

**ARMY
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22153**

Issued March 1967

**AMBULANCE, 2/4 STRETCHER,
4 x 4 ROVER 11**

USER HANDBOOK

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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.

<i>Amdt. No.</i>	<i>Date</i>	<i>Signature</i>	<i>Amdt. No.</i>	<i>Date</i>	<i>Signature</i>

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USER HANDBOOK
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4 x 4, ROVER 11

Amendment No. 1

August, 1969

HANDWRITTEN AMENDMENTS

When making the following handwritten amendments
write (Amdt.1) in the margin against each amendment.

Page x

Below -

APPENDIX I

Cross References to Servicing Operations 168-169

Insert -

SUPPLEMENT No. 1

Ambulance Body 1

Page 23, Key to Fig 11

Amend - 22	Oil temperature gauge	...	...	38
To read - 22	Hand throttle control	...	...	24
Amend - 23	Hand throttle control	...	...	24
To read - 23	Oil temperature gauge	...	...	38

REMOVAL AND INSERTION OF LEAVES

- Remove Title Page and Amendment Record Page
(one leaf)
- Substitute New Title Page and Amendment Record Page
(one leaf)
- Remove pages 1-11 and xv (two leaves)
- Substitute new pages 1-11 and xv (two leaves)
- Insert Supplement No.1 comprising Marker and Pages
201 to 217 (10 leaves) to follow Page 169.

AMENDMENT RECORD SHEET

Record the incorporation of this amendment in the
record sheet at the beginning of the book.

NOTES TO READERS

This publication, primarily for use with Rover Cargo Vehicles, has been adapted for use with Ambulance, 2/4 stretcher, 4 x 4, Rover 11.

All reference to 24 volt electrical systems should be ignored.

Particulars of the Ambulance Body are given in Supplement No.1.

The subject of this publication may be affected by Defence Council Instructions. If possible, amendments are issued to correct this publication accordingly. When an Instruction contradicts any portion of this publication, the Instruction is to be taken as the overriding authority.

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LIST OF ASSOCIATED PUBLICATIONS

	ARMY		Army Code No.
Parts List	20873
Servicing Schedule	60139
Technical Handbook	EMER Wh. Vehs. Q 022

(Amdt. 1)

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A M B U L A N C E B O D Y

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SUPPLEMENT No. 1

AMBULANCE BODY

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Fig 201 Three-quarter front view of ambulance



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Fig 202 Three-quarter rear view of ambulance

AMBULANCE BODY

401. The main details in this supplement are those that differ from, or are additional to, those given in the main portion of the book.

DATA

VEHICLE DIMENSIONS

Length of vehicle	...	...	15 ft 9 inch	(4.8 m)
Width of vehicle	...	...	6 ft 3 inch	(1.9 m)
Height of vehicle	...	...	7 ft 0 inch	(2.13 m)
Internal length of body	...	...	7 ft 8 $\frac{1}{2}$ inch	(2.34 m)
Internal width of body	...	...	5 ft 9 $\frac{1}{2}$ inch	(1.75 m)
Internal height of body	...	...	4 ft 3 $\frac{1}{2}$ inch	(1.31 m)

HEATING EQUIPMENT

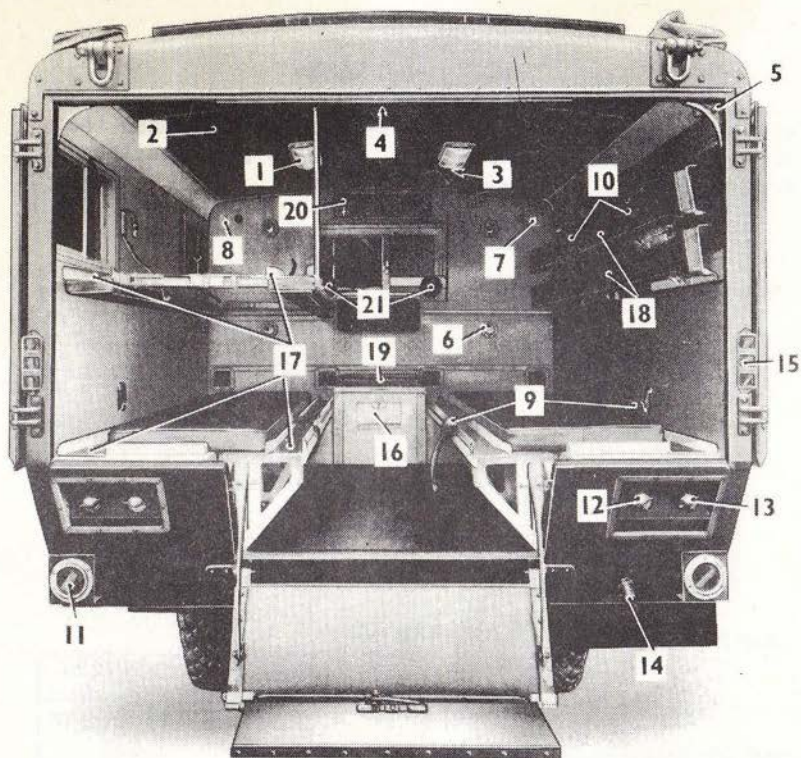
Cab heater unit and control	...	...	Key-Leather
Body heater unit	...	...	Key-Leather
Blower units	...	...	Key-Leather

