES OF READERS

The subject matter of this publication may be affected by Defence Council Instructions. Emer Modifications Miscellaneous Instructions or General Orders and Modification Leaflets. If possible, amendments are issued to correct this publication accordingly. When an Instruction or Leaflet contradicts any portion of this publication, the Instruction or Leaflet must be taken as the overriding authority.

The lubricants and lubrication periods to be used will be those quoted in the Servicing Schedule or Air Diagram.

The information in this publication covers the following vehicles:

Ambulance, 4 stretcher, 4 x 4, Rover
NSN2310-99-893-4673 AVC No 1054-0750

Ambulance, 4 stretcher, 4 x 4, LHD, Rover
NSN2310-99-893-4674 AVC No 1054-5750

Ambulance, 4 stretcher, 4 x 4, Tropical, Rover
NSN2310-99-893-5716 AVC No 1054-2750

Ambulance, 4 stretcher, 4 x 4, Tropical, LHD, Rover
NSN2310-99-893-5717 AVC No 1054-6750

WARNING

IN AMBULANCES DESIGNED FOR, BUT NOT YET EQUIPPED WITH, THE AUTOMATIC RESUSCITATOR SYSTEM (PAGE 23); USERS ARE WARNED NOT TO USE THE ASSOCIATED OXYGEN SYSTEM (PAGE 25). THIS WARNING IS GIVEN TO PREVENT POSSIBLE LEAKAGE OF OXYGEN FROM THE TEMPORARY BLANKING PLUGS FITTED TO THE ENDS OF THE OXYGEN PIPES IN READINESS FOR INSTALLATION OF THE AUTOMATIC RESUSCITATOR CONTROL BOXES.

ASSOCIATED PUBLICATIONS

ARMY	Code No
Servicing Schedule	61287
Parts List	22726
User Handbook (Rover 1 tonne chassis)	22260
Complete Equipment Schedule	31234
EMERS	
Resuscitator Medical & Dental	E 840-843
Resuscitator Test Set Medical & Dental	Y 090
Air Cooling (to be issued)	
Technical Handbook (chassis)	Wh Veh Q 052
Technical Handbook (body)	Wh Veh Q 052/1
RAF	**AP No**
Data Book of RAF Vehicles	2782
Manual for Mech Trans Servicing	3260 Series
RAF Engineering - Mech Trans	1464E
User Handbook (Rover 1 Tonne Chassis)	AP5046A (UH)
Technical Handbook	AP4590 (sect 1)

Refer to following AD's for Servicing:

AD8287/1 issue 3
AD8288/B13 issue 2
AD8289/C1 issue 2
AD8289/C2 issue 3
AD8289/C8 issue 1
AD8290/ issue 1

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SECTION 4

DESTRUCTION OF EQUIPMENT

LIST OF ILLUSTRATIONS

RESUSCITATION

TREATMENT OF THE NON-BREATHING CASUALTY

NOTICE

The inclusion of the emergency resuscitation placard (MOD Form 656) in Military Technical Publications has been discontinued.

This notice is to be retained in the publication until removed by amendment instruction.

Section 1

General Description

Chapter 1

INTRODUCTION

1. Apart from new front and rear shock absorbers, British Leyland UK Ltd. (Rover Part Nos NRC4394 (Front) and NRC4395 (Rear), the basic cab, chassis, suspension and chassis electrical equipment is identical to the Truck General Service, 1 Tonne 4X4 Rover, information on which is given in AP5064A (UH)/AC22260.

2. This publication gives information on the additional or alternative equipment fitted for the ambulance role.

3. The 1 Tonne Ambulance is designed to carry four stretcher patients or eight sitting patients and a medical attendant within an enclosed body mounted on a 1 tonne (Rover) chassis, and be of medium mobility.

4. The vehicle is available in either right or left-hand drive modes and is designed with a casualty compartment separated from the driver's cab. It can be fitted with Automatic Resuscitation equipment and/or Air Cooling equipment. A specially modified vehicle, fitted with Resuscitation equipment is available for the Airfield Crash Rescue Role. The driver's cab is provided with a single passenger seat.

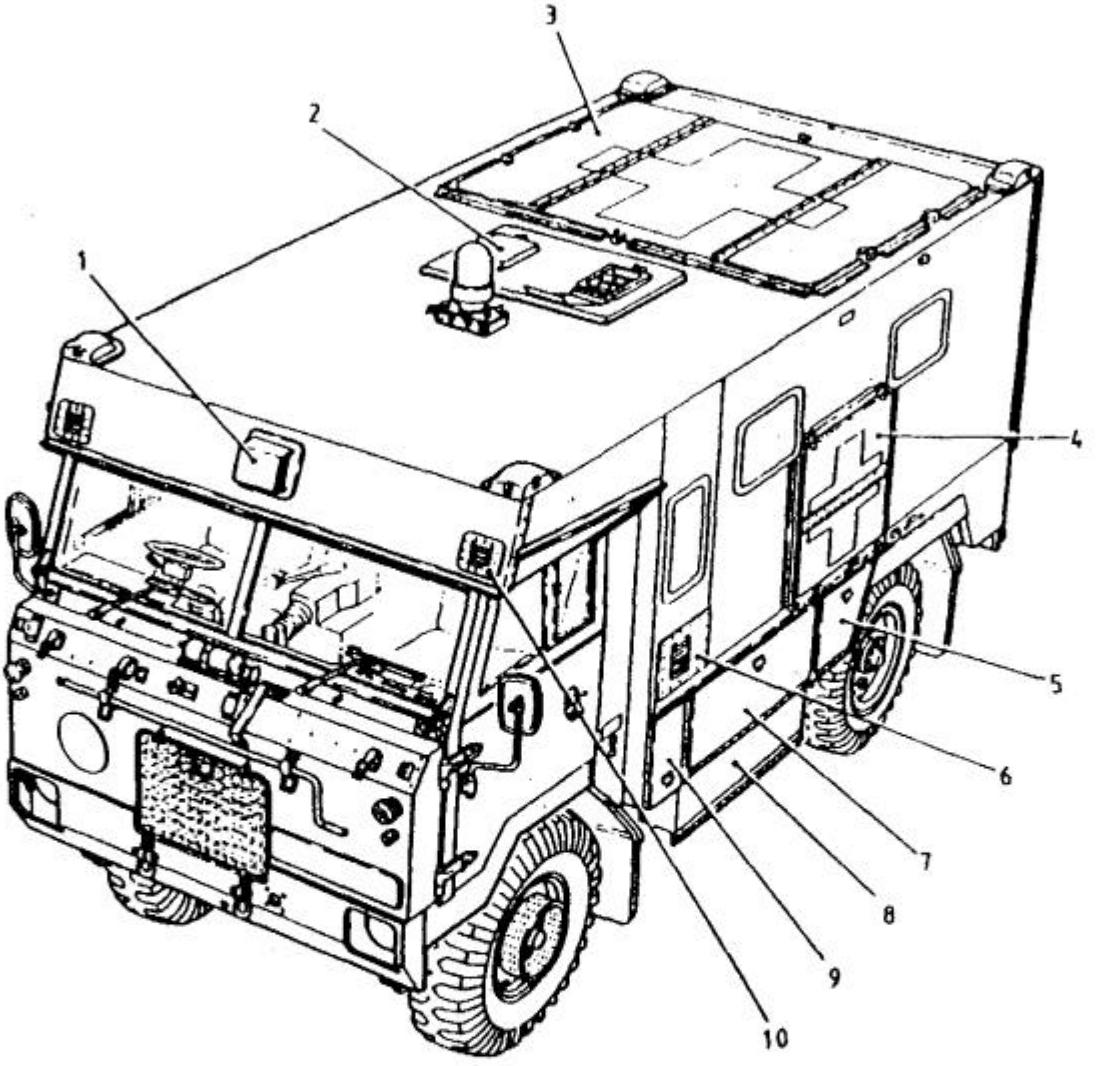
DATA

Vehicle Dimensions (Fig 4)

Length	4394mm (173 ins)
Width	2130mm (83 3/4 ins)
Height (unladen) - approximately	2500mm (98 ins)
Height (with flasher beacon fitted)	2690mm (106 ins)

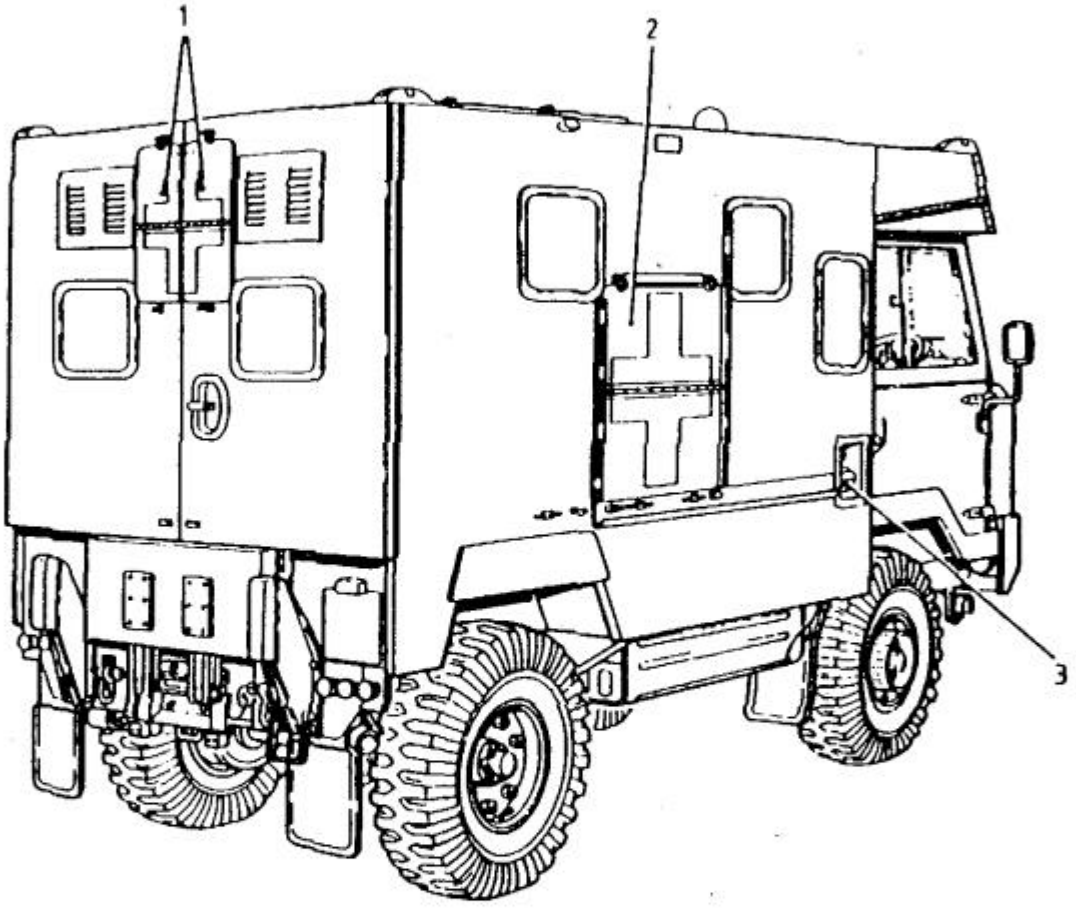
Internal dimensions

Length (Bulkhead to Rear Doors)	2375mm (93 1/2 ins)
Height	1525mm (60 ins)
Width	1975mm (77 3/4 ins)
Width (of centre gangway)	628mm (24 3/4 ins)
Height - Top of Bottom Stretcher to Bottom of Top Stretcher Frame	460mm (18 ins)
Height - Top of Top Stretcher to Roof	460mm (18 ins)



1	Air intake (resuscitation vehicles only	6	Heater air intake
2	Escape hatch	7	Spare wheel stowage
3	Hinged flap	8	Battery stowage
4	Hinged flap	9	Engine air filter cover
5	Stowage locker	10	Patient fresh air intake

Fig.1 Three-quarter front view



1 Hinged flaps 2 Hinged flap 3 Fuel filler cap

Fig 2 Three-quarter rear view

DATA (Contd.)

Lamps

Light	Make	Watts	Volts	Type
Map reading	Lucas Pt.No. 53837	6	12	MCC
Flashing beacon		21	12	SBC
Body	FV959836	21	12	SBC
Blackout	BMAC 588	5	12	SBC
Medical inspection	KELVIN NORTON	24	12	SBC
Fog lamps (Front)	Lucas Type FT8 Pt. No. 55349		12	
Fog lamps (Rear)	Lucas Type FV760752		12	

Fuses

Location	Circuits	Type and rating
Block A		
1	Ignition switch Terminal 1	Cartridge 35A (17A continuous)
2	Auxiliary relay, Terminal C2 6-way lighting switch, Terminal 6 Hazard warning switch, Terminal +30 stop lamp switch	Cartridge 35A (17A continuous)
3	Auxiliary relay, Terminal W1 Ignition switch, Terminal 2 Windscreen Wiper switch, Terminal 4	Cartridge 35A (17A continuous)
4	Warning lights connector Ignition coil ballast resistor Diff. Lock switch connector Fuel content voltage stabilizer	Cartridge 35A (17A continuous)

SPECIAL TOOLS AND EQUIPMENT (Contd.)

Carried (contd.)

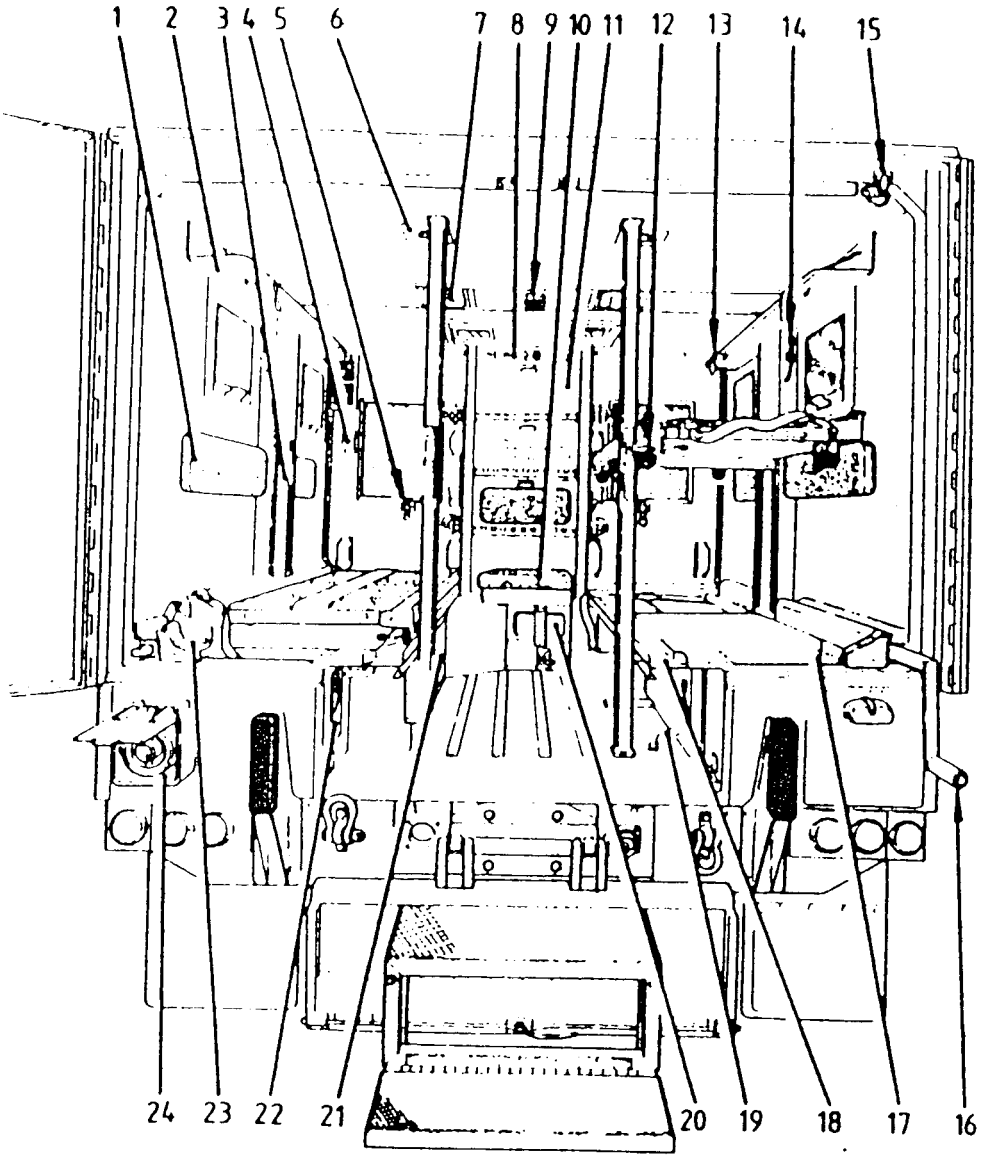
Item			NATO Stock Number	Qty.
Spare wheel assy				
Comprising:	Wheel disc	6.50L x 16	Rover NRC 0130	1
	Tyre	9.00 x 16	GMT14/2610-99-804-5425	1
	Tube inner	9.00 x 16	GMT14/2610-99-804-5822	1
Spanner, wheel nut			7RU/5120-99-817-1229 (Rover 1569687)	1
Handle starting			Rover 595120	1
Jack lifting, triple screw			6MT1/5120-99-825-4616 (Rover 592220)	1
Shaft (Metal handle)			Rover 543300	1
Shaft (Wooden lever)			Rover 543301	1
Pick, Head 2½ lb			J1/5120-99-120-5933	1
Helve, pick 28 in			J1/5120-99-120-5934	1
Shovel G.S.			J1/5120-99-120-7407	1
Camouflage, net (24 ft x 24 ft)				1
Key (Taper, T)				2

