

CHAPTER 7 C42 AND C45

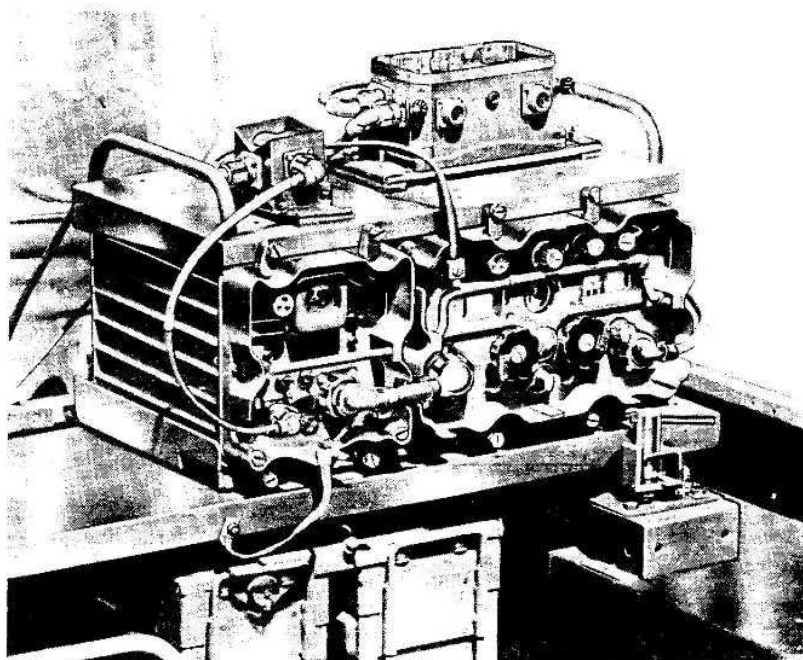


FIG. 30 TYPICAL INSTALLATION C42

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Section 1 SET DATA

Type of set	VHF FM transmitter-receiver for voice operation
Frequency	C42 : 36-60 Mc/s. C45 : 23-38 Mc/s
Range	On HP, up to ten miles can be expected between moving vehicles. On LP, approximately five miles.
Power supply	Separate PSU for 12V and 24V. Two 12V 75 Ah batteries in series give approximately 12½ hours at send-receive ratio of 1 : 5.
Aerial	8-ft. rod. Separate ATU for each set, No. 6 for C42, No. 9 for C45. ATU can be used remotely within 50 ft.

IMPORTANT

DO NOT SWITCH THE SET ON WHEN
IT IS NOT CONNECTED
TO THE AERIAL

Section 2 C42 KITS

- (1) TR C42 set kit No. 1, 24V (ZA43207/1)

C42 (Z1/5820-99-943-9362) (ZA43207)	
Power supply vibratory No. 12 Mk. 2, 24V input (Z1/5820-99-949-1086) (ZA50544)	
Cable assy. 25-condr., 5⅜-in. (Z1/5820-99-949-0788) (ZA43206)	Set to PSU (angle each end). Connector No. 39
User handbook for C42	W.O. Code No. 11197

- (2) TR C42 set kit No. 1, 12V (ZA43207/3) For details see CES No. 42824

C42 (Z1/5820-99-943-9362)	
Supply unit vibratory No. 12, 12V input (ZA46961)	
Connector 25-pt. No. 1, 5⅜-in. type GB (ZA43206)	Set to PSU (angle each end). Connector No. 39
User handbook for C42	W.O. Code No. 11197

- (3)
- TR C42 set kit No. 2 (ZA51357)
- For details see CES No. 42993

This kit does not include a supply unit.

C42 (Z1/5820-99-943-9362)	Set to PSU (angle each end). Connector No.39 W.O. Code No. 11197
Cable assy. 25-condr. 5 $\frac{3}{8}$ -in. (Z1/5820-99-949-0788) (ZA43206)	
User handbook for C42	

- (4)
- Supply units issued separately for set kit No. 2

Power supply vibratory No. 12 Mk. 2 24V input (Z1/5820-99-949-1086) OR Supply unit vibratory No. 12, 12V input (ZA46961)
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- (5)
- Installation kit electronic equipment SR C42 (Z1/5820-99-949-2919)

