CHAPTER I
C11-R210

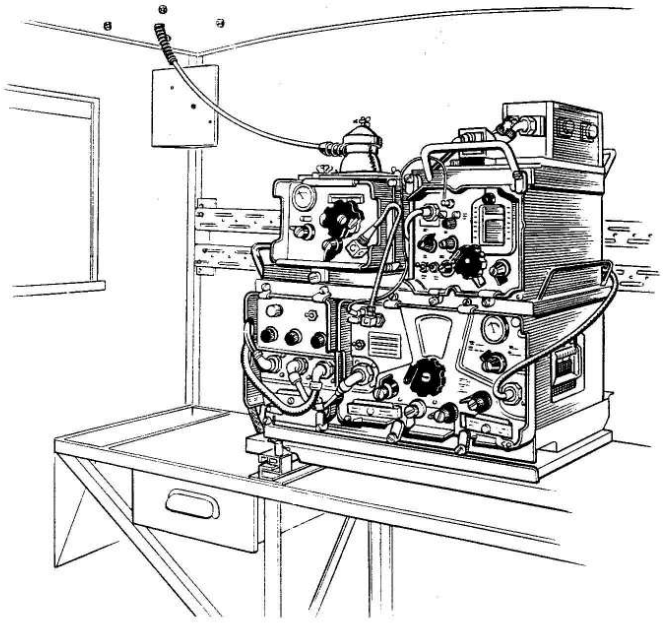

FIG. 1 TYPICAL INSTALLATION C11-R210

CONTENTS

Section 1 SET DATA

Type of set	Separate transmitter and receiver. C11 is an HF transmitter for voice or morse telegraphy. R210 is designed for use with C11 but it can be operated alone.
Frequency	2-16 Mc/s
Range	Rod aerial - up to 25 miles voice or 50 miles morse. Wire aerial - skywave.
Power supply	24V battery and separate PSU. Two 12V 75 Ah batteries in series give approximately 5½ hours on a send-receive ratio of 1 : 5.
Aerials	Normally a 12-ft. rod, on the vehicle or remotely within 150 ft. At the halt a 16-ft. rod, a vertical radiator, open wire or wire dipole can be used.

Section 2 C11 - R210 KITS

(1) T C11 set kit No. 1 (ZA 46319/1) For details see CES No. 42456

C11 (Z1/5820-99-911-0849)	
Connector 12 pt. No. 90, 7-in.type HB (ZA 46824)	Set to PSU (angle each end) Connector No. 35
Supply unit transformer rotary 24V (ZA 46320)	
User handbook for C11	W.O. Code No. 12052

(2) R210 set kit No. 1 (ZA 46729/1)

Reception set R210 (ZA 46729)	
User handbook for R210	W.O. Code No. 12051

NOTE - If the C11-R210 station is being made up by converting an old type "made to measure" installation, the items in paragraphs 1 and 2 above are required from the old kit.

(3) Installation kit electronic equipment C11-R210 (Z1/5820-99-949-2923)

For details see CES No. 42902

Description	Remarks	Fig.
Aerial base No. 31 (ZA 49827)		11
Aerial base and bracket assy. No. 3 (ZA 53000)	For remote aerial	2
Aerial element, 4-ft. (Z1/5820-99-919-1166) (ZA 44684) (two)	Antennae rod 'F' (top section)	
Aerial tuning unit No. 7 (ZA 46321)		2
Beads plastic (ZA 50359) (50)	For HF aerial connector	
Cable assy. co-axial, 2-ft. Z1/5995-99-949-1230) (ZA 54390)	C11 to ATU. Connector No. 18	5