LAMPS

<i>Light</i>	<i>Make</i>	<i>Volts</i>	<i>Watts</i>	<i>Type</i>	<i>Cat. No.</i>
					X5/6240-99-995-
Map reading Ambulance (Red Cross) and black- out Body	Lucas No.207	12	6	S.C.C.	2245
	Lucas No.209	12	6	S.B.C.	2249
	Lucas No.403	12	21	S.B.C.	

FUSES

<i>Location</i>	<i>Circuit</i>	<i>Type</i>
Adjacent to control board and R.H. side	Fuse 3 Ambulance light and heaters	35A Cartridge
	Fuse 4 Body lights Blackout light	35A Cartridge



U4142/8.

Fig 203 Interior view of body

- | | |
|--------------------------------------|-----------------------|
| 1 Body light | 11 Rear reflector |
| 2 Roof ventilator shutter | 12 Turnlight |
| 3 Plasma bottle hook | 13 Stop/tail light |
| 4 Body blackout light | 14 Number light |
| 5 Blackout light switch | 15 Rear reflector |
| 6 Ball-type air deflector | 16 Air outlet shutter |
| 7 Air blower switch - R.H. | 17 Stretcher runners |
| 8 Air blower switch - L.H. | 18 Back rest |
| 9 Stretcher straps | 19 Attendants seat |
| 10 Stretcher runner retaining straps | 20 Water tank |
| | 21 Stretcher buffers |

BODY

DESCRIPTION

402. The body (Fig 201 and 202) is fully enclosed and has an aluminium framing with aluminium external panels and hardboard internal panels. The body features, additional to those on the basic chassis, are as follows:-

Doors and rear step

403. Two rear doors, covering the complete width of the body, are mounted on outrigger hinges so that the doors can be opened to fold back along the sides of the body. The doors are retained in the open position by spring-loaded claws on the sides of the body. Each door is fitted with a fixed window. Two cab doors are fitted, one on each side. Each door has a window, half of which is sliding, and a slam type lock. A folding step is fitted on the rear of the body.

404. Occasionally apply a few drops of oil to the hinges and locks.

Windows

405. One front window is provided in the bulkhead between the driver's cab and casualty compartment and two windows in each side of the casualty compartment. Each window has one sliding half and a sliding mosquito-proof gauze. All the windows are provided with black-out blinds.

406. To open and close the front window, or mosquito-proof gauze from within the driver's cab, push on the side frame and slide as required. A handle is fitted on the window within the casualty compartment for sliding the window from that side.

407. To open and close a side window, or mosquito-proof gauze from within the casualty compartment, push on the side frame and slide as required.

Stretcher runners

408. The body accommodates four stretchers, an upper and a lower on each side. The runners (Fig 203(17)) for the lower stretchers are permanently attached to framing on the body sides, whilst the upper are hinged and supported by struts attached to the body roof. When required, the upper runners can be folded and stowed against its body side to form backrests (18) for 8 seated casualties.

Stowage lockers

409. One locker is located immediately behind the bulk-head and extends to the full width of the body. This locker is sub-divided into four compartments one of which is accessible through external hinged flaps on each side of the body. Access to the remaining three compartments is obtained through hinged lids inside the body. Two lockers, one each side of the body beneath the stretcher runners (Fig 203(17)), are provided. Access to the lockers is obtained through hinged lids.

Drinking water tank

410. A drinking water tank (Fig 203(20)), mounted in the cab roof is accessible from the body and is located above the attendant's seat.