For details see CES No. 42896

Description	Remarks	Fig.
Aerial base and tuning unit No. 6 assy. (Z1/5985-99-949-1015)	Dismountable ATU assembly	37
Base aerial support (Z1/5820-99-949-0981)	Formerly aerial base No. 28. See relevant vehicle chapter.	
Blocks clamping MS (Z1/5820-99-949-0959)	8 secure set to carrier and tray	32
Fuse links cartridge ceramic 2A 440V (X2/5920-99-059-0110)	Six spares	
Interconnecting box 4-way No. 4 (Z1/5820-99-949-0960) (ZA46982)	LT box	32
Lamps filament 12V 2.2W MES (X5/6240-99-995-1219)	Three spares	
Lead elec. 16-in. (Z1/5995-99-949-1083) (ZA46701)	ATU to external aerial base (eyelet each end). Connector No.3. Not used with ATU on front wing.	35
Nut wing 2BA with spring washer) For ATU terminals.) Not used with ATU on front wing	
Nut wing 4BA with spring washer		
Carrier set No. 82 Mk. 2 (ZB14992)		32
Support aerial MS (Z1/5820-99-949-1022) (ZA29831)	Ground spike for dismounted ATU. See part 4 page 23	
Tray electronic equipment, 22 $\frac{3}{4}$ x 14 x 4 $\frac{1}{2}$ (Z2/5820-99-949-1008) (ZB14936)		
Washer assy., 2-in. dia. (Z1/5820-99-949-3044)	Six to secure carrier to table	
Wrench keys, 1/16-in. and 5/64-in.	For control knob set screws	

Section 3 C45 KITS

- (1)
- TR C45 set kit No. 1 (ZA44047/1)
- For details see CES No. 42823

C45 (Z1/5820-99-943-9363) (ZA44047)	Set to PSU (angle each end). Connector No. 39. W.O. Code No. 11792
Cable assy. 25-condr., 5 $\frac{3}{8}$ -in. (Z1/5820-99-949-0788) (ZA43206)	
User handbook for C45	

- (2)
- Supply units issued separately for C45

Power supply vibratory No. 12 Mk. 2, 24V input. (Z1/5820-99-949-1086) (ZA50544).
OR
Supply unit vibratory No. 12, 12V input. (ZA46961)

- (3)
- Installation kit electronic equipment SR C45 (Z1/5820-99-949-2920)

For details see CES No. 42897

Description	Remarks	Fig.
Aerial base and tuning unit No. 9 assy. (ZA47825)	Dismountable ATU assembly	37
Base aerial support (ZA/5820-99-949-0981)	Formerly Aerial base No. 28	
Blocks clamping MS (Z2/5820-99-949-0959)	8 secure set to carrier and tray	32
Interconnecting box 4-way No. 4 (Z1/5820-99-949-0960) (ZA46982)	LT box	32
Fuse link cartridge, 2A 440V (X2/5920-99-059-0110)	Six spare	
Lamps fil. 12V 2.2W MES (X5/6240-99-995-1219)	Spare	
Lead elec. 16-in. (Z1/5995-99-949-1083) (ZA46701)	ATU to external aerial base (eyelet each end). (Note that the lead between ATU and external aerial base must not be longer than 16-in.)	35
Support aerial MS (Z1/5820-99-949-1022) (ZA29831)	Ground spike for dismantled ATU. See part 4 page 23.	
Carrier set No. 82 Mk. 2 (ZB14992)		32
Tray electronic equipment, 22 $\frac{1}{2}$ x 14 x 14 $\frac{1}{2}$ (Z2/5820-99-949-1008) (ZA14936)	Mounts boxes on top of set	32
Washer assy. 2-in. dia. (Z1/5820-99-949-3044)	Secures carrier to table	32
Nut wing 2BA with spring washer	} For ATU terminals. } Not used with ATU on front wing.	
Nut wing 4BA with spring washer		
Wrench key, 1/16-in. and 5/64-in.	For control knob set screws	

Stow fuses, lamps and wrench keys in the case
maintenance kit supplied in the multi-purpose kit.

VHF AERIALSRemember these rules

- 1 - Connector between ATU and aerial base must not exceed 16-in.
- 2 - Rod aerial must not exceed 8-ft.
- 3 - Rod aerial must not be tied down to the truck.
- 4 - Do not erect aerials near overhead wires.