MEDICAL EQUIPMENT CARRIED - ARMY ROLE

Title	NATO Stock Number	Qt
Cup, Feeding	J1/6530-99-120-4777	2
Bed pan	6530-99-120-7832/21G	1
Urinal, male patient	6530-99-129-6924/21G	1
Blanket, single size, green	7210-99-120-6989/21	16
Outfit, First Aid, large	9A/03360	1
Pillow, stretcher, ambulance Mk.2	KC/6530-99-129-1635	4
Stretchers, ambulance Mk.2	KC/6530-99-129-6837	4
Broom, hand sweeping	7920-99-943-2803	1
Con. plastic high density polythene, 1 Gall	6MT1/7240-99-809-6628 (FV 959872)	2
Lamp inspection (Medical attendant)	FV959888 (Handy-Hook-a-Lite Kelvin Norton Pt. No. KN/HHL)	1
Resuscitator portable, folding	6515-99-211-3516	1
C/W two face pieces, in case		
Airway, pharyngeal, size 1	6515-99-210-3025	1
Airway, pharyngeal, size 2	6515-99-210-3026	1
Airway, pharyngeal, size 3	6515-99-210-3027	1
Suction apparatus, surgical, foot operated - Cape, Lightweight	6515-99-210-5635	1
Sodium lactate compound injection BP 1 litre disposable pack with giving needle	6505-99-210-2003	2
Nexton 110 in NaCl injection BP 1 litre disposable pack with giving needle	6505-99-211-1600	2
Footpiece and support, Thomas Leg Splint metal adj. in width	6515-99-210-7870	1
Splint, Leg, Thomas, fixed ring 20 ins to 28 ins	6515-99-270-5588	1

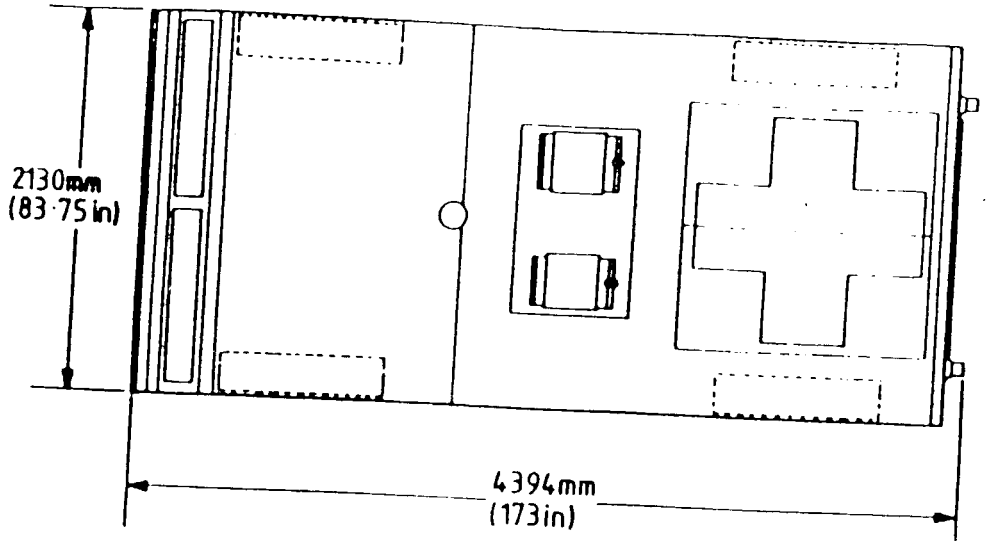
Medical (cont'd.)

Title	NATO Stock Number	Qty.
Stretcher bar, leg splint supporting with strap and buckle	6515-99-210-7871	1
Oxygen BP 44 cu ft in bull nosed Valve cylinder	6505-99-942-3298	2
Basin Emesis polyprolene 12 in Kidney shaped		
Regulator oxygen-fixed output 60 p.s.i. BOC Pt. No. S60-MG		



1 Squabs (Typical, 6 positions)
2 Stretcher stowage shelf (Typical, 2 positions)
3 Upper stretcher lift assembly (Typical, 2 positions)
4 Stretcher buffer bracket (Typical, 8 positions)
5 Oxygen probe adaptors (Typical, 2 positions)
6 Infusion bottle hook (Typical, 4 positions)
7 Compartment light (Typical, 2 positions)
8 Accessory panel
9 Blackout light
10 Attendant's seat
11 Bulkhead cupboard (Typical, 2 positions ACU vehicles, 3 positions, resuscitation vehicles)
12 Stretcher lift clamp (Typical, 4 positions)
13 Upper stretcher stowage restraint strap (Typical, 4 positions)
14 Stretcher lift clamp (Typical, 4 positions)
15 Blackout switch override
16 Stretcher lifting handle
17 Storage space (Typical, 2 positions)
18 Lower stretcher runner (Typical, 4 positions)
19 Lower stretcher restraint at 2 positions)
20 Water bottle stowage
21 Gangway storage locker
22 Contact breaker boxes (RAF vehicles only)
23 Stretcher restraint strap (Typical, 8 positions)
24 Snatch plug (RAF vehicles only)

Fig.3 Back interior view



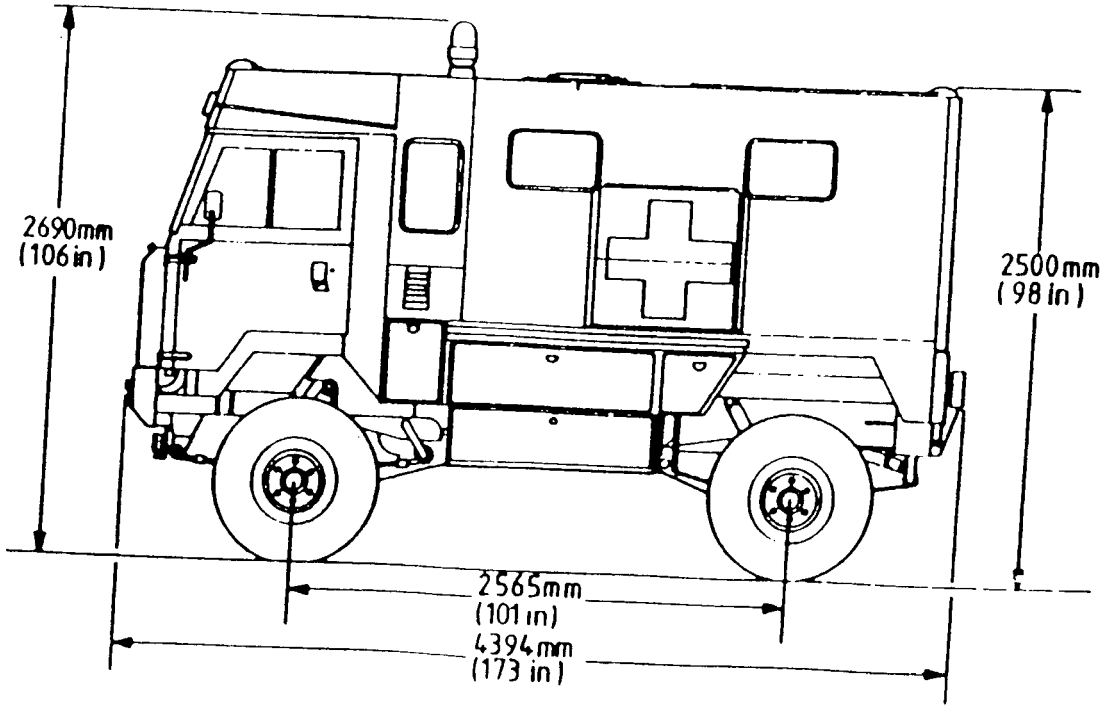


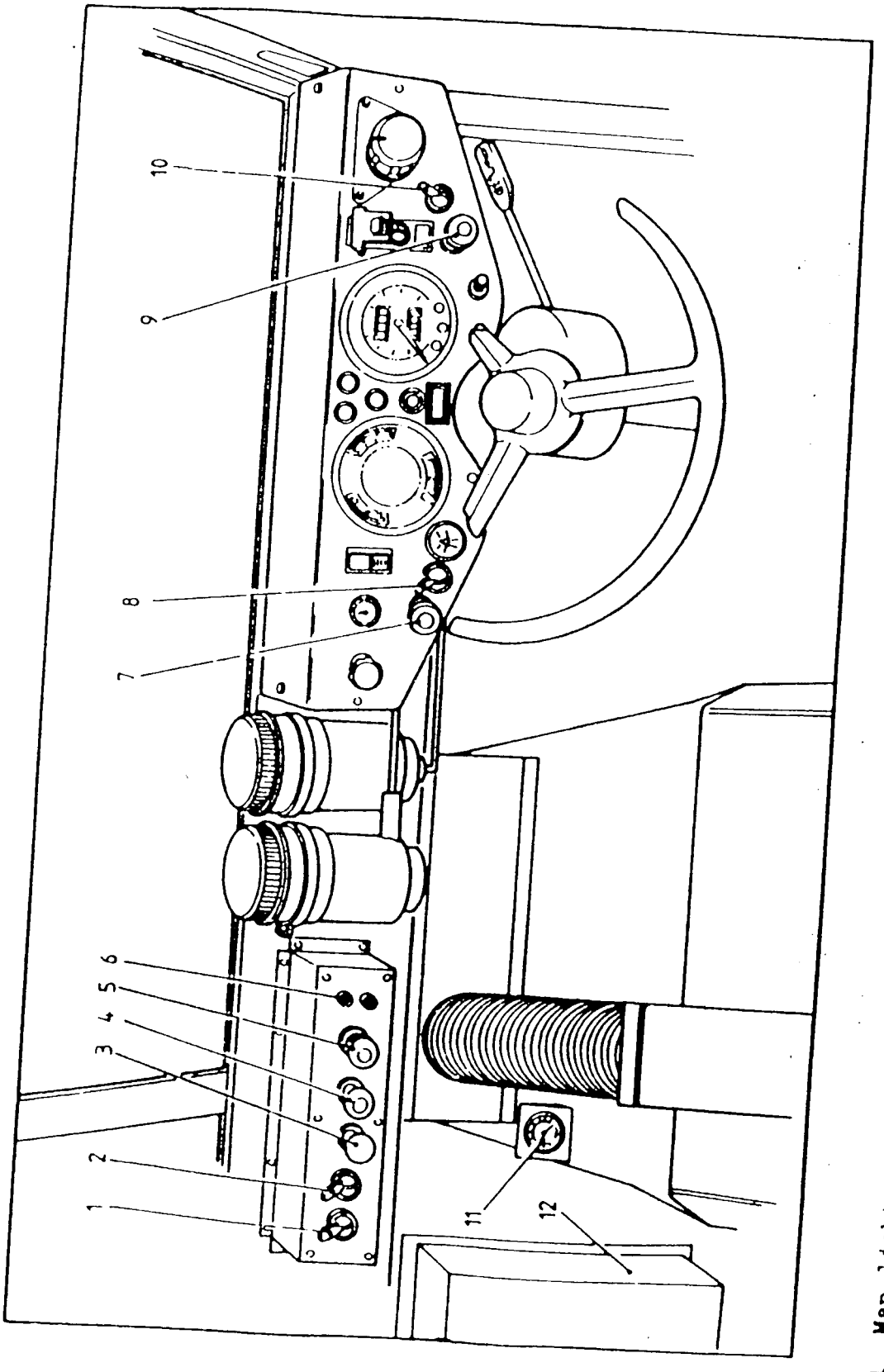
Fig. 4 Vehicle dimensions

MEDICAL EQUIPMENT CARRIED - RAF ROLE

Note...
The following items are required to be carried or fitted to the ambulance in the Airfield Crash Rescue Role. These items are additional or alternative to those listed for the ambulance in th Army Role.

Title	NATO Stock Number	Qty
Analagesia apparatus, Nitrous Oxide and Oxygen mixture, Entonox (without cylinders)	6515-99-211-5080	1
Nitrous Oxide BP 50% and Oxygen BP 50% .500 litre in pin indexed valved cylinder, filled (for use with 6515-99-211-5080)	6505-99-211-5045	2
First Aid Kit, Special Field Nurse	6545-99-211-4944	1
Administering Set, Dextran, Plasma Expanding, RAF pattern	6545-99-211-0709	1
Resuscitator and Inhalator Modulaire lightweight in carrying case complete (This item similar to 6515-99-211-3516 under ARMY ROLE)	6515-99-211-4180	1

Note...
Stowages for analgesia apparatus and a gas cylinder is sited on the rear face of the bulkhead, either side of the central stowage locker. These stowages are only required on RAF vehicles, but all vehicles are fitted to accept stowages.



1 Map light switch
2 Lighting master switch
3 Two-tone horn switch
4 Rotating beacon switch
5 Heater control switch
6 Inspection light sockets
7 Rear fog light switch
8 Front fog light switch
9 Compressor clutch switch
10 Panel lights
11 Resuscitation system air pressure gauge
12 Fuse and relay panel

Fig. 5 Instrument panel RH drive

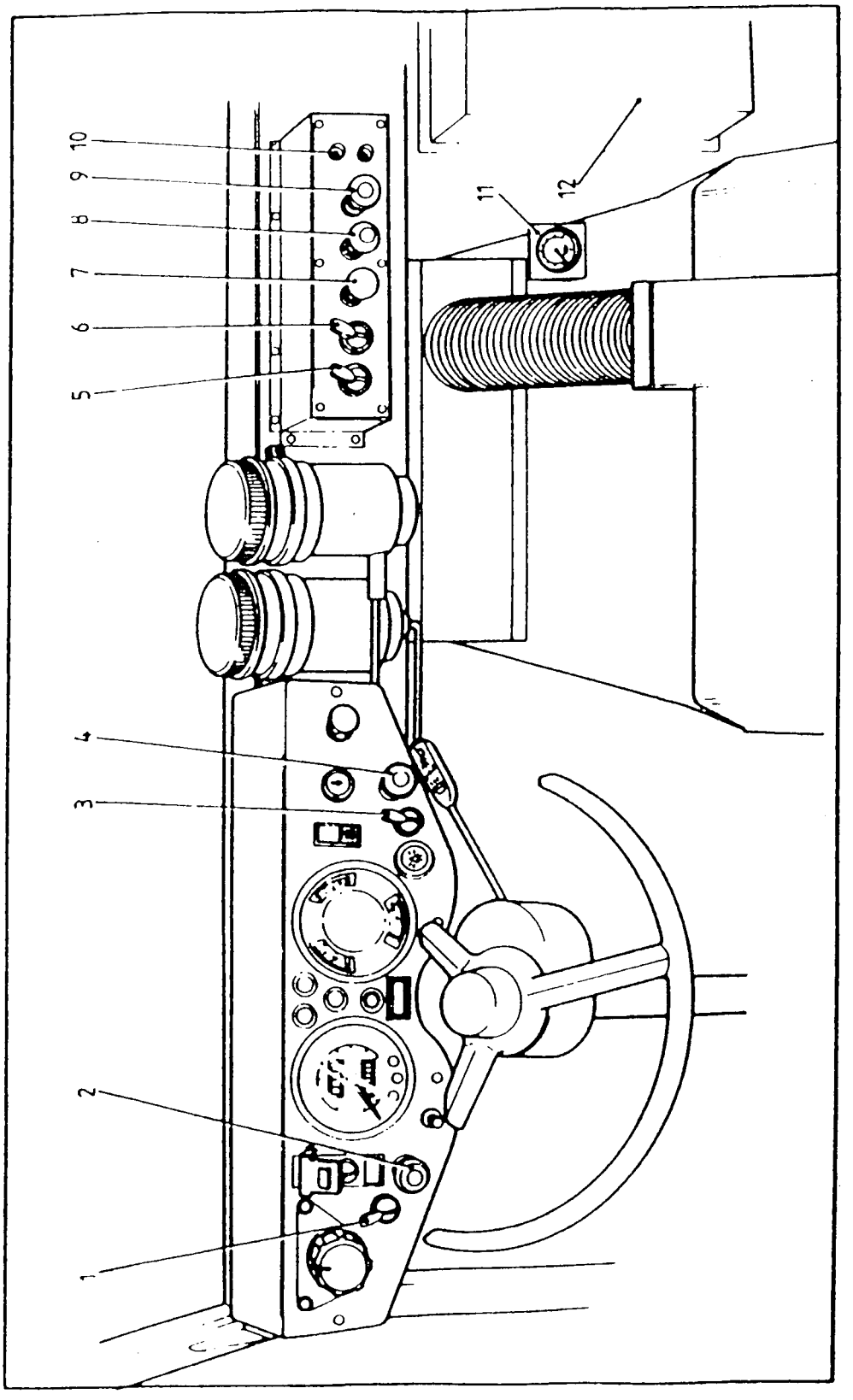


Fig.6 Instrument panel LH drive

Chapter 2

Description of Vehicle

BODY

5. The body is fully enclosed and is of aluminium alloy and stee section throughout. The cab and casualty compartment is double skinned and is thermally insulated. The roof panel is a one piec construction of aluminium alloy sheeting capable of supporting the weight of one man when necessary.