Seats

411. An attendant's seat (Fig 203(19)) is fitted on the front locker framing and two casualty seat cushions are located between the stretcher runners.

Ventilators

412. Two ventilators are fitted in the cab roof and are provided with internal detachable grilles. A sliding shutter (Fig 203(2)) is fitted to each ventilator.

OPERATION

CONTROLS

Heating and ventilating system

413. The heating portion of this system is incorporated with the engine cooling system and its purpose is to heat the cab and casualty compartment, or circulate cold air through the casualty compartment. Two heater units are fitted, one (Fig 204(6)) in the driver's cab and one (5) beneath the attendant's seat in the casualty compartment, and they are connected to the engine cylinder coolant jacket by pipes as shown. Built in ducting in to body and flexible pipes connect two air inlet apertures (Fig 205(2)) in the front of the body roof to outlets in the cab, below the driver's and passenger's seats, and in the casualty compartment, below the attendant's seat. Each outlet is provided with a shutter to enable the outlets to be closed when heating or ventilation is not required. Two electrically operated blowers (Fig 204(3)) are incorporated in the ducting to increase the flow of air and four ball-type air deflectors (4) and (Fig 203(6)) are provided in the casualty compartment for ventilation purposes.

414. Shut-off cocks (Fig 206(5) and (6)) are fitted in the inlet and out-let connections on the engine so that the heating system can be made inoperative, and drain cocks (Fig 204(8)) are provided in the pipe runs for draining the system. The drain cocks should be used in addition to those referred to in para 100 when the cooling system is drained.

Windscreen demisting

415. A control lever, located on the top of the heater unit in the driver's cab, controls the air for windscreen demisting. The control lever should be moved to the R.H. position for demisting purposes.

Blowers

416. Each of the two blowers (Fig 204(3)) is controlled by a switch (Fig 203(7) and (8)) in the casualty compartment. An additional switch, marked 'B' and mounted in the driver's cab on the R.H. side of the ignition and lights switch, also controls the L.H. blower. Normally the forward movement of the vehicle produces sufficient air flow through the heating and ventilating system, but the blowers increase the flow and maintain the flow when the vehicle is moving slowly or is stationary.

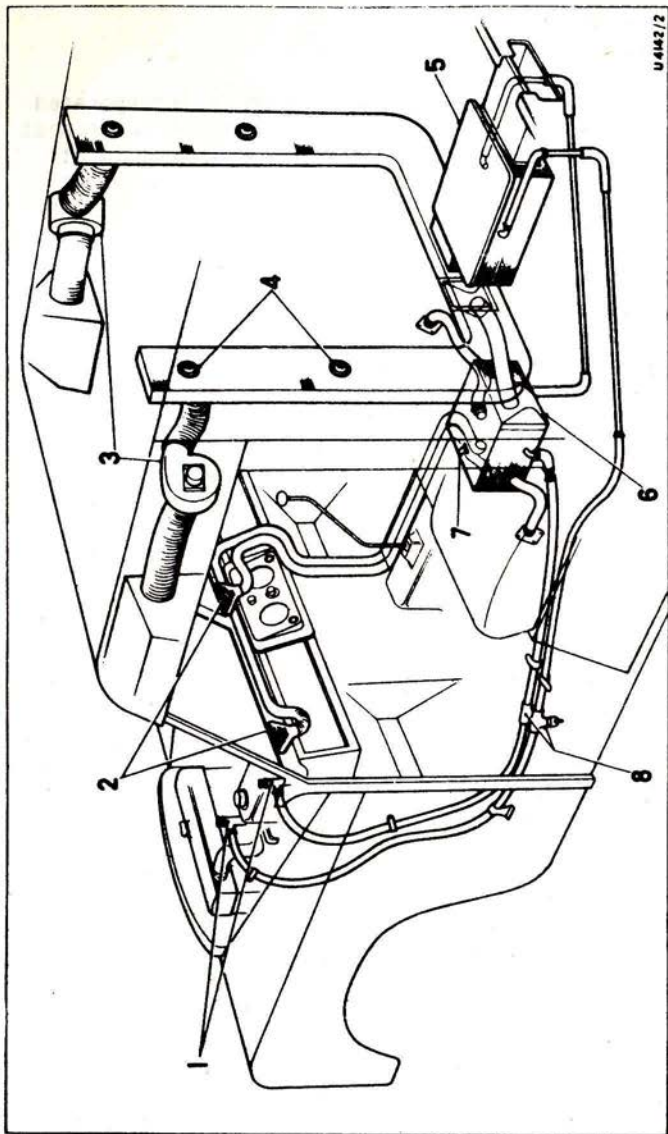


Fig 204 Heating and ventilating system

- | | | |
|--|---|---|
| <p>1 Shut-off cocks
2 Windscreen demisters
3 Air blowers</p> | <p>4 Ball-type air deflectors
5 Heater unit - casualty compartment
6 Heater unit - driver's compartment</p> | <p>7 Windscreen demisting control lever
8 Drain cocks</p> |
|--|---|---|