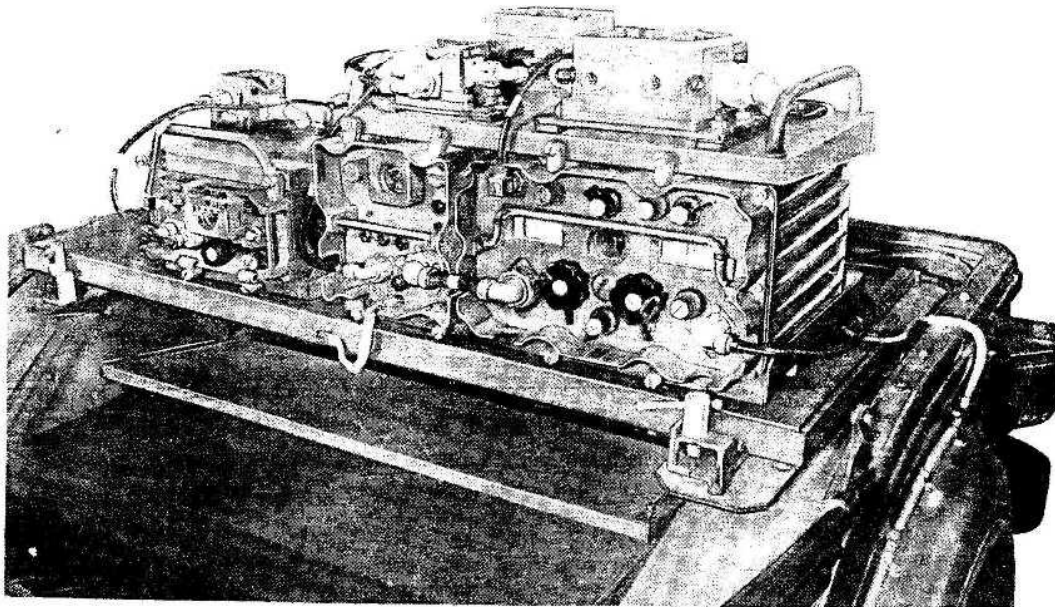


FIG. 31 C42 WITH B47 AND J2 HARNESS

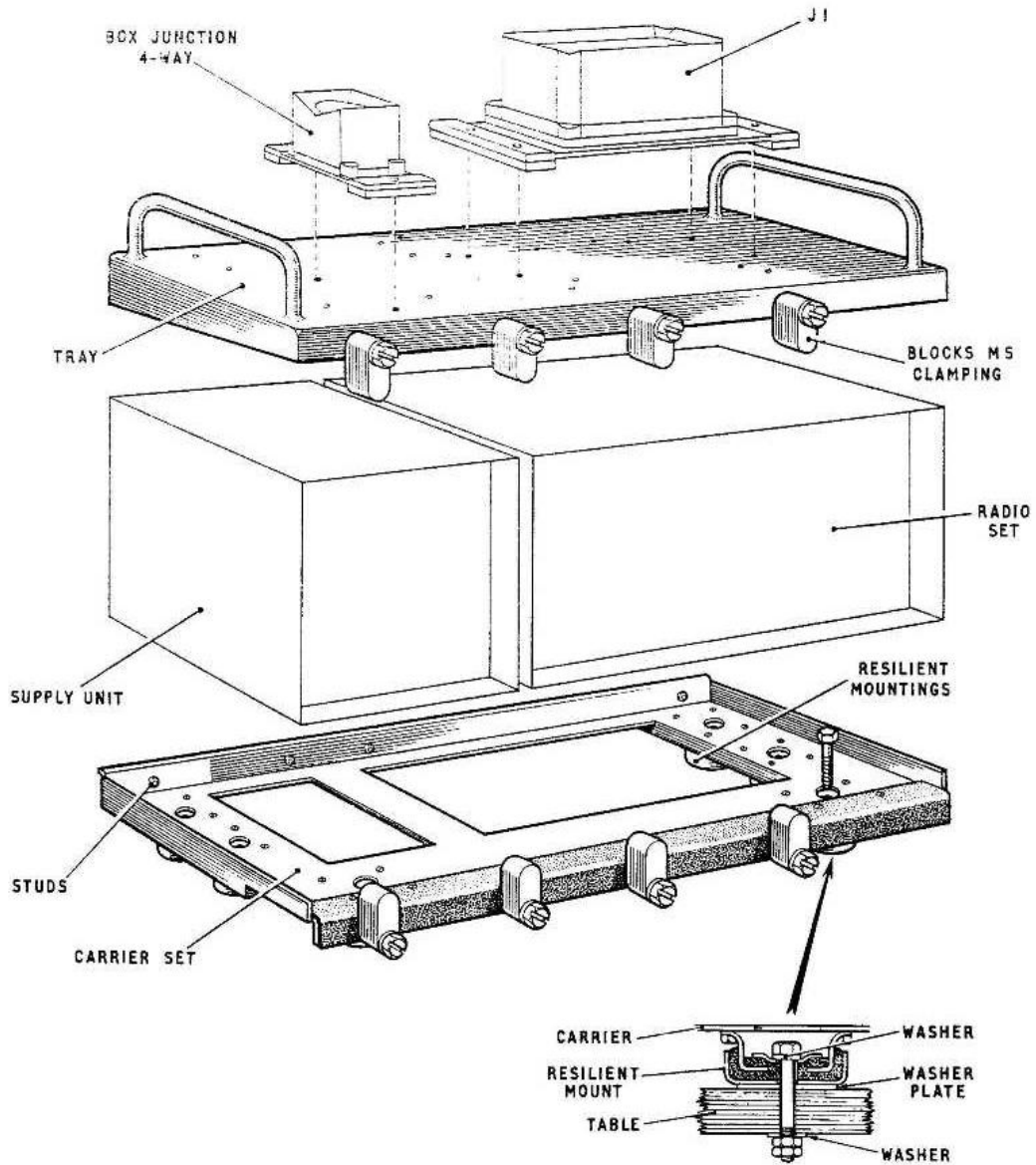


FIG. 32 FITTING C42 OR C45

Section 5 INSTALLING J1 AND LT BOX(1) When to fit a J1

If it is available, always use the J1 in preference to a J2 harness. In all new installations a J1 is provided in the multi-purpose kit. In stations made up by converting an old type one-set "made to measure" kit, the J1 can be obtained from the old installation.

(2) Tray electronic equipment, 22 $\frac{3}{4}$ x 14 x 4 $\frac{1}{2}$ -in.

Before this tray is mounted on the set, bolt the J1 and the LT box to it. Fig. 33 shows the position of the units on the tray and the fixing holes to be used. Screws, nuts, etc., are provided with the tray and those not used should be removed and retained in stores.

(3) J1

Bolt the J1 to the tray, placing two rubber packing pieces under the metal ends of the webbing base strap. Headset sockets must be towards the front of the tray. See that the box is switched off.

(4) LT box 4-way No. 4

This is the LT box with three 2-pt. connections and one 4-pt. Bolt it to the tray as shown. Fit two rubber pads under the base plate and secure by means of two screws. Note that the cut-away side of the box must be away from the J1.

(5) Fitting the tray

Fit the tray to the top of the set as instructed in paragraph 9 on page 57. Fig. 37 on page 64 shows the radio set with J1 and LT box installed.

(6) 'E' box in a two-set installation