6. The casualty compartment can be heated or cooled to suit local conditions. Adjustable outlets are positioned to provide an individual supply of cooled air to each of the four stretcher patients.

7. A number of stowage lockers are disposed about the compartment and for the Airfield Crash Rescue Role vehicle a battery charger and radio are fitted.

8. Full width double doors at the rear open 270° to engage with a catch on their respective body sides and when closed are secured by spring loaded shoot-bolts.

9. The shoot-bolts are released by lever type handles. The righ hand door has two handles, an internal and a lockable external. The left hand door has an internal handle only and when closed is further secured by the right hand door, which overlaps. For this reason the left hand door must be closed first.

10. Communication between driver's cab and casualty compartment can be made through sliding windows either side of the full height centre locker. All windows can be blacked out.

11. Access to the casualty compartment is by a folding step mounted at the rear, which folds away flush to the rear of the body when not in use.

12. Three external lockers (Fig 1) are provided on the left hand side of the body. The forward locker (7) houses the spare wheel. The rear locker (5) is for the stowage of tools. A third lower locker (8) contains the vehicle battery. A slave battery is also carried in this locker for vehicles in use with the ROYAL AIR FORCE.

INTERIOR FITTINGS AND EQUIPMENT

13. The main stowage space is provided by a full height centre locker (Fig 3 (11)) and at the foot of this locker beneath the attendant's seat (10) a recess gives space for the stowage (20) of a water container.

14. Other lockers (17), provided each side of the centre gangway at the rear of the wheel arches, are used for the stowage of stretcher lift winding handles (16), patient restraint straps and for an additional water container. Access to each stowage area is through an opening in the top panel of the wheelbox, between the rear ends of the lower stretcher runners.

15. An open stowage, between the bulkhead and the forward face of the wheel-arch, on the right-hand side of the casualty compartment houses two 44 cu ft oxygen cylinders. The cylinders are secured by two clamping bars which can be released by unscrewing two clamping screws. Vehicles fitted with Air Cooling equipment are supplied with bull-nosed valves, pressure gauge and connections attached to the cylinders. In vehicles fitted with Resuscitation equipment the oxygen is piped from the cylinders to the Resuscitation control boxes.

16. On the left-hand side of the vehicle, in the casualty compartment, below the stretcher runners and inboard of the wheel-arch, a locker with two sliding doors is fitted. The doors provide access from the gangway, and when closed are secured by magnetic catches.

17. The corresponding space on the right-hand side of the casualty compartment is left open to provide storage space for two stretchers. A restraint strap is provided at the forward and rear ends of the stowage area to secure the stretchers.

18. A shelf is provided along each top side of the casualty compartment. Each shelf is fitted with a forward and aft restraint strap and provides stowage for one stretcher.

19. Forward of the bulkhead a stowage locker is located behind the right hand seat. The locker is a hinged flap and is secured when closed by a spring-loaded catch. The locker stores accessories for the Thomas Leg Splint. The splint is stowed in brackets on the forward face of the bulkhead, above and behind the driver and passenger's seats in vehicles fitted with air cooling equipment.

20. A Standard Vehicles First Aid Kit is stowed on top of the fresh air intake above the cab door on the right-hand side.

Stretcher Runners

21. Stretcher runners of mild steel channel are positioned longitudinally inside the casualty compartment, in tiers, two either side of the gangway. The lower stretcher runners are fixed to the upper face of the wheel box structure, but the outboard runners are easily removed to gain access to the upper stretcher lift mechanism.

22. The upper stretcher runners form part of the stretcher lift frame, which is capable of supporting the stretcher and patient throughout the lift/lower cycle. In the two stretcher, or sit patient roles, the lift frame is fully lowered and rests on the lower stretcher runners. This is also the normal loading posit

23. A stretcher lift mechanism is installed on each side of the casualty compartment. The lift moves vertically when the scr gear is operated. The screw gear is installed between the outb lower stretcher runner and the body on either side of the vehicl The screw gear terminates in a square ended shaft, which is acce ible when the rear doors are open. The lift mechanism is operat by a detachable handle.

24. In the raised position each stretcher lift is locked in position by two robust, quick action clamps located at the top of forward and rear faces of the lift mechanism housing panels. Th clamps are double pressure over-centre type locks which when appl lock into the stretcher lift frame. The stretcher lift is furth supported in the upper position by a robust, quick action clamp, fitted at the forward and rear ends of the inboard upper stretche runner. These clamps when applied, engage serrated plates mount on the vehicle body structure.

25. Two quick release tie-down straps are provided for each stretcher, to secure the stretchers, when in use, against vertical and longitudinal movement. One end of a strap is permanently attached to either end of the outboard stretcher runner, the other end hooks into a hole in the inboard stretcher runner. The belt can be tensioned or released by a quick release buckle

26. Two patient restraint straps are provided for use with each stretcher. The straps are quick release type and can be fitted in a variety of positions along the length of the stretcher runner

Casualty Seats

27. A seat cushion for sitting patients is provided to fit within each upper stretcher frame. The cushions are of latex foam mounte on a plywood base and covered with PVC leathercloth. Each cushion is provided with a wide strip of webbing, positioned centrally alon the length of the face to prevent snagging by the stretcher under-frame.

28. Back rests of similar construction are mounted on the side wal of the casualty compartment adjacent to the seat cushions. The seat cushions and back rests are readily detachable for cleaning an decontamination.

Attendant's Seat

29. The attendant's seat cushion is of similar construction to the patients' seat cushions and is fitted onto the base structure. The seat is hinged along its left hand edge to provide access to an area suitable for the storage of small items.

30. A seat back rest and headrest of similar construction to the patients' back rests, are fitted centrally on the bulkhead locker. Each rest is mounted on a hinged locker flap and is easily removed for cleaning and decontamination.

Front Cab Seats

31. The Driver and Passenger seats in the cab are provided with the chassis and are described in the Users' Handbook for the standard 1 Tonne Rover.

Safety Harness and Restraint Straps

32. Lap/diagonal type safety harnesses are provided with the chassis for the driver and passenger.

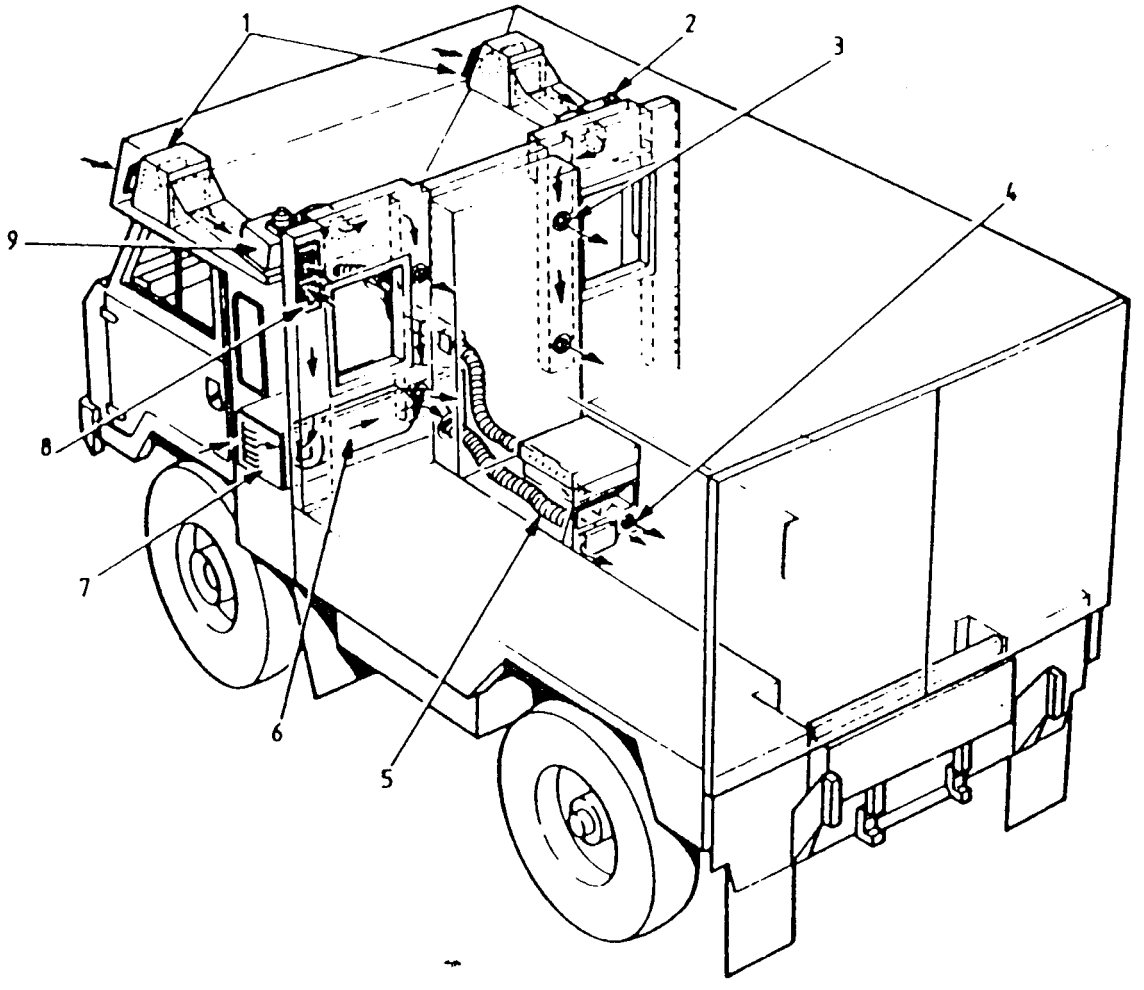
33. An inertia reel type lap belt is fitted to provide for restraint of the attendant during cross-country transit. The belt is designed to be capable of being operated with one hand.

34. Eight, semi-permanent, quick release patient restraint straps are provided for securing stretcher patients in transit. These straps can also be utilized as lap straps to restrain seated patients when required. The straps attach to the outboard stretcher runners.

Heating and Ventilation

35. The cab heating and demisting system is incorporated with the engine cooling system. A ducting on the engine cover is extended rearwards to provide a primary level of heating and ventilation in the casualty compartment. The rate and/or direction of flow is controlled by an outlet in the attendant's seat structure.

36. A secondary form of heating (Fig 7) in the form of an Eberspacher B4L 12V petrol burning heater unit (6) is installed in a sealed locker, behind the left-hand seat in the driver's cab. The heater is ducted into the casualty compartment, via the bulkhead, to the base of the attendant's seat, which is fitted with a floor level grille to deflect the flow of hot air away from the attendant's feet.



1 Patient fresh air filters
2 Fresh air blower
3 Patient fresh air outlet (Typical, 4 positions)
4 Engine heated air outlet
5 Eberspacher heater outlet
6 Eberspacher heater
7 Eberspacher heater inlet
8 Re-circulating air vent
9 Fresh air blower

Fig. 7 Heating and ventilation installation

37. A fresh air inlet (7) to the heater is provided by an externally mounted louvred panel in the left-hand side of the cab immediately aft of the cab door. Provision is made to enable the fresh air intake to be closed and the air within the casualty compartment recirculated via an intake (8) and ducting built into the bulkhead.

38. The external fresh air intake is fitted with a filter which can be removed for cleaning.

39. The heater controls are mounted in the driver's cab within reach of the driver. In addition, an adjustable thermostatic control unit is located in the top right hand corner of the bulkhead locker, for operation by the attendant.

40. Fresh air is provided for each stretcher patient. The air is ducted from louvres, one each side of the vehicle above the windscreen, to four outlets on the bulkhead. The air outlets are positioned adjacent to each stretcher patient (3) and can be adjusted for direction and rate of flow. Two blower units (2 and 9) are fitted to maintain airflow when the vehicle is stationary. Baffles and drain holes are suitably positioned within the system to prevent accumulation and 'carry over' of water through the ducting.

Lighting

41. General illumination of the casualty compartment is provided by two ceiling mounted light units. The intensity of the light emitted is controlled by a pair of switches mounted in the top left hand corner of the bulkhead locker. A low intensity blue blackout light (Fig 3 (9)) is provided to illuminate the casualty compartment when loading under combat conditions.

42. Opening the rear doors whilst the white (normal) lights (7) are on, will automatically extinguish the normal lights and switch on the blackout light. To enable the normal light to remain 'ON' with doors open during loading under non-combat conditions an overriding device (15) is fitted. The overriding device comprises a steel plate which can be repositioned to hold in the plunger of a micro-switch. The microswitch is located at the top right hand corner of the rear door aperture.

43. A portable lamp complete with electric lead is provided for examination of patients. A socket point and control switch are fitted in the top of the bulkhead locker.

44. Illumination in the driver's cab is provided by a light unit mounted centrally above the windscreen and a map reading lamp on the fresh air ducting above the outboard of the passenger's seat.

Miscellaneous Fittings

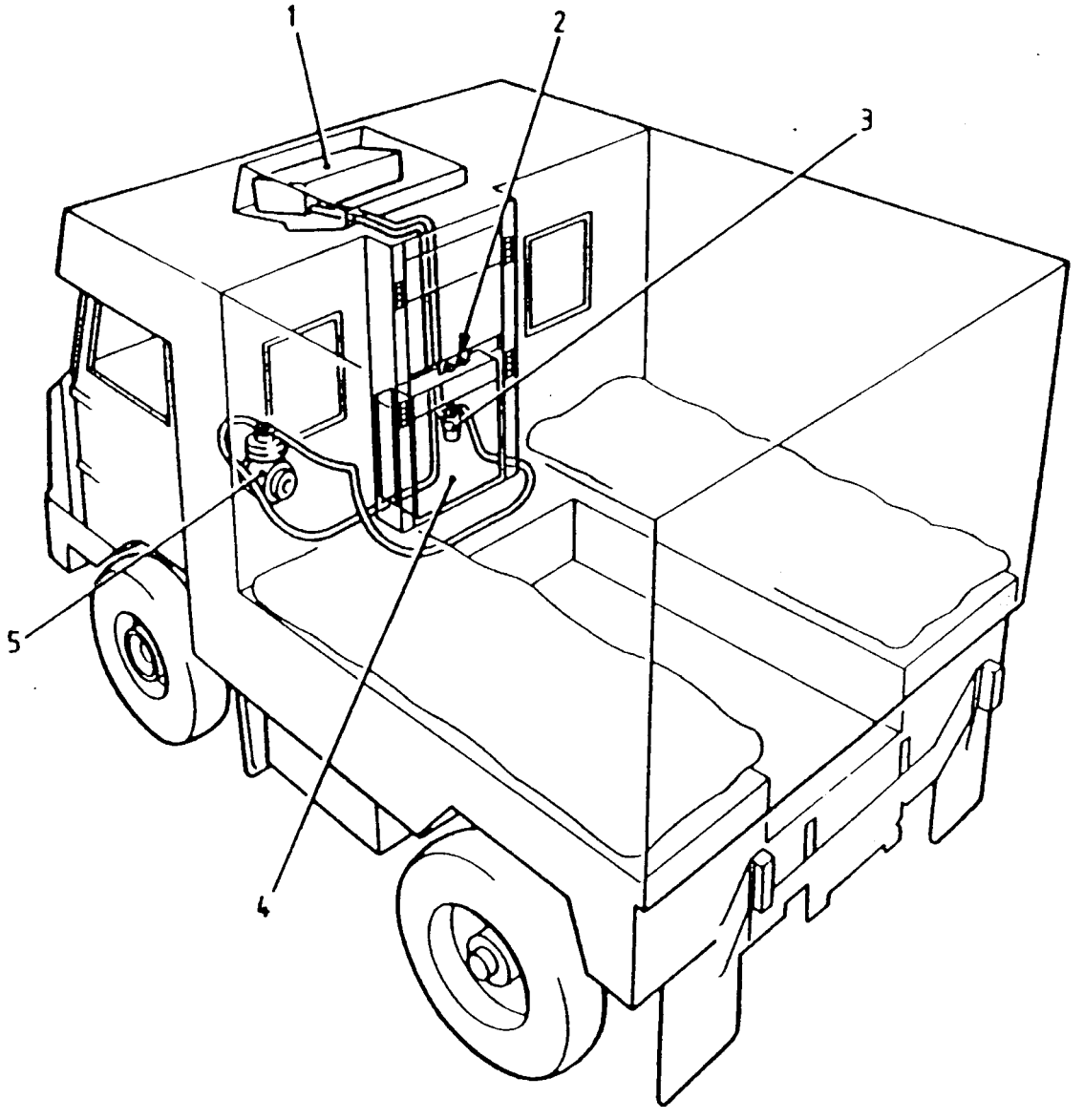
45. Support hooks for infusion bottles (6) are provided in t at four positions (two forward, two aft), conveniently locate the treatment of each stretcher patient. When not in use th support hooks fold flush to maintain a protrusion free ceilin the casualty compartment.