Ignition switch and key

417. See para 25. The switch controls the ignition, warning lights (main indicator, oil and choke), wind-screen wipers, heaters, fuel gauge, and the red cross light.

Inspection light and spotlight socket

418. In the top left-hand corner of the instrument panel are a pair of sockets which can be used for an inspection light, spotlight or trickle battery charger; the black socket is earthed. When the spotlight is being used, the side window is opened to permit the entry of the cable and also to operate the spotlight.

Map reading light

419. Located to the left of the instrument panel on right-hand drive vehicles and to the right of the instrument panel on left-hand drive vehicles. Rotate the cover clockwise for ON position. The side and panel lights must be ON before the light can be switched on.

Ambulance (Red Cross) light switch

420. The pull for 'ON' type switch, located on the panel to the right of the ignition and lights switch, controls the red cross light (Fig 205(3)) on the front of the vehicle and is identified by a red cross painted on the switch knob.

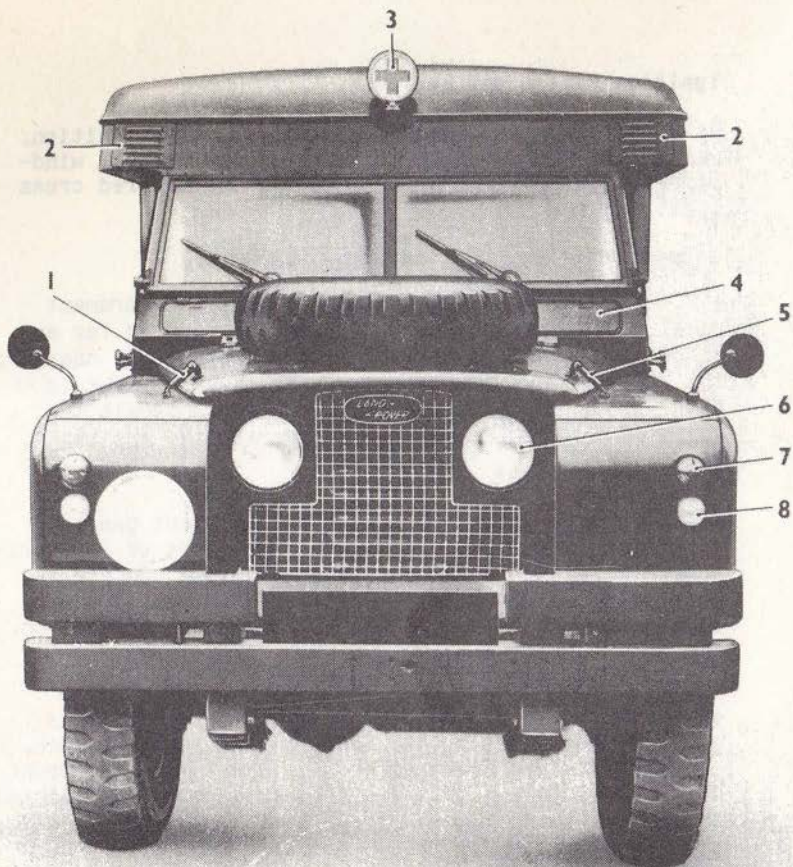
Body light switch

421. The tumbler switch located in the cab on the bulkhead behind the driver's seat. Controls the body roof lights and the blackout light.

Blackout light switch

422. The 2-way micro-switch (Fig 203(5)) located at the rear of the body in the top right-hand corner and operated by the adjacent door. With the door closed the two body roof lights are 'on'; with the door open the blackout light only is 'on'.

423. A loosely riveted pear-shaped plate is fitted adjacent to the micro-switch. The plate can be moved across to hold the body light micro-switch in the 'ON' position with the doors open.



U4142/6.