If two sets are installed in one vehicle, the two J1s can be connected to an 'E' box and controlled by one operator. See part 4 page 4. When possible, bolt the 'E' box and the MRRB box to the slotted angle framework. In vehicles not equipped with the framework use an improvised mounting, possibly on the tray with the J1 and the LT box.

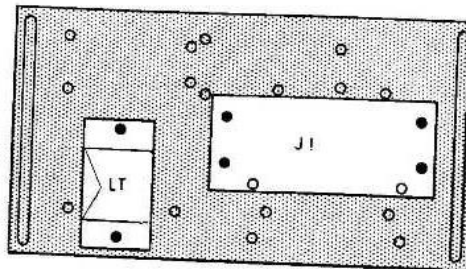


FIG. 33 PLAN OF TOP TRAY WITH J1 AND LT BOX FITTED

Section 6 J2 HARNESS(1) When to fit a J2 harness

If the station is being made up by converting an old type "made to measure" kit which included a J2 harness, a J1 for the C42 or C45 may not be available. Certain such kits contained a J1 but it was provided to give remote rebroadcasting when one of the sets was dismantled. Fit the J2 harness boxes to the tray as follows, referring to fig. 34.

(2) Fitting the J2

Position the J2 with the 'A' SET and 'B' SET plugs towards the edge of the tray and secure it with four screws, nuts and washers, placing two rubber packing pieces between the webbing base strap of the junction box and the tray.

(3) Selector switch on the J2

When a 'B' box is fitted, turn the RH screwdriver-operated switch on the J2 to REB. If the 'B' box is not included in the harness, turn this switch to NORMAL.

(4) 'R' box

Bolt the 'R' box to the tray with the headset sockets away from the J2.

(5) 'B' box

When it is supplied, bolt the 'B' box to the tray with the cut-away side towards the 'R' box.

(6) LT box 4-way No. 1

This is the LT box with four 2-pt. connections. Bolt it to the tray with the cut-away side away from the J2.