Description	Remarks	Fig.
Cable assy. co-axial 50-ft. (Z1/5995-99-949-1016) (ZA 47041)	C11 to remote ATU	
Cable assy. 4-condr. 3-ft. (Z1/5995-99-949-3037)	LT box to PSU (angle each end) Connector No. 40	5
Cable assy. 12-condr. 3-ft. (Z1/5995-99-949-1478)	PSU to R210 (angle each end) Connector No. 36	5
Cable elec. P11 (Y3/WB 1042) (4 yds.)	HF aerial connector (Conn. 1)	5
Carrier fixed (ZB 15000) and free (ZB 15001)	For 'K' box	
Carrier set No. 32 Mk.2 (ZB 14992)		2
Clamp aerial base (Z1/5820-99-949-3038)	See part 2 page 11	
Clamp MS, 1 x 1 x 1¼ x 11/32 (ZB 14904)	10 used on carrier and tray	2
Clamp rubber, 3/16-in. grip (ZA 50363)	For aerial connector (eight)	
Connector co-axial, 27-in. (ZA 55289) (ZA 51333)	C11 to R210 (Conn. No.19)	5
Connector copper braid, 21-in. (ZA 47169)	ATU to table (Conn. No. 12)	5
Connector single No. 228, 12-in. (ZA 53546)	On remote aerial (part 4 page 27)	
Connector 4/2-pt. No. 3, 6-ft. type C (ZA 51321)	LT box to battery (4-way angle socket - two lugs) (Conn.No. 69)	5
		5
Coupler plug and chain assy. (two) (ZA 14946)	Join cables co-axial 50-ft.	
Frame metal, 13.7/16 x 7.13/16 x 1.7/16 (ZA 51335)	Mounts ATU on tray metal.	2
Fuse link cartridge, 500 mA 440V (X2/5920-99-059-0108)	4 spare	
Fuse link cartridge, 2A 440V (X2/5920-99-059-0110)	4 spare	
Fuse link cartridge, 3A 440V (X2/5920-99-059-0111)	4 spare	
Fuse link cartridge, 5A 440V (X2/5920-99-059-0112)	4 spare	
Interconnecting box 4-way No. 1 (Z1/5820-99-949-1173) (ZA 51311)	LT box with 4-pt. input (See note on page 7)	4
Key telegraph (Z1/5820-99-949-1174) (ZA 51445)	'K' box	
Lamp fil. 8V 1.2W MES (X5/6240-99-995-1148)	3 spare	
Lamp fil. 12V 3.6W MES (X5/6240-99-995-1246)	3 spare	
Lead counterpoise 25-ft. (ZA 51453)	See part 4 page 26	
Lug special No. 1 (ZA 4551)	See part 2 page 10	
Nut gland and washer set (ZA 50365)	See part 2 page 10	
Plate plastic, ½ x 5 x ⅛-in. thick (ZA 50358)	Under aerial base No. 31	
Rod earth MS, 36-in. (Y1/5975-99-943-9502)	See part 4 page 26	
Tray assy. MS, 13 x 10⅝ x 1.15/16 (ZB 14941)	Mounts boxes on R210	4
Tray metal, 22¾ x 13⅛ x 5⅛ (ZB 14927)	Mounts ATU, etc., on C11	2
Tool adjusting (ZA 50362)	Screws lead into aerial base	
Washer assy. 2-in. dia (Z1/5820-99-949-3044)	6 secure carrier to table	2
Wrench keys, 1/16-in. and 5/64-in.	For control knob set screws	