Fig 205 Front view of ambulance - Army Vehicles

- | | |
|--|-------------------------|
| 1 Bonnet clamp | 4 Windscreen ventilator |
| 2 Air inlet apertures -
heating and ventilating
system | 5 Bonnet clamp |
| 3 Ambulance (red-cross) light | 6 Headlight |
| | 7 Turnlight |
| | 8 Sidelight |

ELECTRICAL EQUIPMENT

424. Generally the electrical equipment is as described in Chapter 13. Lamps and fuse details are listed under DATA.

425. Additional electrical components include a map reading light, ambulance (red cross) light, body lights, heater units, together with the associated switches and fuses.

426. A trailer socket is not fitted.

427. Two 2-way fuse boxes are fitted (Fig 206(1) and (3)). All fuses are 35A glass cartridge type and each box carries a spare fuse or fuses.

428. Circuit details are shown on Fig 210.

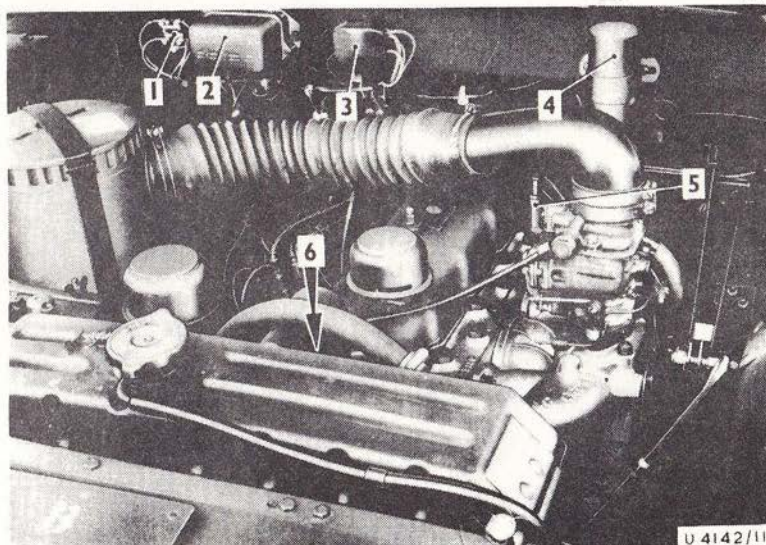


Fig 206 Engine compartment

- | | |
|--|--|
| 1 Fuse box - ambulance
lights and heaters | 4 Ignition coil |
| 2 Control board | 5 Rear shut-off cock,
heating system |
| 3 Fuse box - vehicle
circuits | 6 Front shut-off cock,
heating system |

MAP READING LIGHT - Lucas Ref No.56057

429. The map reading light is a "rotate to on" type light. It has a metal cover with a key formed on its inside to engage a slot in a centre contact lampholder so that rotating the cover rotates the holder to switch the light on or off. The cover fits on a spring ring on the holder. A slot forms the light aperture thus preventing dazzle.

430. Side and panel light switches must be ON before the map reading light can be used.

Routine adjustments and servicing

431. Access to the lamp is obtained by pulling the cover from the light; when replacing the cover ensure that the key is located in the lampholder slot.

AMBULANCE (RED CROSS) LIGHT - Butler Ref No. 1050/V12

432. The Ambulance (Red Cross) light (Fig 205(3)) is a stem mounted unit controlled by the pull-push type switch situated to the right of the ignition and lights switch. It consists of a body (Fig 207(1)), lampholder assembly and a rim and reflector assembly.

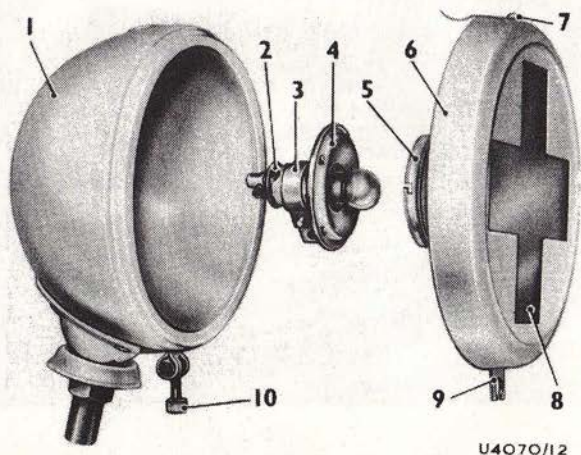


Fig 207 Ambulance (red-cross) light

- | | | |
|--------------|------------------|-----------------|
| 1 Body | 4 Lampholder | 8 Red glass |
| 2 Lampholder | housing | 9 Catch |
| 3 Lampholder | 5 Reflector | 10 Rim securing |
| securing | 6 Rim | screw |
| clip | 7 Location piece | |

433. The stem mounting is of the adjustable type to permit the direction of the light to be adjusted when the stem nut is slackened.