46. In the driver's cab a rigid panel fitted between the dri and passenger's seats, has weapon clips mounted on its top ed the stowage of one SLR. Sun visors for the driver and passe are mounted above the windscreen.

47. Stowages for the two 'T' keys used to open external locke provided. One stowage is located within the driver's cab on right hand side wall behind the seat, the other stowage is on right hand rear door. Both stowages are within easy reach of person standing outside the vehicle.

48. The oxygen supply is piped from one of the two cylinders below the right hand lower stretcher, to two outlet points. on either side of the bulkhead locker conveniently located for us the upper or lower stretcher patient. On vehicles fitted wi Air Cooling Equipment (Fig 8) the supply is piped direct from cylinders via a regulator valve attached to the cylinders to q release couplings. The quick release couplings mounted on the head provide the method of connecting face masks to the system.

49. A cylinder operating key and a spanner for connecting the regulator valve are stowed on the bulkhead adjacent to the cyli heads. New issue regulators are provided with a hand nut for connection and do not require the use of the spanner.



1 Condenser
2 Control switches
3 Filter unit
4 Evaporator
5 Compressor

Fig.8 ACU Installation

AUTOMATIC RESUSCITATION SYSTEM

50. The automatic resuscitation system (Fig 9) enables the medica attendant to initiate and maintain positive-pressure artificial respiration to nerve agent casualties. Provision is made for the simultaneous treatment of up to four casualties.

51. Provision is made for the distribution of a pulsating supply of either air or oxygen at a pressure of 4.0 bar (60 lbf/sq in) to face masks at the patients' position.

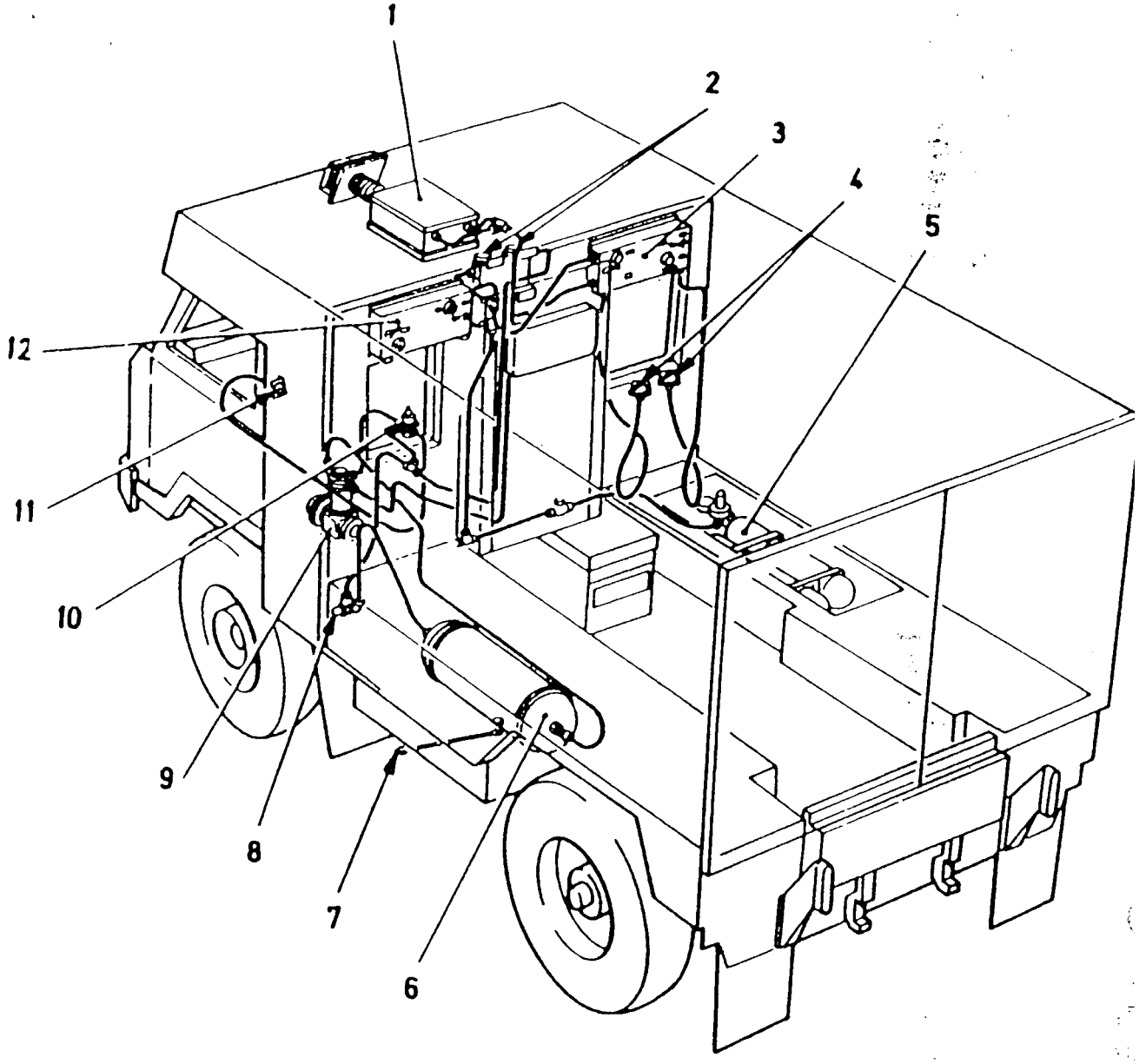
52. Air supply for the system is via an inlet on the front top of vehicle, through a filter box (1) in the roof of the driver's cab, a compressor (9) driven by a fan belt off the vehicle's engine to air reservoir (6) mounted under the floor on the left-hand side of the vehicle. The reservoir is maintained at a maximum working pressure of 7.1 bar (100 lbf/sq in). A governor valve (8), mount inside the heater compartment of the left-hand side of the vehicle ensures that the reservoir pressure does not rise above its maximu working pressure and also acts as a cut-in to operate the compress when the reservoir pressure falls to less than 6.2 bar (90 lbf/sq The compressor is controlled by a magnetic clutch, initially engag by a switch on the cab instrument panel.

53. From the reservoir, pressurized air is passed via Norgren filters (2) mounted in the driving cab, to two automatic resuscita tion control units (3 and 12) mounted on the bulkhead separating t driving cab from the rear compartment. The pulsating supply at t reduced pressure of 4.0 bar (60 lbf/sq in) is distributed to the f masks (4) from the control units. A low pressure warning switch, incorporated into the output side of the system, operates a low pressure warning buzzer, mounted on the fuse box and relay panel i the driver's cab, whenever the output pressure falls below 4.0 bar (60 lbf/sq in). The buzzer continues to operate until the pressu has risen above 4.0 bar (60 lbf/sq in).

54. The Norgren filter unit comprises two filters and a non-retur valve. Air passes into the first filter element where it is clea of any oil or other contamination. From the first filter element air passes through the second, where any odours still present in t air are removed. The non-return valve prevents air or oxygen re- entering the filters and thus becoming contaminated again.

Note...

If an odour is detected in the filtered air, this is an indicat that the carbon cartridge filter requires replacement. Howeve this does not mean that the air is contaminated and is still qu breathable.



1 Filter box
2 Norgren filters
3 RH control unit
4 Face masks
5 Oxygen cylinder
6 Air reservoir
7 Air reservoir vent lever
8 Governor valve
9 Compressor
10 Low pressure valve
11 Air pressure gauge
12 LH control unit

Fig.9 Resuscitation system

OXYGEN SYSTEM

WARNING

IN AMBULANCES DESIGNED FOR, BUT NOT YET EQUIPPED WITH THE MATIC RESUSCITATOR SYSTEM (PAGE 23); USERS ARE WARNED NOT T THE OXYGEN SYSTEM. THIS WARNING IS GIVEN TO PREVENT PO LEAKAGE OF OXYGEN FROM THE TEMPORARY BLANKING PLUGS FITTED ENDS OF THE OXYGEN PIPES IN READINESS FOR INSTALLATION O AUTOMATIC RESUSCITATOR CONTROL BOXES.

55. The oxygen system is supplied from cylinders, installed below the right-han stretcher rack. Two cylinders are installed, but only one is in use at any one tim cylinder in use has a pressure regulator fitted to the neck.

56. On non-resuscitation system vehicles, the oxygen is piped to two probe ad one on each side of the front bulkhead of the rear compartment. When the resusc system is installed, the oxygen supply is piped to the two automatic resuscitator units. The output pressure from the cylinder is regulated at 4.0 bar (60 lbf/sq in) regulator, which is pre-set by the manufacturer and under no circumstances regulator to be tampered with.

AIR COOLING SYSTEM (RAF vehicles only)

57. The air cooling system (Fig 8) is fitted to certain vehicles operating in tr climates. The system provides a supply of cooled air to the rear compartmen degree of cooling is controlled by a thermostat. Air can also be re-circulated w further cooling by operation of an independent fan control.

58. The condenser (1), which cools the refrigerant agent and converts it from a g liquid is mounted in a duct assembly located in the driver's cab roof. The c medium is ram air which enters the duct via a mesh grille on the front face of th above the windscreen.

59. A filter drier (3) is fitted in the system between the condenser and the expa valve and is mounted on the forward face of the bulkhead above the vehicle's e housing. The filter removes any traces of oil, water or foreign matter from the liqu refrigerant. A sight glass on the top of the filter allows constant monitoring c refrigerant when the system is operating.

60. The evaporator (4) is located in the base of the rear compartment bull cupboard and is accessible through a large panel forward of the attendant's seat cooled air is ducted to louvred outlets at each casualty position via a blower motor is mounted on top of the evaporator assembly.

61. The system is controlled by three switches:

a Compressor control switch. This is a push/pull switch mounted on the instrument panel. Operation of the switch energises the electro-magnetic c and the compressor is driven, provided that the temperature in the compartment is higher than the temperature set on the thermostat control.

b. Temperature control. This is a rotary switch, mounted on the rear face of the front bulkhead of the rear compartment and is used to control the temperature of the air output.

c. Fan control. This is a 4-position rotary switch; the positions are OFF, H(igh), M(edium) and L(ow). The switch controls the speed of the fan and can be used indepedently of the temperature control so that air can be re-circulated without cooling.

ELECTRICAL SYSTEM

62. The electrical system is a standard 12V negative earth system as fitted to the basic 1 Tonne vehicle with the following modifications:

a. The existing 16 ACR alternator has been removed and replaced by a 25 ACR alternator with associated chassis rewiring.

b. The NATO 12 pin socket has been removed from the rear of the chassis and associated lead ends insulated and stowed.

c. The original battery and stowage behind the passenger seat has been removed.

63. The resighted battery together with a second 'Slave' battery is installed in a locker beneath the chassis on the left-hand side of the vehicle body.

a. The slave battery is of the same type and rating as the vehicle battery and is provided to meet the additional electrical loads of the ambulance role.

b. The batteries are mounted on sliding trays and are readily accessible. The stowage locker is provided with drain holes and ventilated to atmosphere outside the vehicle.

c. Both batteries can be maintained in a fully charged state by use of a split charging system.

64. The additional electrical circuits for the ambulance role are shown in the wiring diagram. Royal Air Force vehicles are equipped with an engine immersion heater, mains battery charger, snatch plug, earth leak circuit breaker installation, radio and a slave battery.