Stow fuses, lamps and wrench keys in the case maintenance kit

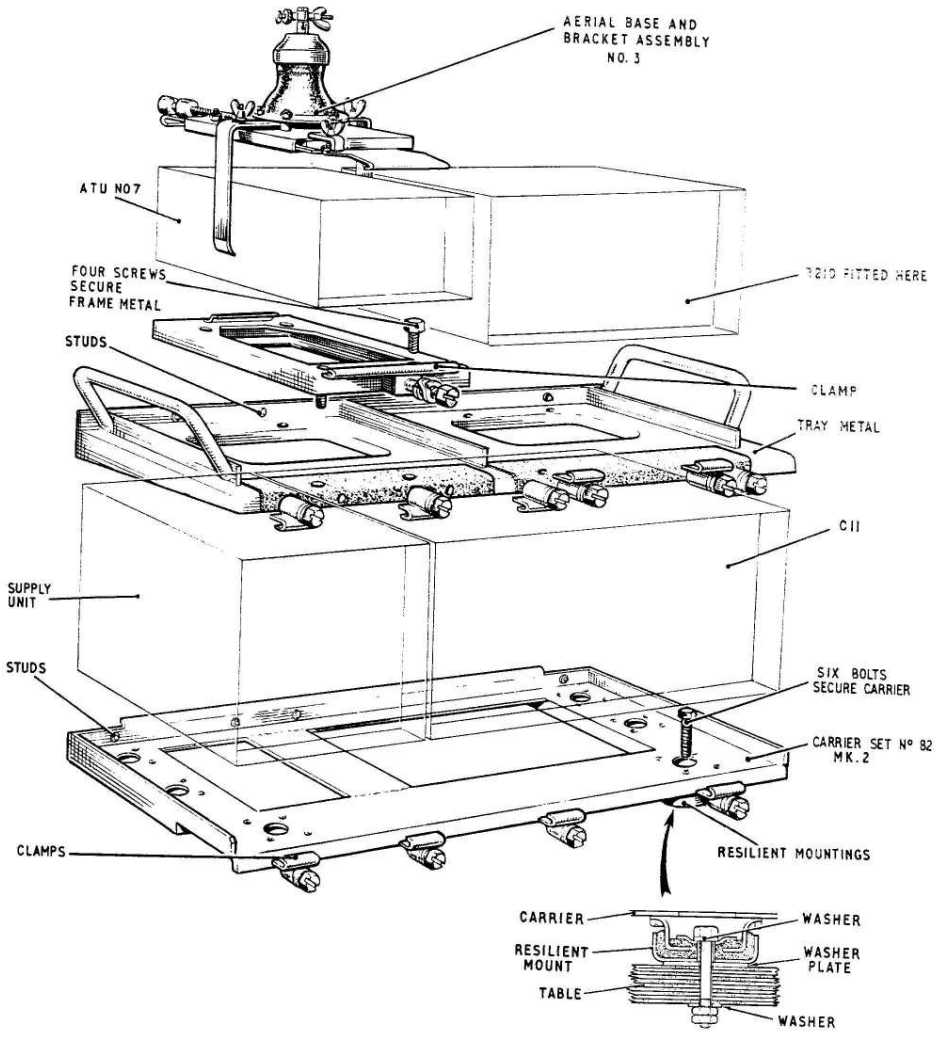

FIG. 2 FITTING C11

(6) Clamps MS, 1 x 1 x 1¼ x 11/32-in. grip

Fit four clamps to the front of the carrier as shown in fig. 2. Hook them over the lower edges of C11 and PSU and tighten the screws to retain the assembly. Four more similar clamps secure the tray (paragraph 7) to the C11 and two secure the R210 to the tray.

(7) Tray metal, 22⅜ x 13⅛ x 5⅛-in. (See section 4 below)

Fit the tray to the top of C11 and PSU, engaging studs and sockets. Secure it by means of four clamps hooked over the flange on the front panel of C11 and PSU and screwed down. Make sure that the tray is firmly attached, but do not over-tighten the clamp screws. The top of this tray is divided. The ATU is to be fitted in the side nearer the aerial, normally the LH side, to reduce the length of the aerial connector. The R210 is to be fitted in the other side.

Section 4 MODIFYING THE TRAY ON C11

If two C11 or C11/C13 are fitted side by side on the table the handles, being set at an angle, may come into contact with handles on the adjacent tray. Trays metal, 22⅜ x 13⅛ x 5⅛-ins. can be modified by workshops in accordance with EMER Comm. Inst. S.027 Mod.Instr. No. 2, under which the handles are moved to an upright position to provide more clearance between two assemblies on the table.