(7) Fitting the tray

Fit the tray as instructed in paragraph 9 on page 57. Fig. 31 on page 55 shows the radio set with the J2 harness mounted on the tray.

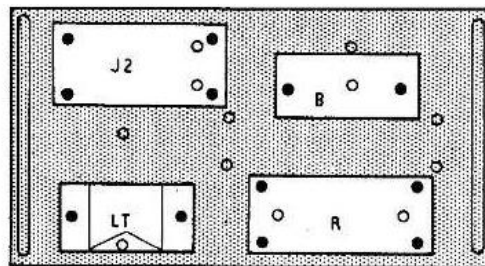


FIG. 34 PLAN OF TOP TRAY WITH J2 HARNESS

Section 7 INSTALLING THE ATU

Fit the VHF ATU as instructed in the relevant vehicle chapter in part 2. Use ATU No. 6 for C42 and ATU No. 9 for C45. Fig. 26 shows a VHF ATU.

Section 8 REJECTOR UNIT NO. 3

This rejector unit and its associated items are made up into a small kit for issue when required. See page 43. Instructions for fitting the rejector unit in the Truck Armoured FFR 1-ton are given in part 2 chapter 5. In other vehicles, where no special provision is made for mounting the unit, it should be bolted to the slotted angle framework near the set. Rejector unit No. 3 should not be connected to the aerial circuit until the interference becomes intolerable. Then connect it between set and ATU, for which an additional coaxial connector is supplied with it. Adjust the tuning as instructed in the user handbook supplied with the unit.

Section 9 CONNECTORS FOR SET AND J1 HARNESS

As shown in the typical installation in fig. 30, with the ATU mounted on the front wing.

No. See Fig.35	Connector	Position	See note on page 63
2	Lead aerial (part of ATU assembly)	ATU to aerial base on assy.	I
4	Copper braid (part of ATU assembly)	Top to bottom of aerial base	I
5	Copper braid (part of ATU assembly)	ATU earth terminal to case of assembly	I
23, 24	Coaxial, 14-ft. or 20-ft.	Set to ATU on the front wing as in fig. 26. See note below.	V
28	12-condr., 3-ft.6-in. (Z1/5995-99-949-1477)	Set to J1	M
32	12-condr., 2-ft.6-in. (Z1/5995-99-949-2969)	J1 to 'E' box when fitted	E
39	25-condr., 5 $\frac{3}{8}$ -in. (Z1/5820-99-949-0788)	Set to PSU	S
41	Twin, 3-ft. (ZA54389)	PSU to LT box	M
41	Twin, 3-ft. (ZA54389)	LT box to J1	M
42	Copper braid, 8 $\frac{3}{4}$ -in. (Z1/5995-99-949-1075)	PSU to centre earth terminal on table	M
43	Copper braid (part of table)	Table to vehicle body	V
64	Single, 2-ft.6-in. (Z1/5995-99-949-1068)	Battery series connector (not used on Rover 8 & 9)	M
66	Single, 3-ft. (Z1/5995-99-949-1000)	Battery negative terminal to earth. (Not used on Rover 8 and 9)	M
70	Twin, 6-ft.6-in. (Z1/5995-99-949-1001)	Battery to LT box on set	M
74	4-pt. (part of $\frac{1}{4}$ -ton Austin vehicle fitting kit)	LT box to power take-off ($\frac{1}{4}$ -ton Austin only)	V

NOTE - Fig. 35 shows the layout with the ATU on the front wing. If the ATU is mounted inside the vehicle and connected to an external aerial base, use connectors 3 to 16 or 17 as on page 63.

Section 10 CONNECTORS FOR SET AND J2 HARNESS

As shown in the typical installation in fig. 31.