434. A bayonet type fixing is used to secure the lamp-holder assembly to the back of the reflector (5), unequal sized keys and slots in the holder and reflector respectively ensure correct assembly.

435. The double contact lampholder (2) is adjustable in its housing (4), when the securing clip (3) is slackened off, to permit focussing when the holder is used in a standard light; this facility is not required in the ambulance light.

436. Six spring clips are used to secure the reflector (5), with rubber gasket, and a red glass (8) in the rim (6). The rim has a metal face in which is cut the red cross sign.

437. A location piece (7) riveted to the rim locates in a slot in the top of the body and a pivoted knurled screw (10) locates against a catch (9) on the rim to secure the assembly.

Routine adjustments and servicing

To change a lamp

438. (1) Put the ambulance light switch to OFF.
- (2) Unscrew the knurled headed screw at the bottom of the light and swing it clear of the catch. Swing the rim outwards and withdraw the rim assembly from the body.
- (3) Turn the bayonet type fixing lampholder anti-clockwise and withdraw it from the reflector.
- (4) Fit the new lamp and reassemble the light in the reverse order to that indicated for dismantling.
- (5) Check the light.

To adjust the direction of the light

439. Slacken off the stem securing nut, move the light body on its mounting as required and tighten the nut.

BODY LIGHTS

440. The body lights include two lights (Fig 203(1)) in the roof of the body and a red blackout light (4) at the centre rear of the body.

441. The main control switch is on the bulkhead in the driver's cab, it is connected in series with a 2-way micro-switch (5). The micro-switch is operated by the opening and closing of the adjacent door. With the door open the blackout light is in circuit; with the door closed the switch is operated and the roof lights are in circuit in lieu of the blackout light.

BLACKOUT LIGHT - BMAC low power No. 102

442. The blackout light has a red glass (Fig 208(3)), and a light shield (4), these two items, together with a rubber gasket (2), being secured to a metal base (1) by a knurled ring (5) which screws on the base.

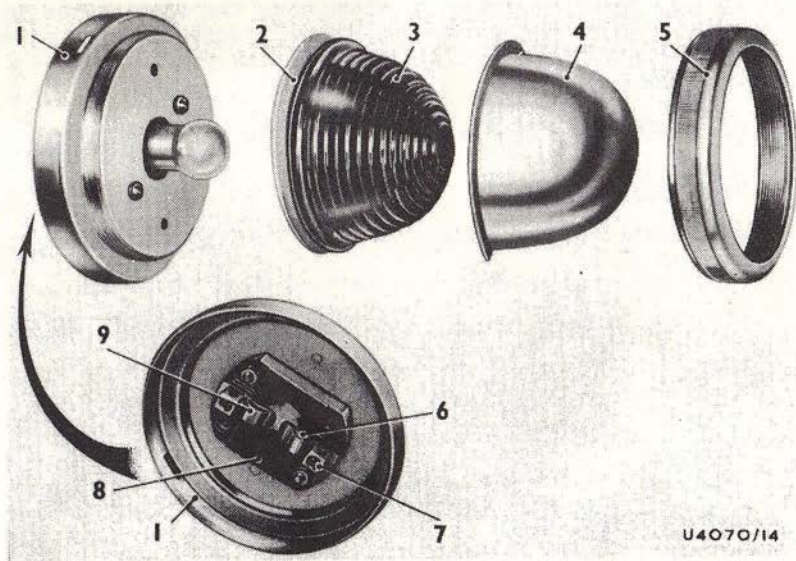


Fig 208 Blackout light

- | | | |
|----------------|------------------------|------------------|
| 1 Base | 5 Glass and shield re- | 7 Terminal |
| 2 Gasket | taining ring | 8 Terminal block |
| 3 Red glass | | 9 Contact spring |
| 4 Light shield | 6 Contact piece | |

443. An insulated terminal block (8), fixed to the underside of the base, is fitted with two terminals (7), two contact springs (9) and two contact pieces (6). The block is shaped so that the double contact lamp may be entered and turned for the lamp pins to rest on ledges and for the lamp contacts to engage the contact pieces.