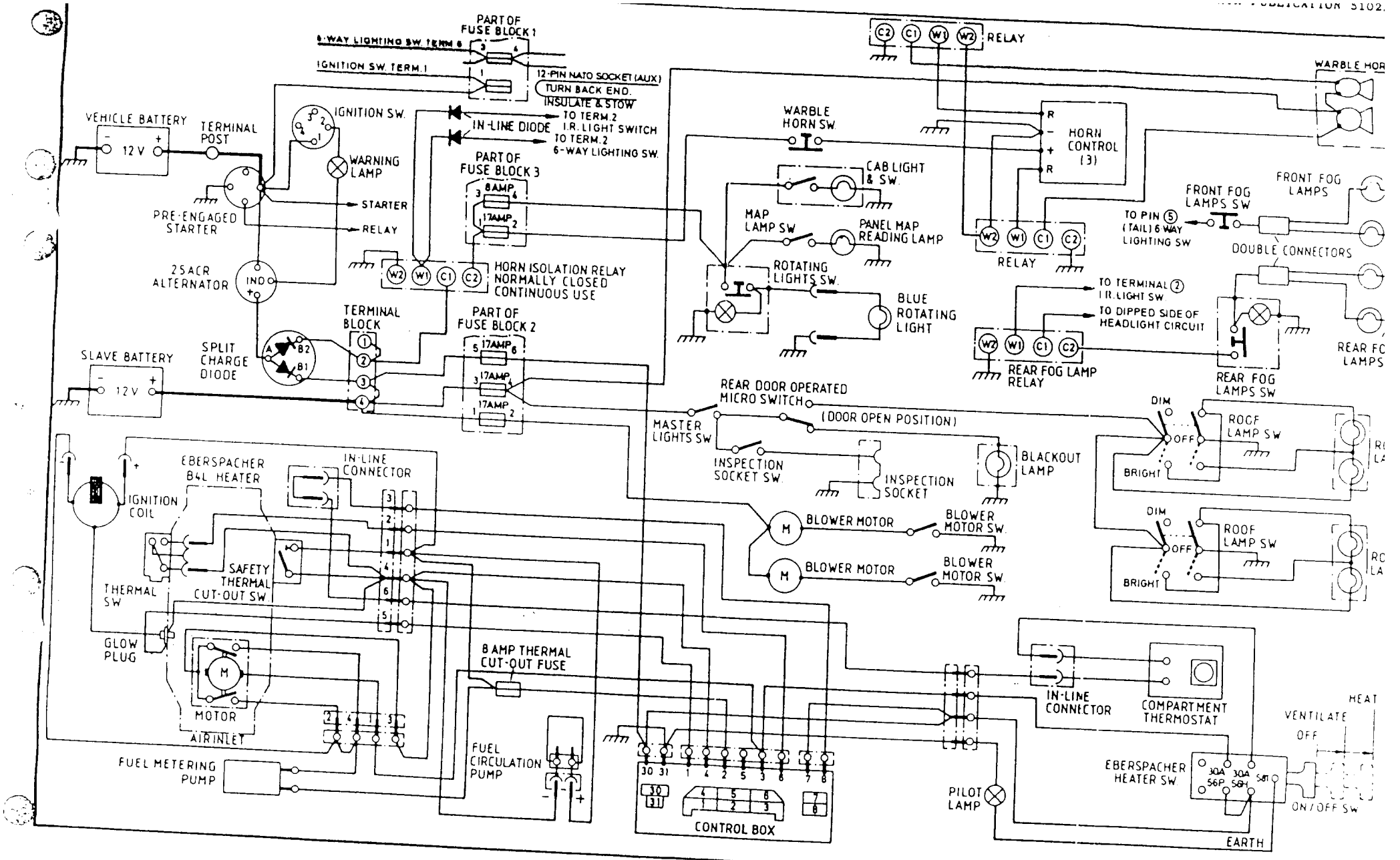


Fig. 10 Main circuit diagra

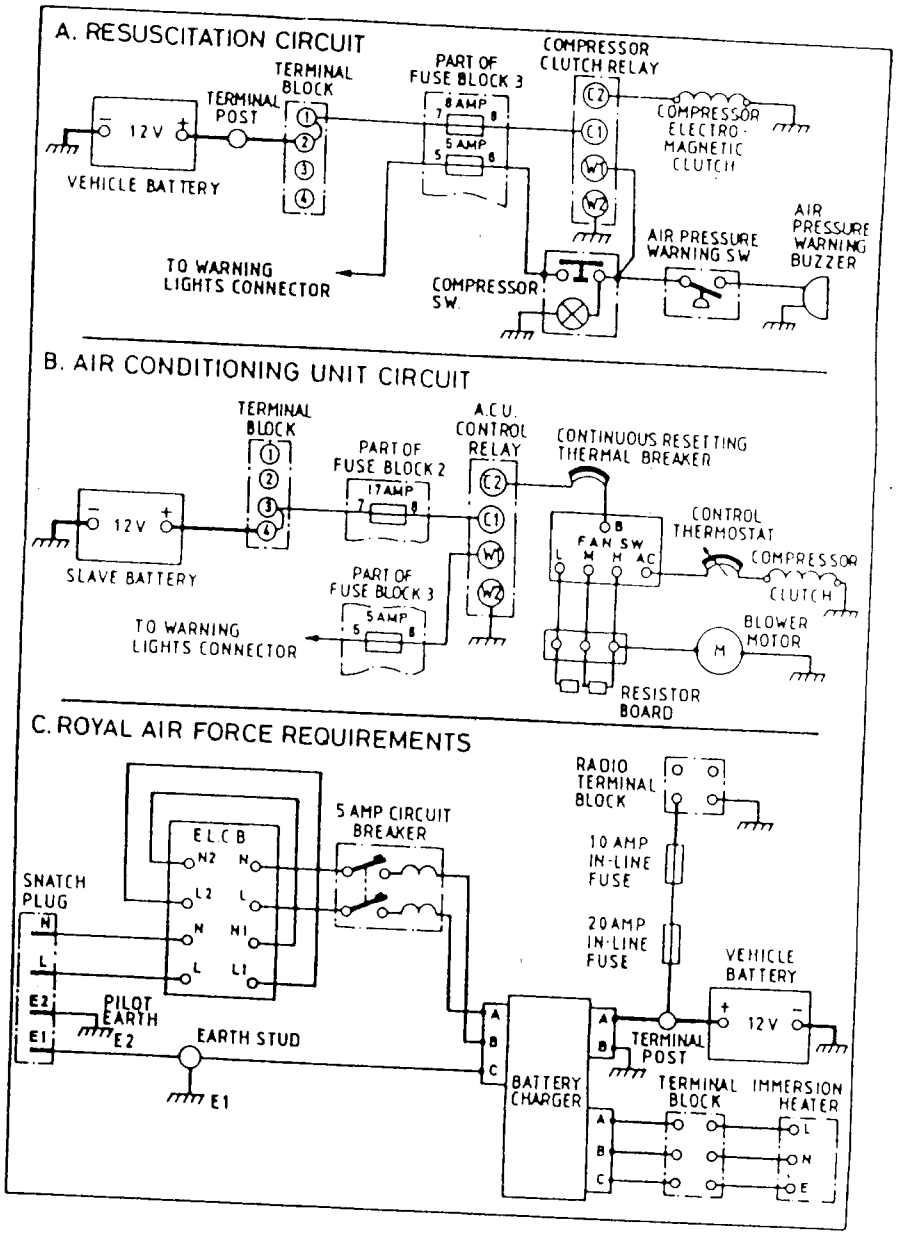
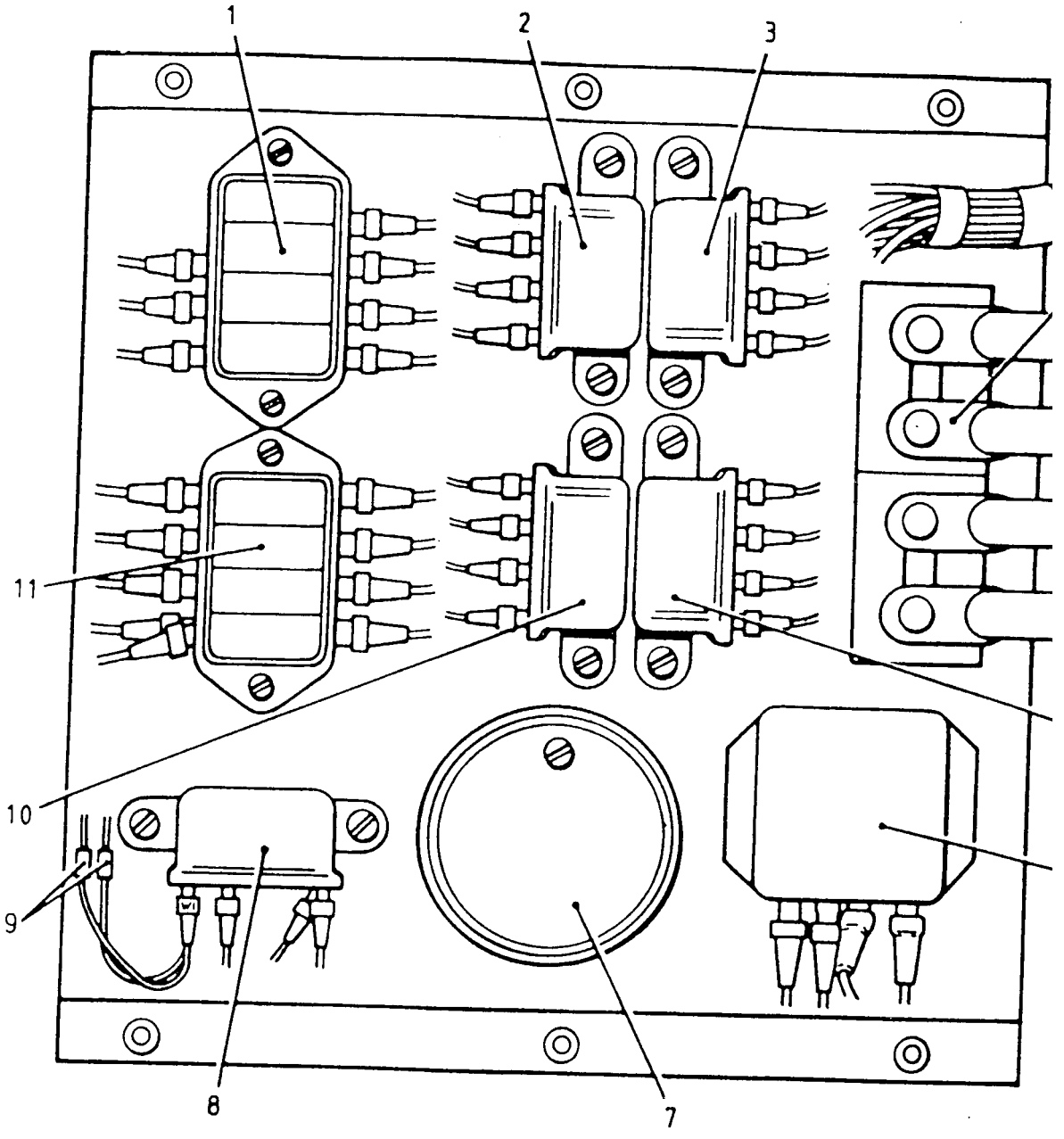


Fig. 11 Optional circuits diagr



1 Fuse block 3
2 Compressor clutch relay (resuscitation vehicle) or ACU clutch relay (RAF vehicle)
3 Rear fog light relay
4 Terminal block
5 Horn relay B
6 Horn control (3)
7 Air low pressure buzzer
8 Horn isolation relay A
9 Inline diodes
10 Horn relay A
11 Fuse block 2

Fig 12 **Fuse and relay panel**

Section 2

Chapter 1

Operating Instructions

GENERAL STOWAGE LOCKER

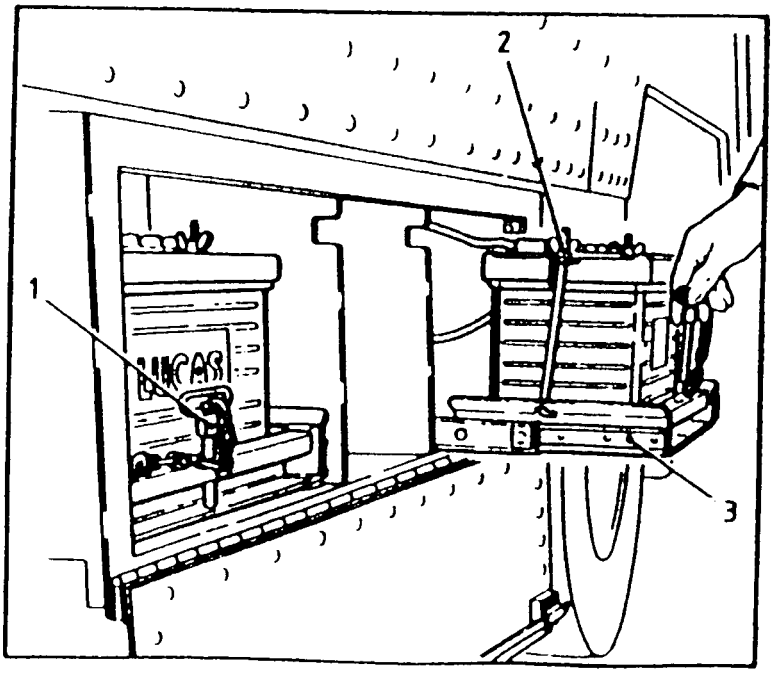
65. The general stowage locker, located just forward of the rear wheel arch on the left-hand side of the vehicle is secured by a lo operated by a T-bar, which is stowed in the driver's cab. The locker is opened by inserting the T-bar into the lock and rotating to release. Closing is achieved by lifting the flap and engaging the locks, if necessary by rotating the T-bar.

SPARE WHEEL STOWAGE

66. The spare wheel is stowed in a compartment forward of the general stowage locker on the left-hand side of the vehicle. Openi and closing is similar to the general stowage locker and the same T-bar is used.

BATTERY STOWAGE AND BATTERY REPLACEMENT

67. The battery stowage (Fig 13) is directly below the spare wheel stowage. The batteries are mounted on trays (3) which slide in an out on rails to facilitate battery replacement. The procedure for replacing a battery is as follows:-



1 Locking pin
2 Battery securing frame
3 Battery tray Fig. 13 Battery stowage

a. Open the stowage flap using the T-bar (para.65).

b. Pull out the locking pin (1) from the centre of the battery tray and withdraw tray from compartment.

c. Disconnect the positive and negative leads from the battery terminals.

d. Unscrew the wing nuts and remove the battery securing frame (2). Remove the battery from the tray.

e. Place the replacement battery on the tray. Position the securing frame over the battery and secure by tightening the wing nuts.

f. Connect the positive and negative leads to their respective terminals on the battery.

g. Push the tray back into the battery compartment and secure with the locking pin.

h. Close the compartment flap.

REAR FOLDING STEPS

68. The rear folding steps (Fig 14) can be operated from either inside or outside the vehicle. The procedure is as follows:-

WARNING...

PERSONNEL ARE TO REMAIN WELL CLEAR TO EITHER SIDE WHEN FOLDING OR UNFOLDING IS IN PROGRESS

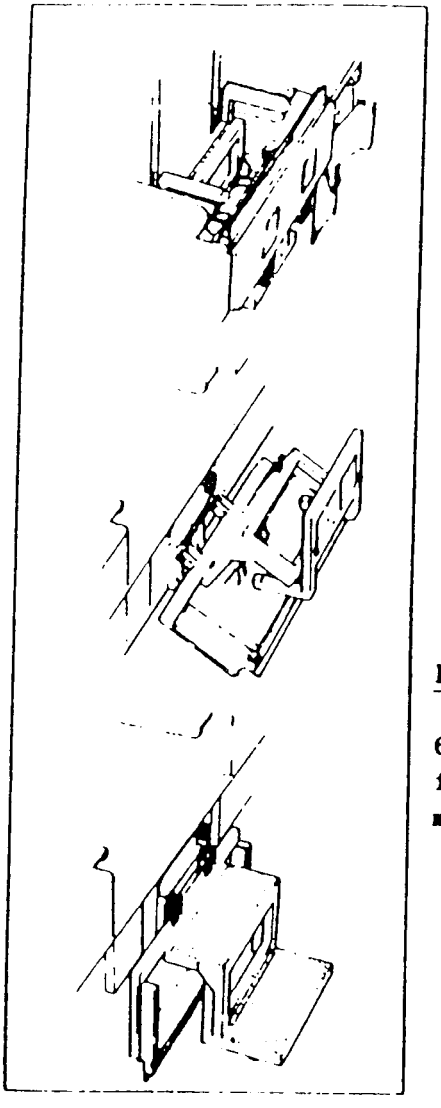


Fig.14 Unfolding rear steps

a. Unfolding from outside
   (1) Release the shoot bolts
   (2) Stand to one side of the step and pull rearwards, allowing steps to hinge downwards
   (3) Pull down the lower hinged st tread.

b. Unfolding from inside
   (1) Release the shoot bolts
   (2) Push the steps outwards and downwards and allow to fall
   (3) Push down the lower hinged tr step.

c. Closing
   (1) Pull and lift either corner o the back panel at the position indicated on the panel.

   Note...
   The lower tread is self-folding and may close in one movement.

   (2) Ensure that the lower hinged tread is fully folded then loc the steps with the shoot bolts

ESCAPE HATCH

69. The escape hatch (Fig 1(2)) may be remove from either inside or outside the rear compar ment. To operate, proceed as follows:-

a. External removal
   (1) Rotate the winged fastener sec ing both covers on the top of hatch and raise the covers
   (2) Rotate both handles in the direction indicated
   (3) Lift the hatch clear of the opening.

b. Internal removal
   (1) Rotate both handles in the roof of the rear compartment in the direction indicated
   (2) Push the hatch upward clear of the opening and project to one side.

c. Hatch fitment

(1) Ensure both handles are turned to the release position

(2) Position the hatch in its opening in the roof

(3) Rotate both handles to the closed position, then check that the hatch is secure.

STRETCHER RESTRAINT STRAPS

70 Restraint straps (Fig 15) for securing the stretcher after it has been placed on the runners are permanently attached to the outer high flanges of the runner. The method of use is as follows:-

Note...

Each strap incorporates a large metal load-lok buckle and must not be used for patient restraint.

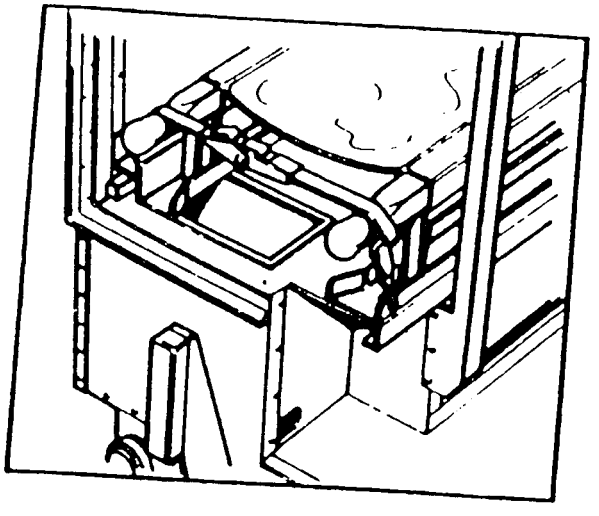


Fig.15 Stretcher restraint

a. Securing a stretcher.

(1) Position the straps over the handles of the stretcher and insert the wire hook on the free end through the hole in the flange of the runner

(2) Shorten the strap as required by lifting the arm of the buckle and feeding the free end of the strap through the buckle

(3) Tension the straps fully by pushing the arm of the buckle over-centre and flat down.

b. Releasing a stretcher

(1) Release the tension on the strap, by pulling the arm of the buckle up and over the vertical position

(2) Loosen the straps by pushing back through the buckle

(3) Release the hook from the hole in the runner and lift the strap clear of the stretcher.

STRETCHER PATIENT RESTRAINT

71. Provision is made for the restraint of a patient on a stretcher once the stretcher has been placed on the runners. Two straps are provided for each stretcher (Fig 16). The procedure is as follows:

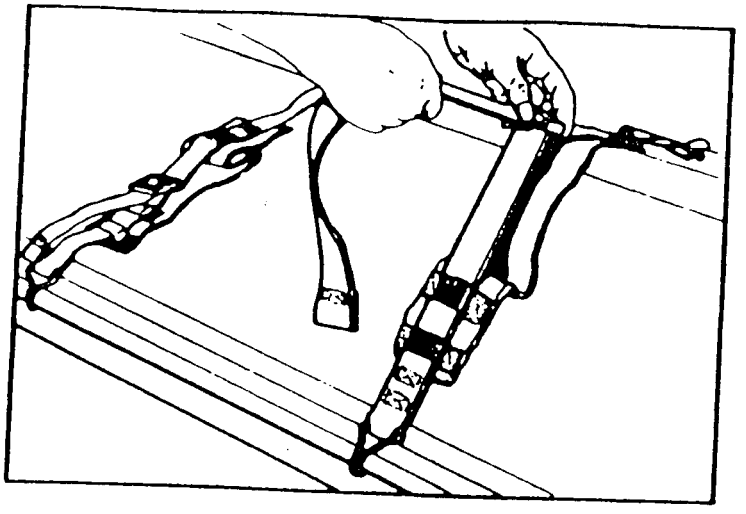


Fig.16 Stretcher patient restraint

a. Patient restraint

(1) Select the most suitable position in regard to the injuries of the casualty and secure the strap to the outer flange of the runners by means of the snap hook incorporated into one end of the straps through the nearest suitable hole

(2) Pass the strap over the patient and secure to inner stretcher runner, by passing the wire hook through the nearest suitable hole or slot in the runner

(3) Pull the face end of the strap through the plastic buckle to tension the strap

(4) Repeat the procedure at a suitable point with the other strap.

b. Patient release

(1) Press the tongue protruding from the centre of the buckle and ease the straps open sufficiently to enable the wire hooks to be released.

(2) Release the wire hooks and pass the freed end of the strap over the patient

(3) Unclip the snap hook and remove the strap

(4) Repeat the procedure for the other strap.

STRETCHER LIFT OPERATION

72. To raise a stretcher to the upper position on either side, proceed as follows:-

a. Ensure that the stretcher lift is in the fully lowered position, by fitting the handle to the squared shaft (Fig 17) immediately outboard of the outer runner and rotating the handle counter-clockwise.

b. Load the stretcher on to the runners so that the stretcher handles just touch the buffers mounted on the forward bulkhead of the rear compartment.