See Fig. 31	Connector	Position	See note below
2	Lead aerial (part of ATU assembly)	ATU to aerial base (not used when ATU is connected to external aerial base)	I
3	Lead aerial, 16-in. (Z1/5995-99-949-1083) Alternative to connector No. 2	ATU to external aerial base (not used with ATU on wing).	I
4	Copper braid (part of ATU assembly)	Top to bottom of aerial base	I
6	Copper braid 10 $\frac{1}{2}$ -in. (Z1/5995-99-949-1055) (on vehicle)	ATU earth to tilt frame (only on 1-ton FFR truck)	V
7	Copper braid 5-in. (ZAA6975) (on vehicle)	Tilt frame to aerial mounting (only on 1-ton FFR truck)	V
8	Copper braid (part of ATU bracket) (two)	ATU bracket to tilt frame (only on 1-ton FFR truck)	V
9	Copper braid (part of ATU bracket)	ATU earth terminal to vehicle (1-ton Armoured only)	V
16, 17	Coaxial, 3-ft. or 9-ft.	Set to ATU inside the truck	M
25	12-condr., 3-ft. 6-in. (Z1/5995-99-949-1477)	J2 to 'A' set	M
28	12-condr., 3-ft. 6-in. (Z1/5995-99-949-1477)	J2 to 'B' set (in multi-purpose kit for 'B' set)	M
30	25-condr., 7 $\frac{1}{2}$ -in. (Z1/5995-99-949-0963)	J2 to 'R' box	J2
31	25-condr., 14-in. (Z1/5995-99-949-0964)	'R' box to 'B' box	J2
32	12-condr., 2-ft. 6-in. (Z1/5995-99-949-2969)	J2 to 'C' box	J2
34	12-pt. 11-ft. 6-in. (ZAA7098)	J2 to 'C' box in cab	J2
39	25-condr. 5 $\frac{3}{8}$ -in. (Z1/5820-99-949-0788)	Set to PSU	S
41	Twin, 3-ft. (ZA54389)	PSU to LT box	M
41	Twin, 3-ft. (ZA54389)	LT box 4-way No. 1 to LT box 4-way No. 4 on 'B' set	J2
42	Copper braid, 8 $\frac{1}{4}$ -in. (Z1/5995-99-949-1075) (ZAA6905)	PSU to centre earth terminal on table	M
43	Copper braid (part of table)	Table to vehicle body	V
45	Twin, 3-ft. (ZA54389)	J2 to LT box 4-way No. 1	J2
64	Single, 2-ft. 6-in. (Z1/5995-99-949-1068)	Battery series connector (Not used on Rover 8 & 9)	M
66	Single, 3-ft. (Z1/5995-99-949-1000) (ZAA7089)	Battery negative to earth (Not used on Rover 8 & 9)	M
70	Twin, 6-ft. 6-in. (Z1/5995-99-949-1001) (ZAA7108)	Battery to LT box on set	M
71	Twin, 2-ft. 6-in. (ZAA9067) (Alternative to Connector No. 70)	LT box to power supply	J2

NOTE - Column 4 shows the kits in which connectors are supplied.

E - E box kit, I - installation kit, J2 - J2 harness kit, S - set kit, M - multi-purpose kit, V - vehicle fitting kit.

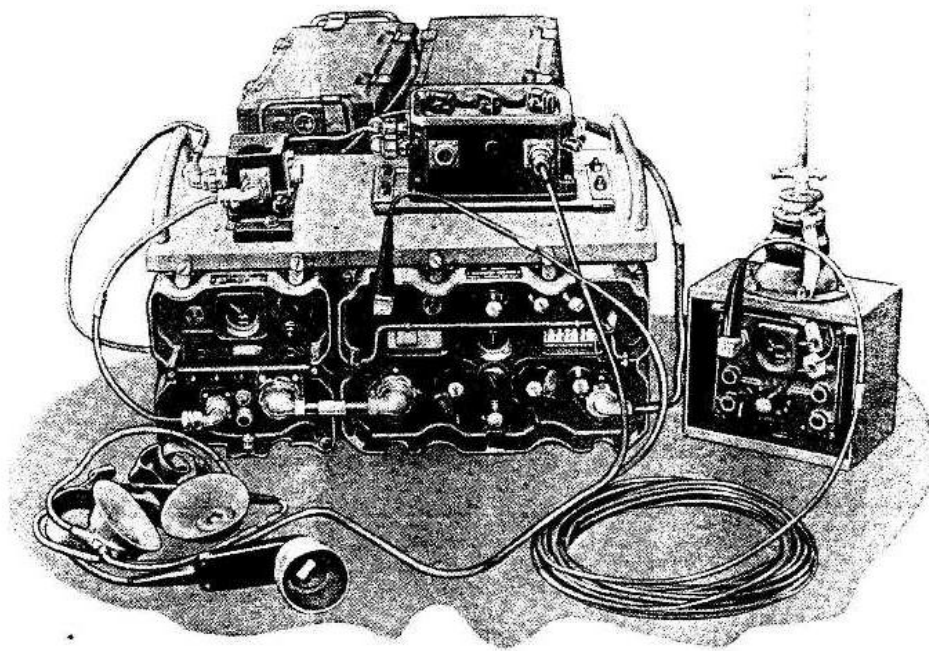


FIG. 37 TYPICAL GROUND STATION C42