Routine adjustments and servicing

To change a lamp

444. (1) Put the control switch to OFF.
- (2) Unscrew the knurled ring and withdraw the shield, glass and gasket.
- (3) Remove the lamp by pressing in and turning anti-clockwise.
- (4) Fit the new lamp and reassemble the light.
- (5) Test the light.

BODY LIGHT - BMAC Type No. 415

445. The body light (Fig 203(1)) has a metal rectangular body (Fig 209(3)) housing two bracket mounted S.B.C. lamp-holders. A moulded translucent plastic cover (1) is retained to the body by two screws (2). Cables enter the light through a rubber bush (4).

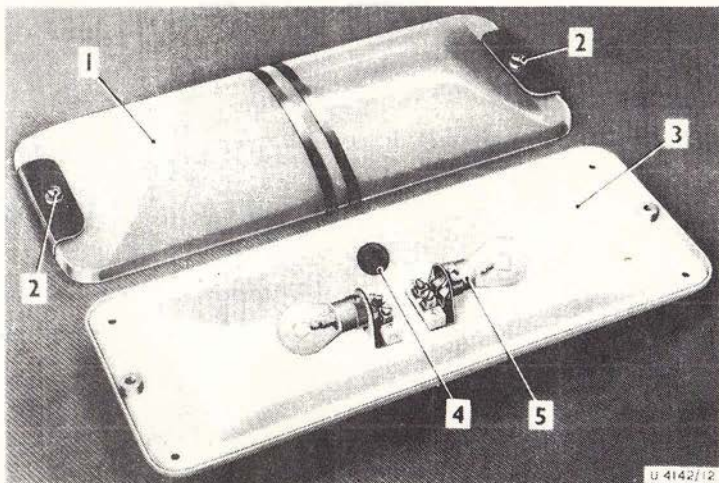


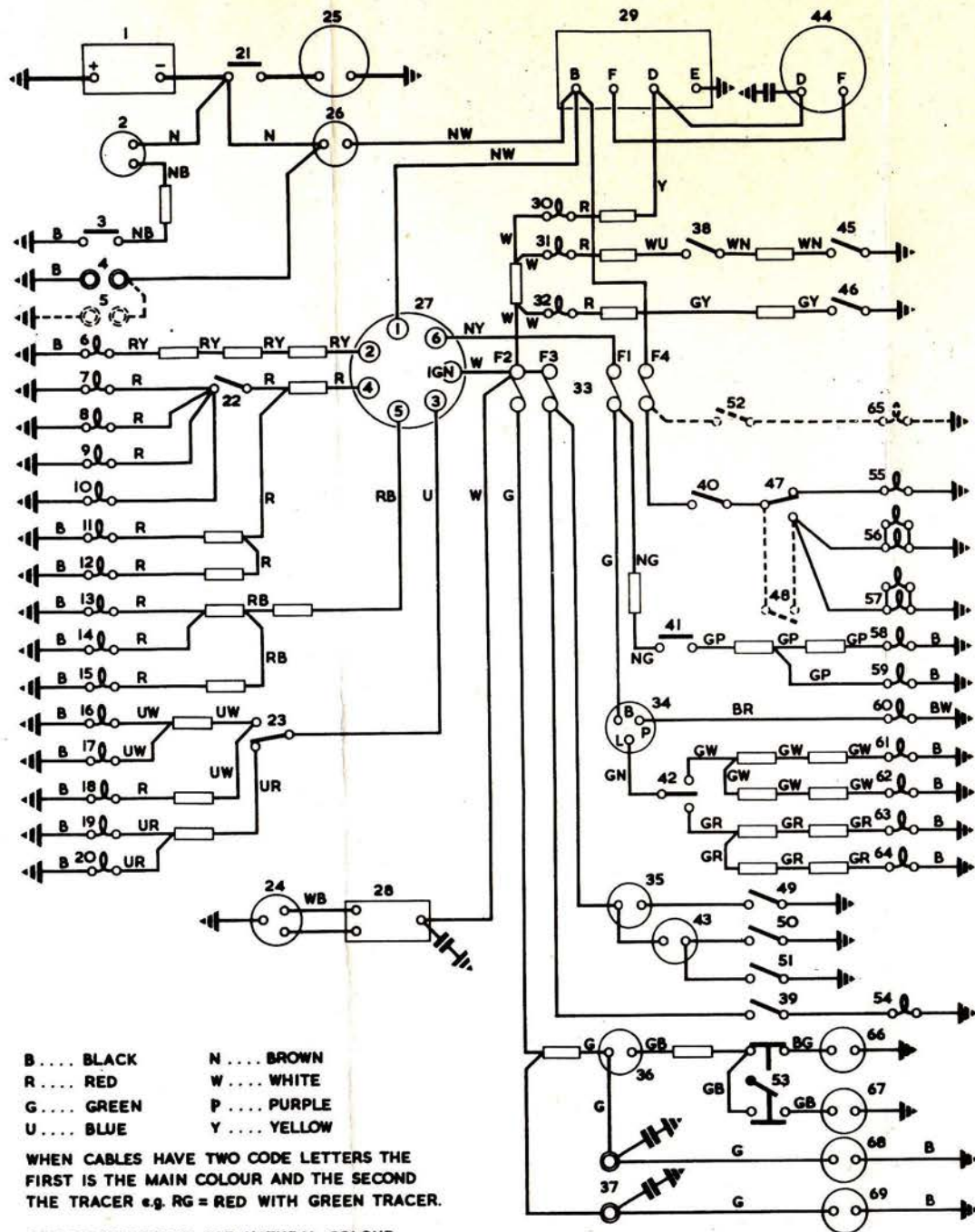
Fig 209 Body light

- | | | |
|---------------------|--------------------|---------------|
| 1 Translucent cover | 2 Retaining screws | 4 Rubber bush |
| | 3 Body | 5 Lamp |

Routine adjustments and servicing

To change a lamp

446. (1) Put the control switch to OFF.
- (2) Unscrew the two screws securing the translucent cover.
- (3) Remove the lamp.
- (4) Fit the new lamp and reassemble the light.



B BLACK N BROWN
 R RED W WHITE
 G GREEN P PURPLE
 U BLUE Y YELLOW

WHEN CABLES HAVE TWO CODE LETTERS THE FIRST IS THE MAIN COLOUR AND THE SECOND THE TRACER e.g. RG = RED WITH GREEN TRACER.

CABLES NOT CODED ARE NATURAL COLOUR.

----- RAF VEHICLES ONLY

- | | |
|---|--|
| 1 Battery 12 volts | 36 Fuel gauge |
| 2 Horn | 37 Plugs and sockets for wind-screen wipers |
| 3 Horn push | 38 Choke switch |
| 4 Inspection light socket (driver's) | 39 Ambulance light switch |