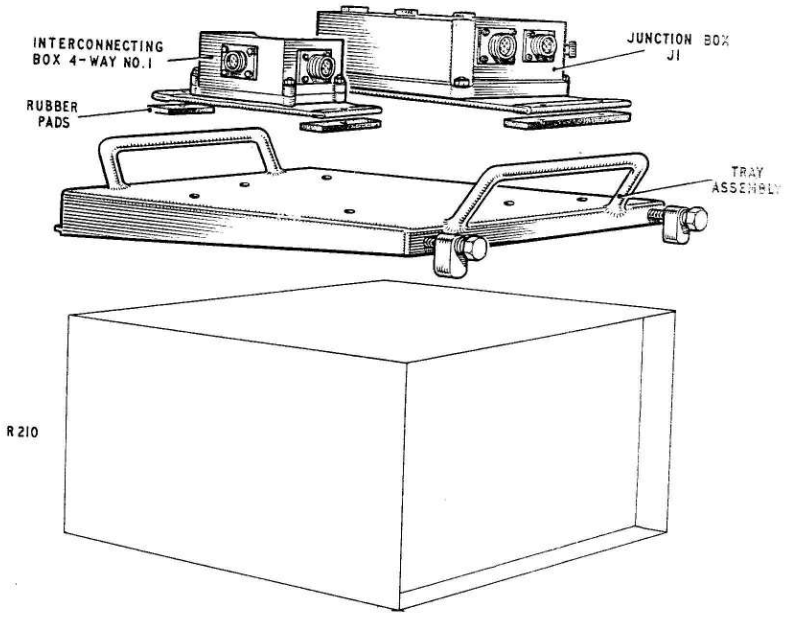

FIG. 4 FITTING THE J1, ETC., ON THE TOP OF THE R210

Section 5 INSTALLING ATU No. 7

(1) Frame metal. 13.7/16 x 7.13/16 x 1.7/16

This frame carries the ATU. Mount it in the aerial [illegible] of the tray in the [illegible] as shown in fig. 2, with the screw clamp towards the front of the tray. Engage the sockets in the rear of the frame with two studs on the tray. Secure it by means of four screws ¼-in. x ½-in. long, inserted into tapped holes in the tray.

(2) ATU No. 7

Mount the ATU on the frame with the rear panel flange engaging in the [illegible] flap on the frame. Secure it by means of the clamp, which hooks over the [illegible] flange.

(3) Aerial base and bracket assembly No. 3

Mount this on the ATU by hooking it to the front panel flange and securing it with a clamp hooked over the rear panel flange. Tighten the side supports in the inward position. Connect the earth braid to the ATU earth terminal. Fit the aerial lead, which forms part of the assembly, between the top of the aerial base and the ATU aerial terminal. This aerial lead is not used in the vehicle.

Section 6 INSTALLING R210 ASSEMBLY

Fit the R210 into the vacant part of the tray metal on the C11, engaging two studs with sockets in the rear of the set. Fit two screw clamps as in paragraph 3 on page 5 to the front of the tray metal as shown in fig. 2. Hook the clamps over the flanges along the lower edge of the R210 control panel and tighten the two screws to retain the assembly.

Section 7 INSTALLING J1 AND LT BOX

(1) J1

Before mounting the tray assembly on the R210, bolt the J1 to it by means of four screws with nuts and washers. Place two rubber pads between the metal ends of the webbing base on the J1 and the tray. See fig. 4.

(2) Interconnecting box 4-way No. 1

Bolt this LT box to the tray by means of two screws with nuts and washers, as shown in fig. 4, with two rubber pads between box and tray and the cut-away side of the box towards the J1.

NOTE - Three different LT boxes are used in the installations described in this handbook. See Part 1 page 9. The box for the C11 has three 4-way connections and one 2-way.

(3) Tray assembly MS. 13 x 10⅝ x 1.15/16-in.

After bolting the above two boxes to this tray, mount the tray on the top of the R210. Engage two studs with sockets in the rear of the set and secure two clamps over two corresponding screw heads in the upper corners of the set front panel. Ensure that the tray is firmly attached.

(4) 'E' box in two-set installations

If two sets are installed, the two J1s can be connected to an 'E' box and controlled by one operator. See part 4 page 4. Bolt 'E' and MRRB boxes to the slotted angle framework.