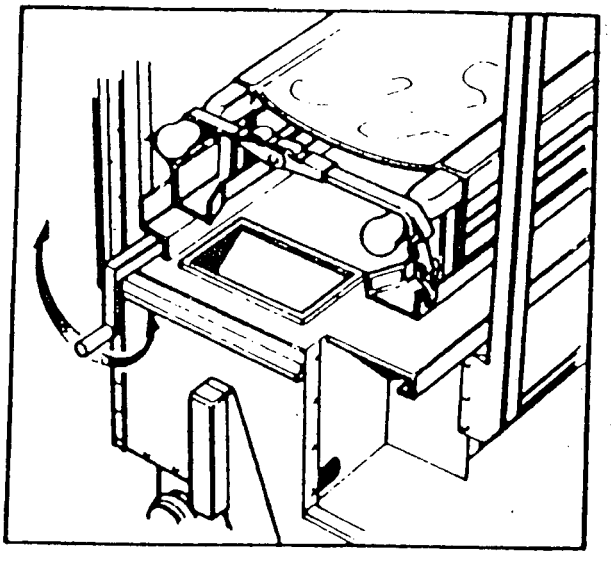


Fig.17 Stretcher lift operation

c. Secure the stretcher in position with the restraint straps (refer to para.70).

d. As necessary, restrain the patient on the stretcher (refer to para.71).

e. Fit the handle to the appropriate square shaft and rotate clockwise to raise the stretcher.

Note...
When the stretcher has reached its maximum height, the lift will be felt to abutt its stops. Do not attempt to turn the handle beyond this point.

f. Apply the transit clamps at the top of the lift column, then at the forward and aft ends of the stretcher runners to secure the lift.

Note...
The levers are of the over-centre type and a first and second pressure must be felt to ensure that the clamp is positively locked.

g. Remove the handle and re-stow the handle in the rear compartment.

STRETCHER PATIENT RESTRAINT

71. Provision is made for the restraint of a patient on a stretche once the stretcher has been placed on the runners. Two straps are provided for each stretcher (Fig 16). The procedure is as follows

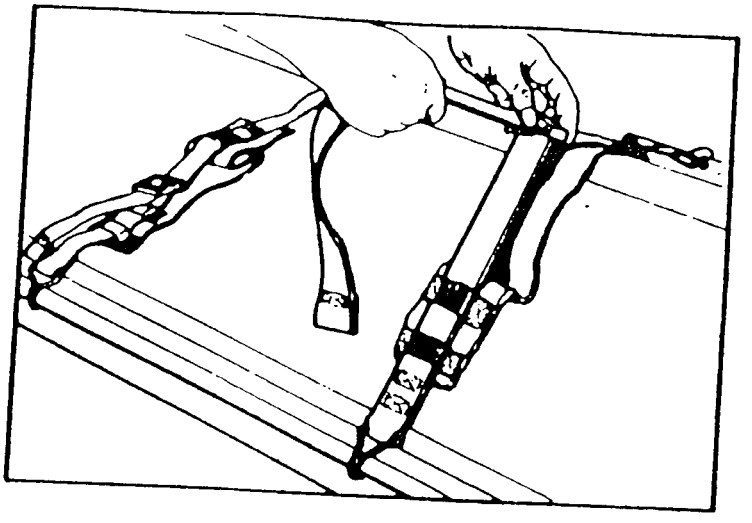


Fig.16 Stretcher patient restraint

a. Patient restraint

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(3) Pull the face end of the strap through the plastic buckle to tension the strap

(4) Repeat the procedure at a suitable point with the other strap.

b. Patient release

(1) Press the tongue protruding from the centre of the buckle and ease the straps open sufficiently to enable the wire hooks to be released.

(2) Release the wire hooks and pass the freed end of the strap over the patient

(3) Unclip the snap hook and remove the strap

(4) Repeat the procedure for the other strap.

STRETCHER LIFT OPERATION

72. To raise a stretcher to the upper position on either side, proceed as follows:-

a. Ensure that the stretcher lift is in the fully lowered position, by fitting the handle to the squared shaft (Fig 17) immediately outboard of the outer runner and rotating the handle counter-clockwise.

b. Load the stretcher on to the runners so that the stretcher handles just touch the buffers mounted on the forward bulkhead of the rear compartment.

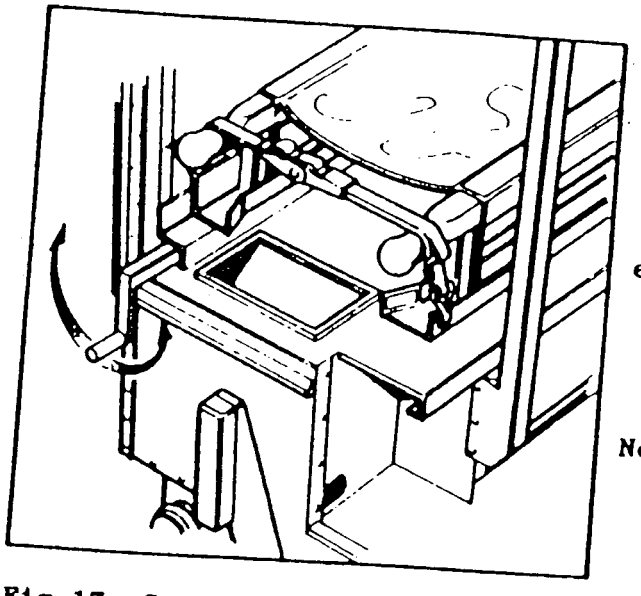


Fig.17 Stretcher lift operation

c. Secure the stretcher in position with the restraint straps (refer to para.70).

d. As necessary, restrain the patient on the stretcher (refer to para.71).

e. Fit the handle to the appropriate square shaft and rotate clockwise to raise the stretcher.

Note...

When the stretcher has reached its maximum height, the lift will be felt to abutt its stops. Do not attempt to turn the handle beyond this point.

f. Apply the transit clamps at the top of the lift column, then at the forward and aft ends of the stretcher runners to secure the lift.

Note...

The levers are of the over-centre type and a first and second pressure must be felt to ensure that the clamp is positively locked.

g. Remove the handle and re-stow the handle in the rear compartment.

73. To unload a stretcher, proceed as follows:-

a. Fit the handle to the appropriate squared shaft.

b. Release the forward and aft clamps and then the centre clamp to unlock the lift assembly.

c. Rotate the handle counter-clockwise to lower the lift assembly.

Note...

If the stretcher is empty when being lowered, ensure that the buckles of the stretcher restraint straps do not becom trapped under the stretcher runners.

d. If the stretcher is not to be lowered to the fully lower position, continue to rotate the handle until the stretcl is lowered to the required position, then lock with the centre clamp then the forward and aft clamps.

e. When the stretcher is lowered to the required position, remove and stow the handle.

SEATED PATIENT RESTRAINT

74. In the seat patient role (Fig 18), the stretcher patient restraint straps may be utilized as lap straps. The procedure for use is as follows:-

a. Select the most suitable position and engage the snap hool in the flange of the outer stretcher runner.

b. Pass the strap across the patient's lap and engage the wire hook in an adjacent hole in the flange of the outer stretcher runner.

c. To tighten the strap, pull the free end through the buckle.

d. To release the patient:-

(1) Press the tongue protruding from the centre of the buckle, then ease the strap back through the buckle

(2) Release the wire hook from the hole in the flange.

Note...

The patient restraint straps are supplied as part of the vehicle equipment and must be retained with vehicle at all times.

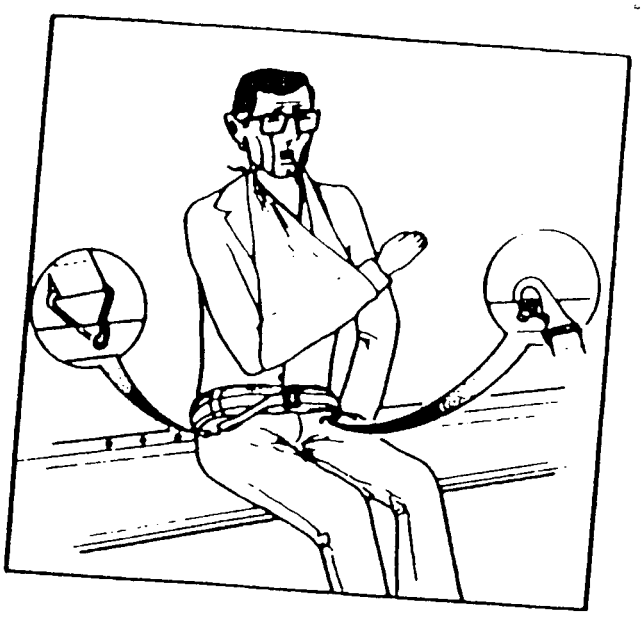


Fig.18 Seated patient restraint

STRETCHER STOWAGE

75. When not in use the four stretchers are to be removed from their respective runners and stowed in a folded condition in the stowage provided in the casualty compartment. Two stretchers are stowed on the floor at the base of the right hand stretcher support box, the other two stretchers are stowed at roof level on the shelf provided on each side of the vehicle, one stretcher on each shelf. In position the stretchers are secured by adjustable straps which are permanently attached to the vehicle structure one at each end of the stretcher stowages. The free end of each lower strap is hooked into a staple mounted on the floor, the free end of each upper strap is hooked into a slot in the shelf. The strap can be tightened by pulling the tongue of the strap through its buckle or slackened by pressing the protruding tongue in the centre of the buckle and easing the strap through the buckle.

ASUALTY COMPARTMENT LIGHTING

3. All lighting in the cqsualty compartment is controlled by a aster switch (Fig 5(2)) located on the auxiliary switch panel in the iver's cab. Within the casualty compartment two main lamp units ntrolled by two switches (Fig 19(1)) provide four levels of lumination. The levels of lighting are as follows:-

a. One switch UP - one light on DIM

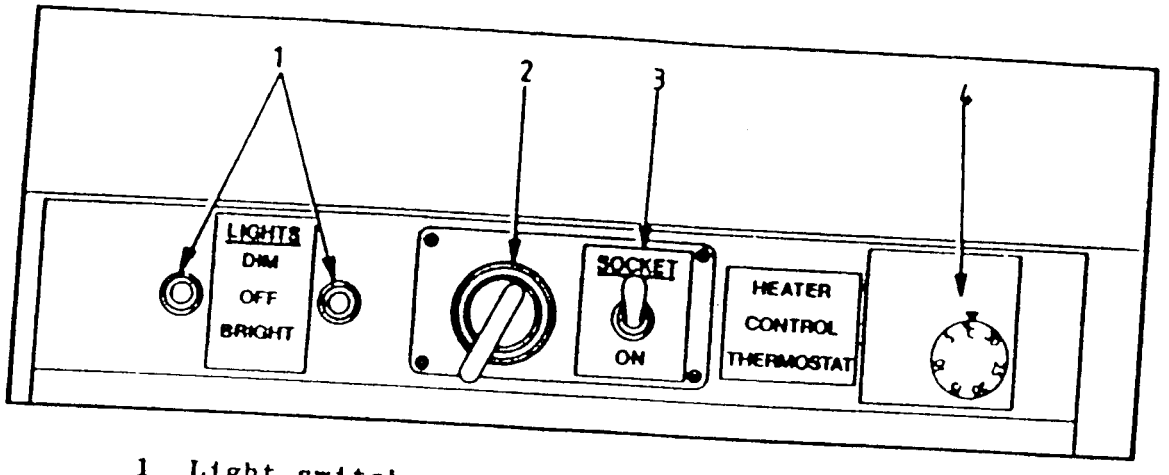
b. Two switches UP - both lights on DIM

c. One switch UP, one switch DOWN - one light DIM, one light BRIGHT

d. Two switches DOWN - both lights BRIGHT

Note...

With both switches in the centre position both lights will be off.



1 Light switches
2 Wander light socket
3 Socket switch
4 Thermostat

Fig.19 Rear compartment control panel

EBERSPACHER HEATER

77. The level of heat in the casualty compartment is controlled entirely by the thermostat. The heater can be used to supply fresh air at ambient temperature by adjusting the controls to its lowest setting. To operate the heater proceed as follows:-

a. Start-up

(1) Set thermostat to the required level

(2) Pull the switch (Fig 5(5)) on the auxiliary panel out to its first stop, the pilot light illuminates and the blower fan will start.

Note...

No further action is necessary if ventilation only is required.

(3) Pull the switch out to its second stop, the feed pump will start (ticking sound) and the heater will ignite.

WARNING...

IF THE HEATER FAILS TO IGNITE DO NOT ATTEMPT TO SWITCH THE HEATER ON MORE THAN TWICE MORE. IF THE HEATER FAILS TO IGNITE AT THE THIRD ATTEMPT - REPORT.

Note...

The heater normally draws its air supply from outside the vehicle, but if a rapid warm-up of the casualty compartment is required closure of the inlet panel louvre will re-circulate casualty compartment air through the heater. The inlet closing control is a lever fitted on the left hand side of the heater compartment.

CAUTION...

The intake grill for re-circulating air is situated in the top left hand corner of the casualty compartment bulkhead and is to be kept free of obstructions.

b. Shut-down

(1) Push the switch on the auxiliary panel fully in to the 'OFF' position.

Note...

The pilot light will extinguish and the blower fan will continue to run for a short time to cool the heater and then switch off automatically.

(2) Check that the system has shut down before leaving the vehicle.

AIR COOLING SYSTEM

78. The air cooling system (Fig 8) is operated by two controls located on the casualty compartment locker, a blower fan switch and a thermostat. The system is supplied with air by an engine driven compressor which is engaged when the blower control and thermostat are switched on. A hand throttle control is provided on the centre of the engine cover for use when the vehicle is stationary. The stop position of this throttle is pre-set.

Note...

Should adjustment of the throttle stop become necessary, the engine r.p.m. should be adjusted to between 1000-1250 r.p.m.

To operate proceed as follows:-

a. Start-up
   (1) Start the vehicle engine
   (2) Set blower fan control to the required rate of air flow
   (3) Set thermostat to give required degree of cooling.

Note...
Although not essential, setting the system controls to 'OFF' whenever the vehicle engine is not running will ensure that the vehicle starter is not overworked when re-starting the engine.

OXYGEN SYSTEM

79. The vehicles fitted with the resuscitation system the oxygen supply to the patient is piped via the resuscitation control unit. In vehicles fitted with the air conditioning system the oxygen is supplied to the patient via a face mask connected to a control valve in the oxygen cylinder neck. The control valve regulates t supply pressure at 4.0 bars (60 lbf/sq in) when the cylinder is opened with the bottle key. The bottle key is stowed in the righ hand lower stretcher support box.

ENTONOX EQUIPMENT

80. Two 500 litre Entonox cylinders are supplied complete with fa masks, valves and flexible pipelines for use in RAF vehicles only. The cylinders are stowed in brackets mounted on each side of the bulkhead compartment.

WARNING...

OPERATION OF ENTONOX EQUIPMENT IS THE SUBJECT OF SPECIAL INSTRUCTIONS AND WITHOUT THESE THE EQUIPMENT MUST NOT BE USED.

AIR COOLING SYSTEM (RAF vehicles only)

81. To cool the rear compartment as quickly as possible, proceed as follows:-

a. Close all fresh air vents.

b. Set TEMP control to coldest setting.

c. Set FAN control to H(High speed).

d. Open a window for a few minutes to allow the hot air to be expelled quickly.

e. Close the window and adjust controls to the desired speed and temperature.

d. Check that a supply of oxygen is reaching the required face masks by placing a hand over the mask and feel for gas pulsations.

e. Set the control lever on the control box(es) to OFF until required for use.

f. When ready for use, set the control lever(s) to OXYGEN and place the face mask over the patient's nose and mouth.

Using Air

83. To operate the system, proceed as follows:-

Note...
The air reservoir and Norgren filters should have been drained after the system was last in use.

a. Ensure that all drain valves are closed.

b. Set the control levers on the control boxes to OFF.

c. Start the vehicle engine and run at a fast idle speed (approx. 1250 rev/min) and pull the compressor switch to the ON position.

Note...
Although it is by no means essential, if the compressor switch is set to the OFF position whenever the vehicle engine is not running, this will ensure that the vehicle starter motor is not over-worked when starting the engine.

d. Allow air pressure to build up, checking that the warning buzzer operates until system pressure exceeds 4.0 bar (60 lbf/sq in) indicated on the pressure gauge in the driver's cab, then ceases to operate.

Note...
Once pressure has exceeded 4.0 bar (60 lbf/sq in) the system may be used, but where time permits, it is bettor to allow the system to reach its nominal operating pressure of 7.1 bar (100 lbf/sq in) before use.

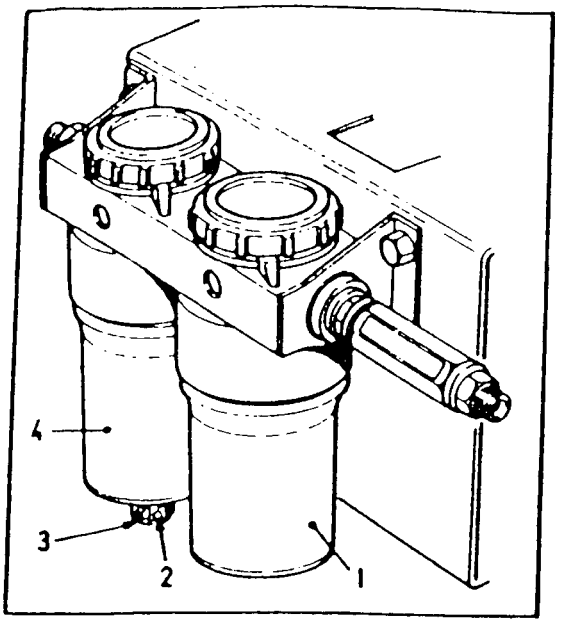


Fig.21 Norgren filters

1 Special carbon filter
2 Valve cap nut
3 Drain valve
4 Puraire filter

e. Connect the required number of patient hoses and face masks to the appropriate control box hose connections for the stretcher positions to be used.

f. Set the control lever on the appropriate control box(es) to AIR and check that system pressure is registered on the gauge (1).

g. Check that a supply of air is reaching the required face masks by placing a hand over the mask and feel for air pulsations.

h. Set the control lever(s) on the control box(es) to OFF until required for use.

i. When ready for use, set the control lever(s) to AIR and place the face mask over the patient's nose and mouth.