| 5 Inspection light socket (body) R.A.F. vehicles only | 40 Body lights switch (driver's) |
| 6 Convoy light | 41 Stoplight switch |
| 7 Panel light | 42 Turnlight switch |
| 8 Panel light | 43 Heater motor L.H. |
| 9 Oil temperature gauge light | 44 Generator |
| 10 Map reading light | 45 Choke thermostat |
| 11 Sidelight R.H. | 46 Oil pressure switch |
| 12 Sidelight L.H. | 47 Blackout light switch |
| 13 Taillight R.H. | 48 Blackout overriding switch (R.A.F. vehicles only) |
| 14 Number light | 49 Heater motor switch R.H. |
| 15 Taillight L.H. | 50 Heater motor switch L.H. |
| 16 Headlight, main, R.H. | 51 Heater motor switch (driver's) |
| 17 Headlight, main, L.H. | 52 Roof beacon light switch |
| 18 Main beam warning light | 53 Fuel tank changeover switch |
| 19 Headlight dip R.H. | 54 Ambulance light |
| 20 Headlight dip L.H. | 55 Blackout light |
| 21 Starter switch | 56 Body light |
| 22 Panel lights switch | 57 Body light |
| 23 Headlight dip switch | 58 Stoplight L.H. |
| 24 Ignition distributor | 59 Stoplight R.H. |
| 25 Starter | 60 Flasher warning light |
| 26 Ammeter | 61 Turnlight R.H. front |
| 27 Ignition and lighting switch | 62 Turnlight R.H. rear |
| 28 Ignition coil | 63 Turnlight L.H. front |
| 29 Generator control board | 64 Turnlight L.H. rear |
| 30 Ignition warning light | 65 Roof beacon light |
| 31 Choke warning light | 66 Fuel gauge tank unit L.H. |
| 32 Oil pressure warning light | 67 Fuel gauge tank unit R.H. |
| 33 Fuses | 68 Windscreen wiper |
| 34 Turnlight flasher unit | 69 Windscreen wiper |
| 35 Heater motor R.H. | |

Fig 210 Wiring diagram