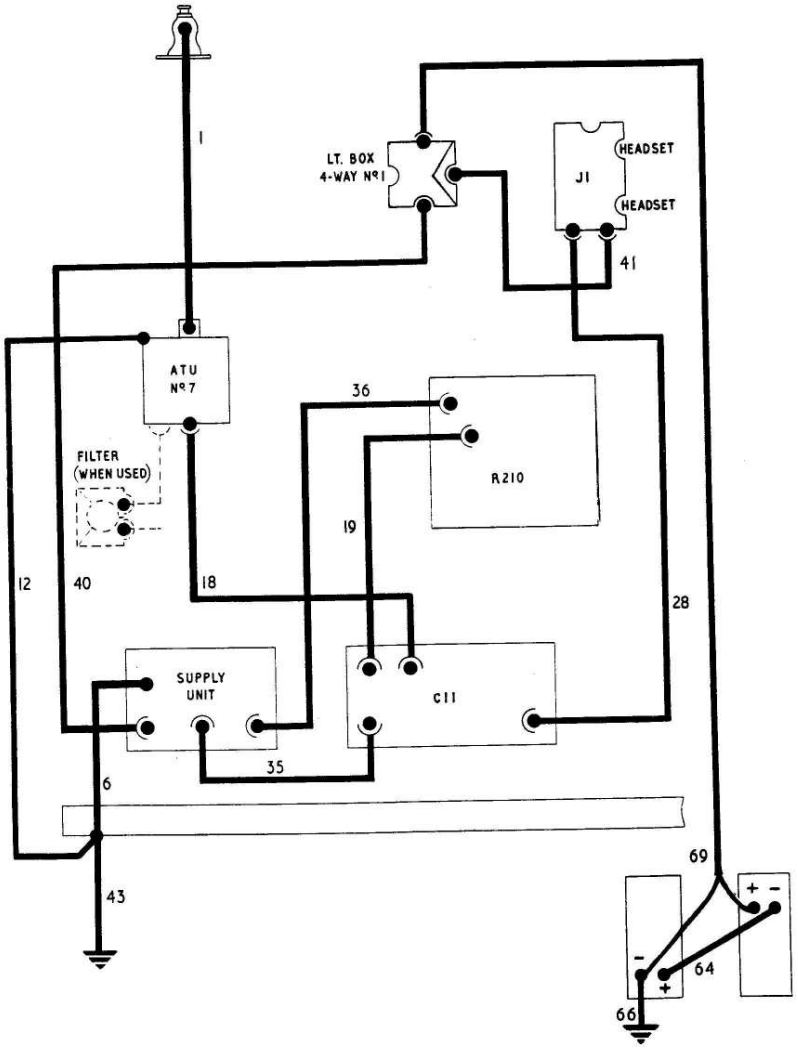

FIG. 5 CONNECTOR DIAGRAM C11-R210

Section 8 CONNECTORS

As shown in the typical installation in fig. 1 and the ground station in fig. 6.

No. See Fig.5	Connector	Position	Kit See note below
1	HF aerial connector (Made up to suit the truck). See the relevant vehicle chapter).	External aerial base to ATU	I
6	Copper braid, 10¾-in. (Z1/5995-99-949-1055) (ZA 46904)	PSU to bolt in LH end of table frame	M
12	Copper braid, 21-in. (ZA47169)	ATU to bolt in table frame	I
18	Coaxial, 2-ft. (Z1/5995-99-949-1230)	ATU to C11	I
19	Coaxial, 27-in. (ZA51333)	C11 to R210	I
28	12-condr., 3-ft.6-in. (Z1/5995-99-949-1477)	C11 to J1	M
32	12-condr., 2-ft.6-in. (Z1/5995-99-949-2969)	J1 to 'E' box when fitted	E
35	12-pt., 7-in. (ZA46824)	C11 to PSU	I
36	12-condr., 3-ft. (Z1/5995-99-949-1478)	R210 to PSU	I
40	4-condr., 3-ft. (Z1/5995-99-949-3037)	PSU to LT box	I
41	Twin, 3-ft. (ZA54389)	LT box to J1	M
43	Copper braid (part of table)	Table to vehicle body	V
64	Single, 2-ft.6-in. (Z1/5995-99-949-1068) (ZA 0781)	Battery series connector (Not used on Rover 8 and 9)	M
66	Single, 3-ft. (Z1/5995-99-949-1000) (ZA47089)	Battery negative to vehicle chassis. (Not used on Rover 8 and 9).	M
68	4/2-pt., 5-ft. (ZA 51401)	LT box to batten terminal in Rover 8 and 9 and in 1-ton Armoured	M
69	4/2-pt., 6-ft. (ZA51321) (alternative to Connector No.68)	Battery to LT box on set in ¼-ton Austin and trucks without power take-off	I

NOTE - Column 4 shows the kits in which connectors are supplied:
E - 'E' box kit, I - Installation kit (see page 2), M - multi-purpose kit,
V - vehicle fitting kit.

Section 9 FILTER UNIT RF No. 15

This filter unit reduces interference between C42 and R210 when these two sets are installed in the same vehicle. On installations in which it is required, mount it on the slotted steel angle framework and connect it between C11 and ATU No. 7 as in fig. 5. Filter unit RF No. 15 does not require any adjustment in use.

The filter unit is contained in a case similar to the LT box. It is supplied in a separate kit, together with two coaxial cables.