Closing Down the Resuscitation System

84. Assuming that all patients have been removed, proceed as follows:-

a. Ensure that the control lever(s) on the control box(es) are set to OFF.

b. Push the compressor switch to the OFF position.

c. Set the control lever on one of the control boxes to OXYGEN, note the pressure on the gauge then set the control lever to OFF.

d. At the oxygen cylinder, using the key stowed adjacent to the cylinder, turn the valve on the neck of the cylinder OFF.

e. Set the control levers on the control boxes to OXYGEN note that the pressure gauges fall to zero, indicating that the system has been exhausted of oxygen.

f. Whilst there is still sufficient air pressure in the system, carry out the following drainage procedure:-

CAUTION...

Protect eyes from residue being forced out under pressur from the drain valve.

(1) At the Norgren filters, hold a suitable container under the drain valve (Fig 21 (3)), then slowly unscrew the plastic valve cap nut (2) 1/2 to 1 tu until air and sediment issues from the drain port

Note...

Keep fingers clear of the port.

(2) When emission of oil and water residue ceases, ha tighten the valve cap sufficiently to ensure an a tight seal. DO NOT OVERTIGHTEN.

(3) Using a clean dry piece of cloth, wipe the filter clean.

Note...

The filter and air reservoir must be drained after each operation of the equipment.

(4) At the left-hand side of the vehicle outside below the battery stowage compartment, locate and pull t air tank vent lever (Fig 9 (7)) to drain the reservoir.

(5) Set the control levers on the control boxes to AIR to exhaust the residual air from the system throug the face masks.

Note...

If an odour is detected in this filtered air, the special carbon filter cartridge requires replacement REPORT.

(6) Check that the control box pressure gauges fall to zero, then set the control levers to OFF.

(7) Ensure that the Norgren filter and air reservoir drain valves are closed.

g. Clean the face masks and patient valves and sterilise before disconnecting, then place them in plastic bags and stow.

Note...
It may be necessary to decontaminate masks etc., if they have been used in an NBC environment.

h. If the pressure indication of the oxygen cylinder previously noted, necessitates, change the oxygen cylinder as detailed in para. 85.

CHANGING OXYGEN CYLINDER (Fig.22)

85. Two types of regulator valve assemblies are available for use; the older type requires the use of a spanner to fit to, or remove from a cylinder, the newer type has a plastic-covered connecting nut (Fig 22) with finger grips.

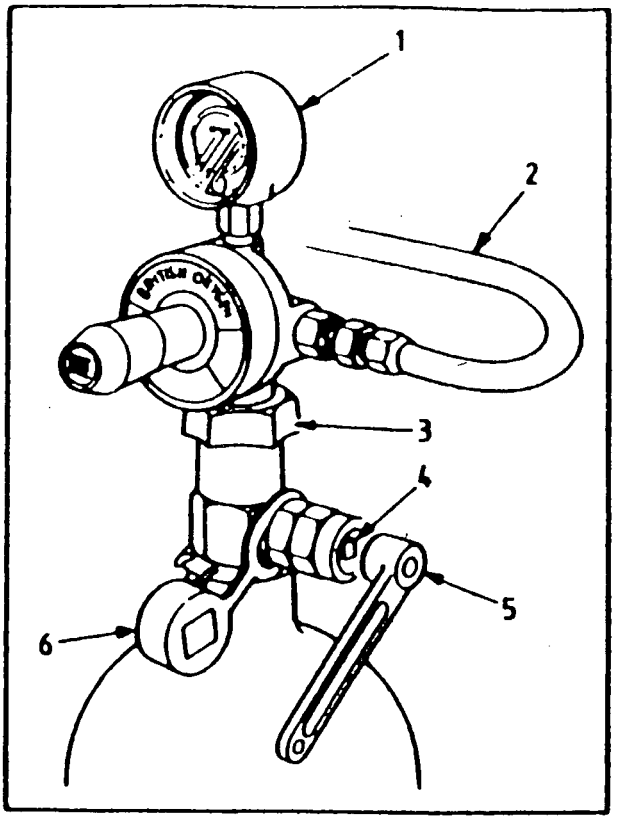
Note...
A spanner, for use with older type regulators is stowed with the valve key, adjacent to the cylinder.

WARNING...
HIGH PRESSURE OXYGEN SUPPLY. DO NOT ALLOW OILS, GREASES, NAKED FLAMES OR EXPOSED FILAMENTS NEAR OXYGEN EQUIPMENT.

a. Ensure that the valve (4) in the neck of the cylinder is fully closed, and that all residual oxygen in the system has been exhausted (refer to para. 84).

b. Unscrew and remove the regulator valve assembly from the cylinder, by either unscrewing the large plastic covered nut (3) or by using the spanner on the union nut.

c. Remove the protective transit cap (6) from the second cylinder, then fit the regulator assembly to the second cylinder and tighten either by hand or using the spanner. Replace the spanner in its stowage.



1 Cylinder pressure gauge
2 Delivery hose
3 Plastic covered nut
4 Valve
5 Cylinder key
6 Transit cap

Fig 22 Oxygen cylinder regulator valve assembly

d. Open the valve in the neck of the cylinder. Check the contents available in the bottle on the gauge on the regulator valve assembly.

e. Set the control levers on the control boxes to OXYGEN. Note the pressure on the control boxes gauges and check the face masks for correct operation.

f. Set the control levers to OFF. Turn off the cylinder valve. Set the control levers to OXYGEN to exhaust the residual gas from the system, note the pressure gauges return to zero. Set the control levers to OFF.

g. As soon as possible, replace the empty cylinder with a full one.

CONNECTING AND DISCONNECTING FACE MASKS

86. The procedure for connecting and disconnecting face masks is as follows:-

a. Connecting

(1) Push the cone ended adaptor on the patient hose into the appropriate hose connector (Fig 20(2)) on the control box.

(2) Lightly pull on the hose to check for security of attachment.

b. Disconnecting

(1) Lift the outer knurled sleeve of the mask connector (Fig 20(4)) and the cone ended adaptor will be ejected.

DISASSEMBLING FACE MASK VALVE (Fig 23)

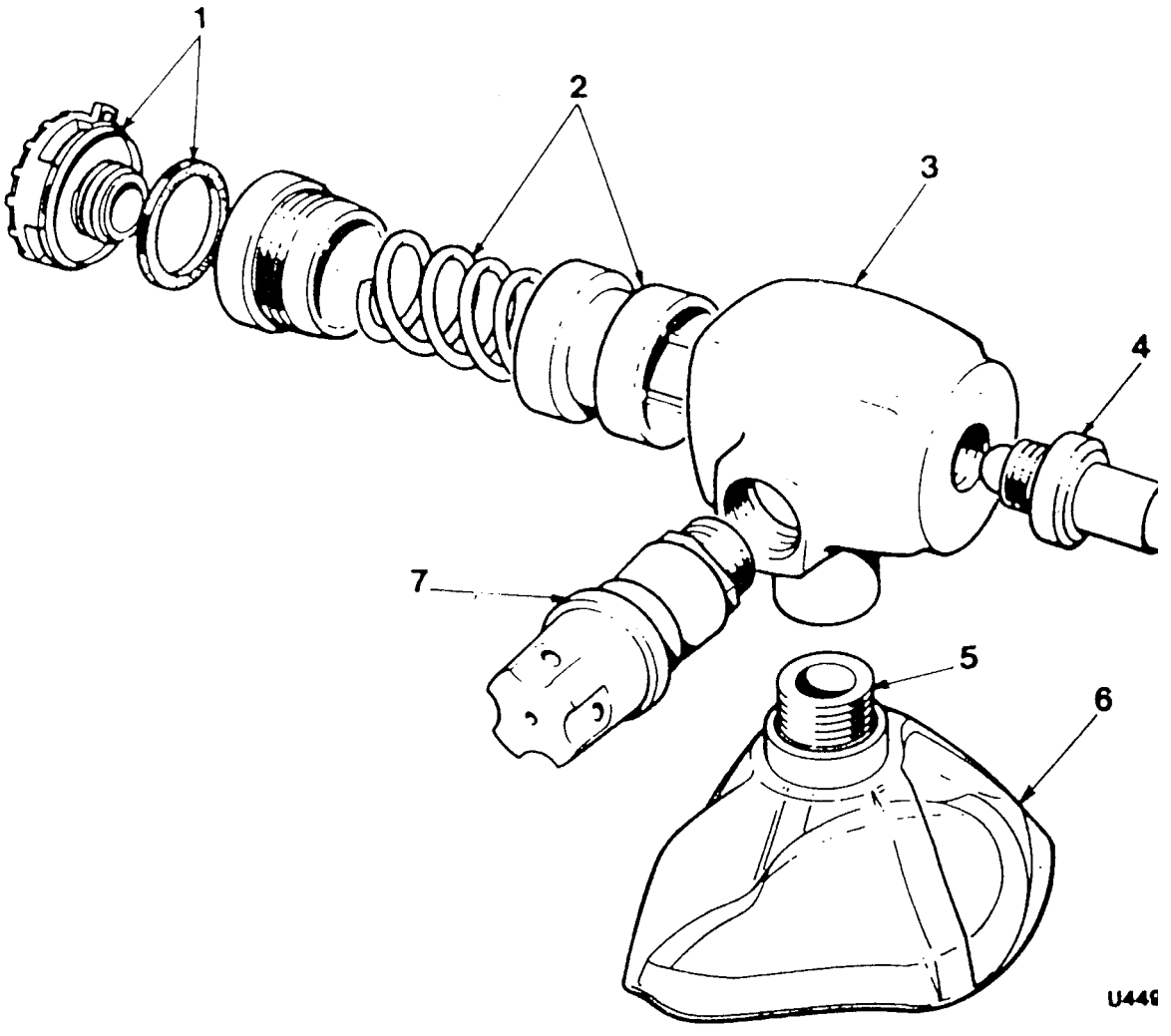
87. The valve must be disassembled and cleaned after use, or if not working satisfactorily. A multi-purpose spanner, which is clipped to each face mask hose should be used. The procedure is as follows:-

a. Remove and extract the piston and main spring (2) as an assembly. Do not attempt to separate.

b. Unscrew the safety relief valve (7) using the spanner on the hexagonal portion of the valve body.

c. Clean and sterilise all parts as necessary.

d. Dry thoroughly, then re-assemble ensuring that there is no ingress of foreign matter.



1 Anti-inhalation valve
2 Piston and spring assembly
3 Valve body
4 Hose (from central box)
5 Face mask retaining nut
6 Face mask
7 Relief valve

Fig 23 - Face mask valve

Section 3

Chapter 1

User Servicing and adjustments

LUBRICATION

88. a. Apply a few drops of oil to the rear door opening mechanism and hinges, bodyside hinges and latches, rear step mechanism and hinges, stretcher clamp pivot bolts, bodyside and roof flaps hinges and escape hatch mechanism.

b. Apply grease to each stretcher lift mechanism. Three grease nipples are provided for each mechanism.

CHANGING LAMPS

Map Reading Light

89. To change a lamp in the map reading light (Fig 24), ensure that the control switch is set to OFF. Remove the screw securing the metal cover and glass, remove the defective lamp and replace. Finally re-assemble the light.

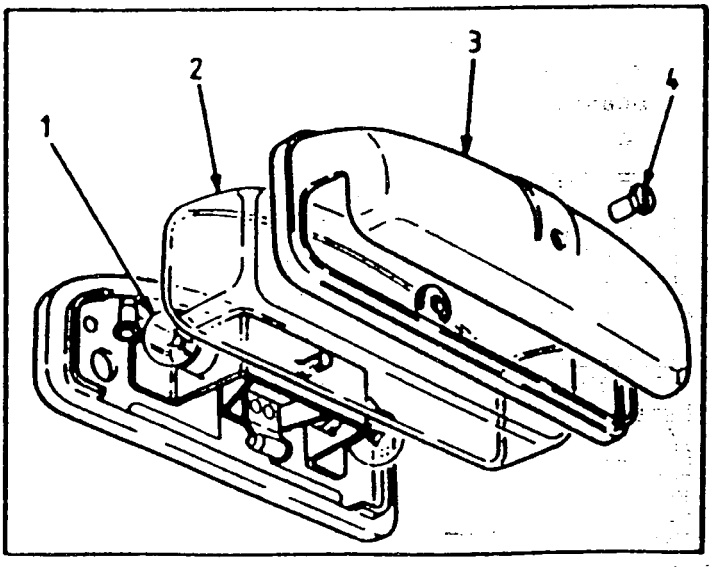
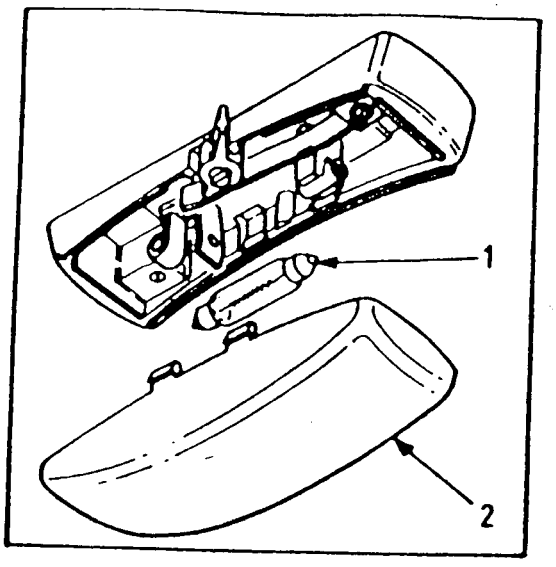


Fig.24 Map reading light

1 Lamp
2 Glass cover
3 Metal cover
4 Securing screw



1 Lamp
2 Lamp cover

Fig.25 Cab Light

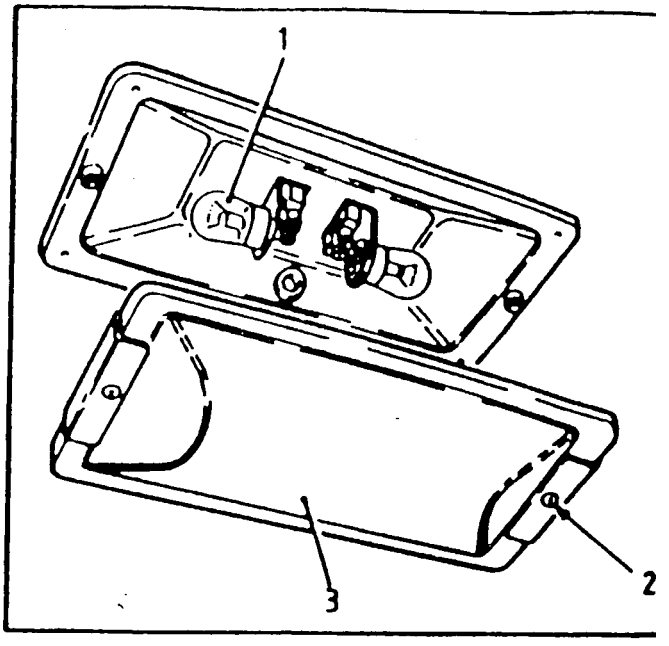
Cab Light

90. To change a lamp in the cab light (Fig 25), ensure the control switch is set to OFF. Press the long sides of the covers inwards. Remove the cover, the lamp is then readily accessible and can be replaced. Finally, press the cover back in position.

Casualty Compartment Light

91. To replace the lamps in the casualty compartment (Fig 26). Ensure the control switch is set to OFF. Remove the screws securing the cover, the lamps are then readily accessible and can be replaced. Finally, secure the cover in place.

Fig.26 Casualty compartment light

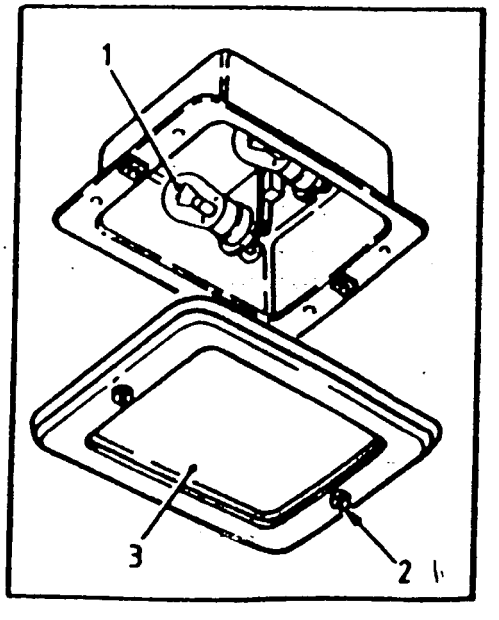


1 Lamp
2 Securing screw
3 Lamp cover

Casualty Compartment Blackout Light

92. To replace the lamps in the casualty compartment blackout light (Fig 27). Remove the screws securing the blue glass cover, the lamps are then readily accessible and can be replaced. Finally, secure the cover in place.

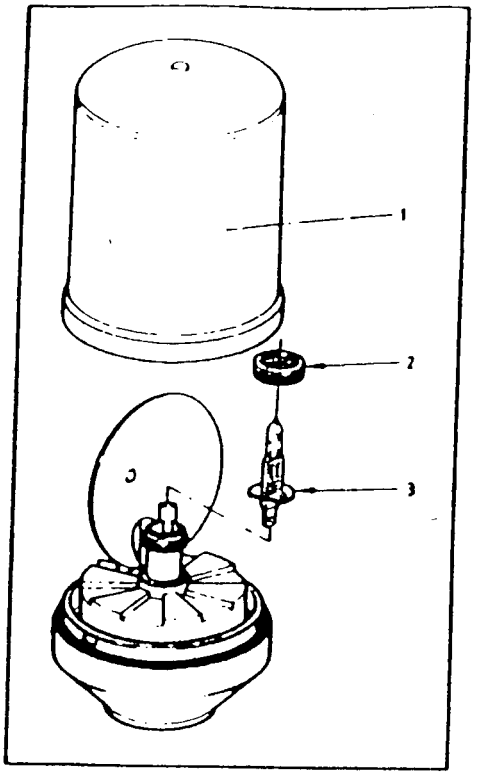
Fig. 27 Casualty compartment blackout light



1 Lamp
2 Securing screw
3 Cover

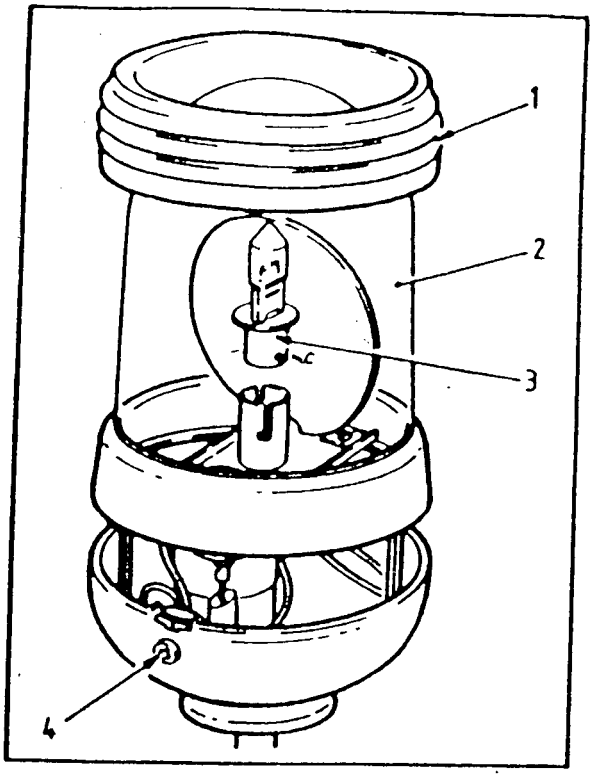
Rotating Beacon

93. To replace the lamp in the older type rotating beacon (Fig 28) Remove the weather seal, slacken the securing screw, lift off the b cover, leaving the lamp readily accessible for replacement. Repla the blue cover and tighten the securing screw. Finally, replace t weather seal.



Newer Type

1 Blue cover
2 Securing screw
3 Lamp



Older Type

1 Weather seal
2 Blue cover
3 Lamp
4 Securing screw

Fig.28 Rotating beacon (alternative types)

To replace the lamp in the new type rotating beacon (Fig 28). Remove the blue cover, unscrew the securing screw, leaving the lamp readily accessible for replacement. Replace the securing screw. Finally replace the blue cover.

Front fog light

94. To replace a lamp in the front fog light (Fig 29). Remove the two screws securing the cover, disconnect the lamp lead. Remove the spring wire retainer, remove the unserviceable lamp and replace with a new one. Secure the lamp to the reflector with the spring wire retainer, re-connect the lamp lead. Finally, secure the cover in place.

Note...

Do not touch replacement lamp with bare fingers.

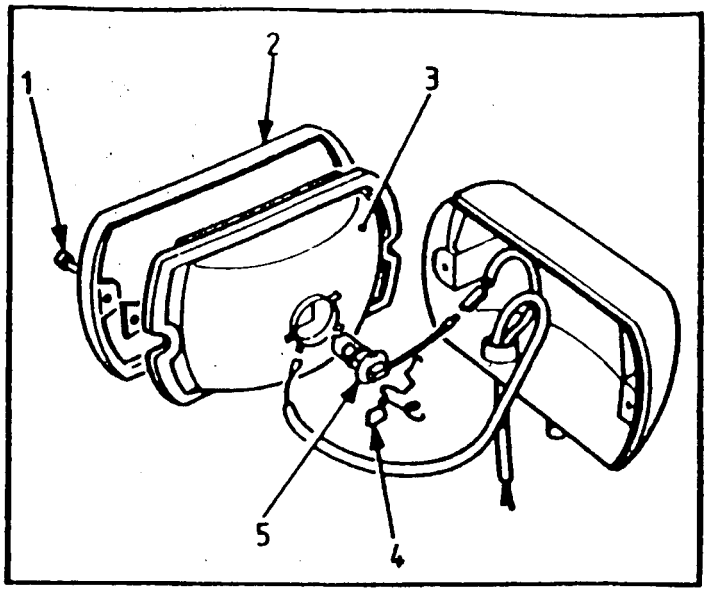


Fig.29 - Front fog light

1 Securing screw
2 Cover
3 Reflector
4 Spring wire retainer
5 Lamp

Rear Fog Light

95. Unscrew the red cover, the lamp is readily accessible and can be replaced. Finally, screw the cover back in place.

Rear Compartment Wander Light

96. Remove the rubber retaining ring and the wire grill, the lamp is readily accessible and can be replaced. Finally, replace the wire grille and rubber retaining ring.

RESUSCITATION SYSTEM

97. Daily after use and at prescribed vehicle servicing intervals, the resuscitation system is to be tested, following the instructions detailed in Chapter 2, Special Instructions, of this Section.

AIR COOLING SYSTEM (RAF vehicles only)

98. At the prescribed intervals, or more frequently if the vehicle is driven through dusty environments or through swarms of insects, carry out the following:-

a. Condenser

(1) Remove all foreign matter such as leaves and insects from around the tubes and between the fins and intake grille to ensure a free circulation of air.

b. Evaporator
   (1) Remove all foreign matter from around the tubes and fins of the heat exchanger and intake grille to ensure a free circulation of air.
   (2) Examine fan blades for wear, damage, abrasion and cleanliness.
   (3) Clean the fan blades to prevent them from becoming unbalanced.
   (4) Remove the foam filter element, wash with warm soapy water, rinse, dry and replace.

c. Wiring
   (1) Examine all visible wiring for signs of wear and abrasion.

d. Hoses
   (1) Examine all hoses for wear. Excessively worn hoses are to be replaced. Re-route the hose to avoid further wear.
   (2) Examine hose clips and ensure that clips have not been overtightened.

e. Filter Drier
   (1) Operate system for several minutes and check refrigerant level indication in sight glass. Bubbles or foam in the refrigerant indicate that the level is low. Check system carefully for leaks. Rectify any faults found and re-charge the system.

f. Thermostat Check
   (1) Operate the system, set the temperature control to a higher temperature than that inside the rear compartment.
   (2) Ensure that the electro-magnetic clutch has disengaged and cooling has terminated.
   (3) Set the temperature control to a lower temperature than that inside the rear compartment and ensure that the cooling system cuts in again.

99. Any undue noise or vibration must be investigated immediately. The causes vary and can be mechanical, electrical or associated with the refrigeration system.

Section 3

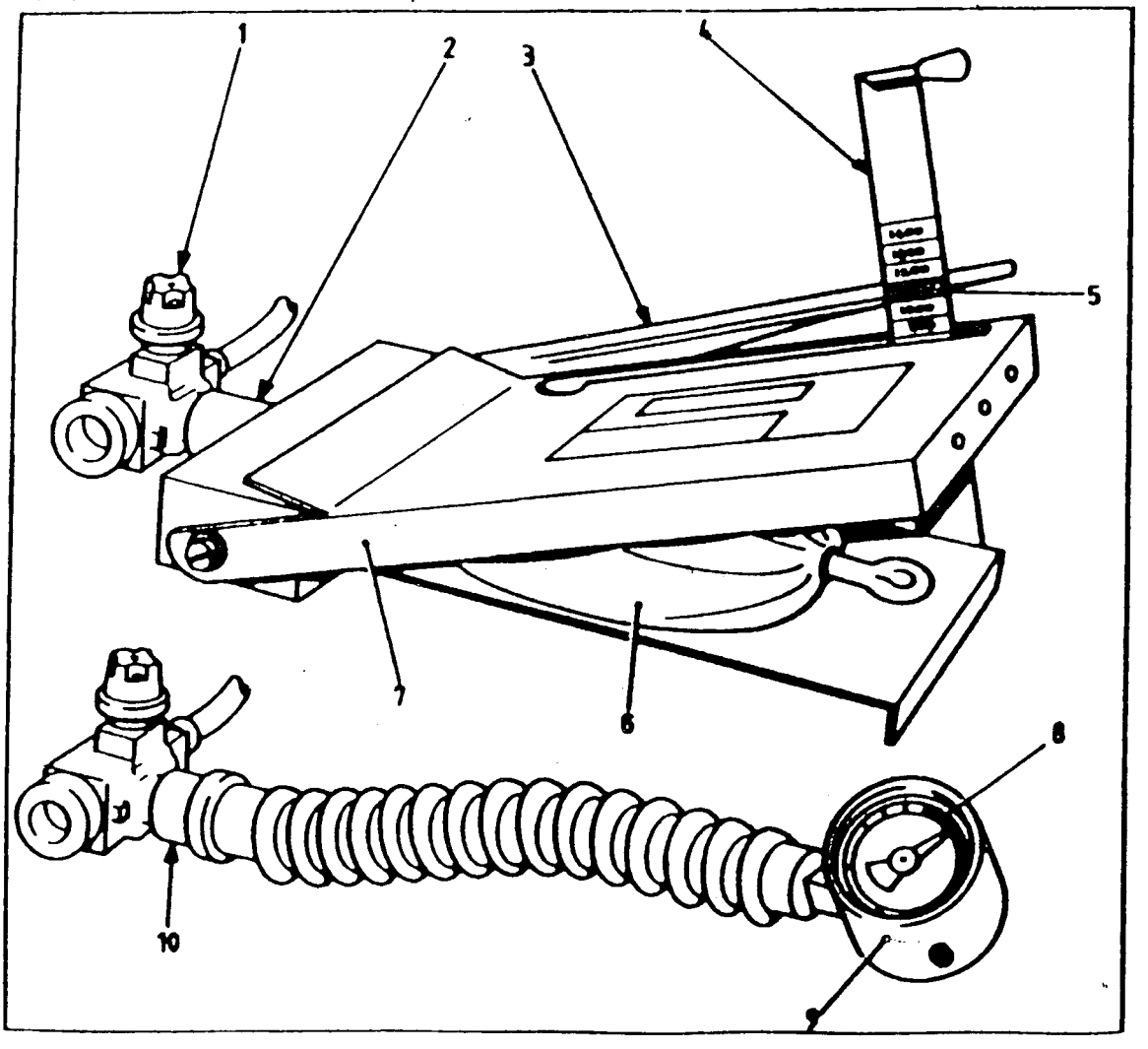
Chapter 2

Special Instructions

TESTING RESUSCITATION SYSTEM

GENERAL

100. The test set (Fig 30) has been designed to test the pressure and tidal volur delivered to each face mask quickly. The test set comprises a test lung and a pressu test gauge. Both the test lung and pressure gauge are attached in turn to each face ma valve to check for the correct operation of the resuscitator.



1 Face mask valve
2 Lung inlet
3 Indicator arm
4 Volume scale arm
5 Green sector
6 Lung
7 Test set
8 Green segment on pressure gauge
9 Pressure gauge
10 Gauge inlet

Fig 30 - Resuscitation system test set

101. The valve is functioning satisfactorily when the test lung indicator arm rises to within the green sector on the volume scale arm and when the pointer on the pressure gauge registers with the green segment on the gauge scale.

TEST PROCEDURE

102. The tests must be carried out on both air and oxygen systems. The procedure for each system is similar. The test described in the following paragraphs are for the oxygen system, when the air system is tested, the only difference being that instead of setting the control lever on the control unit to OXYGEN, it should be set to AIR.

Note

Although the procedures are intended primarily to check the function of the resuscitator module and face mask valve, they will also indicate the presence of a serious supply failure in the circuit.

a. Pressure Test

(1) Remove the face mask from the valve.

(2) Connect the valve hose to one of the connections on one of the control units.

(3) Connect the corrugated tube from the pressure test gauge to the face mask valve outlet.

(4) Using the key stowed adjacent to the oxygen cylinder, turn the cylinder valve on and check the pressure of oxygen available from the cylinder.

(5) Set the control lever on the control unit to OXYGEN and note that oxygen supply pressure is indicated on the control unit pressure gauge.

▶ (6) At the pressure test gauge ensure that the output pressure during inspiration registers within the green segment (480mm w.g. to 720mm w.g) and at the same time the audible alarm sounds.

(7) If the indicated pressure is outside the segment, check all connections to ensure that there are no leaks. If no leaks are present, a fault is indicated. Report any faults immediately.

(8) On completion of this test with each face mask valve and all outlets from the control units, start the vehicle's engine; allow the air pressure system to build up to a maximum working pressure - 7.1 bar (100lbf/sq in) - set the control lever on the control unit to AIR and repeat the pressure gauge test. ◀

b. Flow Test

(1) Remove the pressure test gauge from the face mask valve outlet and connect the valve outlet to the red plastic inlet of the test lung ensuring that the pressure relief valve on the face mask valve is vertical and that the test lung is supported on a firm horizontal flat surface.

(2) Raise the volume scale arm by its red knob, to its fullest extent.

(3) Set the control lever on the control unit to OXYGEN and allow the test lung to cycle two or three times, after which the indicator arm should be within the green sector on the volume scale 990 to 1210 ml). If the arm is outside the green sector, this is an indication of a fault and must be reported immediately.

(4) The first inflation of the lung will cause the indicator arm to rise and it should subsequently rise to the same level each time.

(5) Using a stop watch, check the frequency at which the test lung operates. The correct frequency is 12.6 to 15.4 cycles per minute. Any frequency outside these limits indicates a fault which must be reported immediately.

Note . . .

When the timing starts, the first pulse should be counted as zero.

(6) This paragraph deleted by Amdt 2.

(7) On completion of these tests at all outlets from the control units, set the control levers on the control units to AIR and repeat the tests.

(8) On completion of all tests, re-connect the face masks to the valve outlet and stow the face mask valve assembly and hose.

(9) Switch off the vehicle's engine and drain the air from the system.

(10) Turn the oxygen cylinder valve off and exhaust the residual oxygen from the system.

PREPARATION FOR SEA OR AIR TRANSPORTATION

103. Carry out the following operations:-

a. Remove the front fog lights from the mounting brackets on each side of the vehicle.

b. Remove the beacon light from the mounting on the roof. On RAF vehicles, remove the roof-mounted aerial.

c. Remove the silica gel desiccator from each double glazed window in the rear doors and the rear compartment side walls.

SLINGING POINTS

104. Slinging points in the form of four bow-spring shackles are provisioned and positioned at the front and rear of the vehicle.

TIE-DOWN POINTS

105. Tie-down points for securing the vehicle during land, sea or air transportation are provided by the two forward slinging bow-spring shackles and a large tie-down bracket attached to the rear chassis frame.

DO'S AND DONT'S

106.

a. Do switch on the Eberspacher heater and operate briefly once a month during warm weather.

b. Do switch off the Eberspacher master heater when adding fuel.

c. Do ventilate the interior of the whole vehicle after using fire extinguishers.

d. Do drain the resuscitation system after use.

e. Do change NBC filter cartridges if used in an NBC environment.

f. Do carry out the Test Set checks after use of resuscitation system.

g. Do keep face masks clean and in a sterilised condition.

h. Do not operate the Eberspacher heater in a garage.

i. Do not switch the Eberspacher heater ON and OFF more than twice more if the heater fails to ignite at the first attempt.

j. Do not allow oxygen cylinders to become completely discharged.

Section 4

Destruction of Equipment

GENERAL

Destruction

107. Destruction of the equipment, when subject to capture o abandonment in the combat zone, will be undertaken by the Us Arm.

Degree of damage

108. Methods of destruction should achieve such damage to eq and essential spare parts that it will not be possible to re the equipment to a usable condition in the combat zone either repair or by cannibalization.

109. Classified equipment must be destroyed in such degree as prevent, whenever possible, duplication by, or revealing mean operation or function to the enemy.

Priorities for destruction

110. Priority must be given to the destruction of classified equipment and associated documents.

111. When lack of time and/or stores prevents complete destru of equipment, priority is to be given to the destruction of e parts, and the same parts are to be destroyed on all like equ

112. A guide to priorities for the destruction of the equipmer shown below.

Parts	Priority
Tyres, wheel and suspension	1
Braking system	2
Frame	3