

Volume 2 AMENDMENT No. 1 Ver 3.0

Date of issue: December 2021.

After the publication of 'Wireless for the Warrior' Volume 2 'Wireless Sets of WW2', a small number of minor (typing) errors and incorrect data was spotted. Corrections, additional photos and newly found items are published in 'Volume 2 Amendments'. Double side printed on A4 paper, cut away circa 7 mm from the bottom and side of the sheet. The prepared sheets will fit snugly between the inside cover and dust cover flap. It is further suggested to amend the text corrections in the book with e.g. a (red) pencil or a fine-liner.

Colour photographs of Aerial Coupling Unit No. 4 and Power Supply Transistorised No. 36 courtesy Keith Watt.

WIRELESS SET No. 19

- Page W.S.19 - 3: Data Summary: Size (Inches) and Weight: **Change** width (2½) in Wireless Set No. 19 to 12½.
- Page W.S.19 - 51: (Figure 19-73) Circuit and appearance of Rejector Unit No. 1: The top side of the variable capacitor in the circuit diagram should be connected to the centre contact of the switch and not to the coil as drawn.

WIRELESS SET No. 19 Control System

- **New page** W.S.19 Control - 27: Improvised remote control.
- **New page** W.S.19 Control - 28: External tank telephone.

WIRELESS SET No. 22

- Page W.S.22 - 3: Data Summary: Size (Inches) and Weight: **Change** width (3½) in Power Supply Unit to 12½.
- **New page** W.S.22 - 52: Operating on dry batteries and Aerial coupling methods.

WIRELESS SET No. 48

- **New page** W.S.48 - 13: Wireless Set No. 48 Morse key assembly.
- **New page** W.S.48 - 14/15: Wireless Set No. 48 Vibrator Power Unit (NZ).
- **New page** W.S.48 - 16: Hand generator for Wireless Set No. 48.

WIRELESS SET No. 62

- **New page** W.S.62 - 38: Wireless Set No. 62 Power Supply Transistorised No. 36.

Appendix 3 'Accessories'

- Page Appendix 3 - 4: Aerial Bases, Remarks: **Change** ...For Aerial Dipole No. 6... to ...For Aerial Dipole No. 16...
- Page Appendix 3 - 6: Aerial Coupling Equipment. **Change** the following items:
 - Aerial Coupling Equipment K ZA 23688 R106... to ...Aerial Coupling Equipment K (Set Unit) ZA 23688 T1154/R106 in Truck.
 - Aerial Coupling Equipment No. 1... to ...Aerial Coupling Unit No. 1.
 - Aerial Coupling Equipment No. 2a... to ...Aerial Coupling Unit No. 2a.
 - Aerial Coupling Equipment No. 2a Mk.1/1... to ...Aerial Coupling Unit No. 2a Mk.1/1.
 - Aerial Coupling Equipment No. 3... to ...Aerial Coupling Unit No. 3.
 - Aerial Coupling Equipment No. 6... to ...Aerial Coupling Unit No. 6.
 - Aerial Coupling Equipment No. 8... to ...Aerial Coupling Unit No. 8
- Page Appendix 3 - 9: Cases Spare Valves/Parts. **Add** the following items:
 - Cases Spare Valve 10¼ x 6½ x 6¼ ZA 42362 Wireless Set C43.
 - Cases Spare Valves No. 16 Mk.2 ZA 42589 (Believed Reception Set R209 Mk.2).
 - Cases Spare Valves No. 18 ZA 37926 Reception Set R220/R220.
 - Cases Spare Valves No. 22A ZA 43457 Wireless Station C41/R222.
 - Cases Spare Parts No. 5E Wireless Station T1154/R106.
- Page Appendix 3 - 9: Cases Spare Valves/Parts. **Change** the following item:
 - Cases Spare Valves No. 40 ...to... Cases Spare Valves No. 4p Z2/ZB 14828 SR C12.
- Page Appendix 3 - 10: Key and Plug Assemblies. **Add**:
 - Key and Plug assembly No. 18 (4-pt plug and toggle switch on top) SPF Mk.2.
- Page Appendix 3 - 10: Microphones Hand. **Add**:
 - Microphones Hand No. 13A S.P.F. No. 2. (Has a Pye plug and 4-pt plug)
- Page Appendix 3 - 10: Lamps Operator. **Add** the following items:
 - Lamps Operator No. 3ZA 4600...
 - Lamps Operator No. 4ZA 1906...
 - Lamps Operator No. 5ZA 10741...
 - Lamps Operator No. 5 N.Z. GA 104.....New Zealand Wireless Set ZC1 Mk.I and Mk.II.
 - Lamps Operator No. 6A Mk.1/1.....ZA 29311.....Tropicalised version of Lamps Operator No. 6A.
 - Lamps Operator No. 6 (Aust)Wireless Set No. 153 (Aust)
 - Lamps Operator No. 10 Mk.1/1..... Use unknown.
 - Lamps Operator No. 11 Mk.1/1..... Use unknown.
 - Lamps Operator No. C1.....ZA/C 4412.....Wireless Set No. 52.

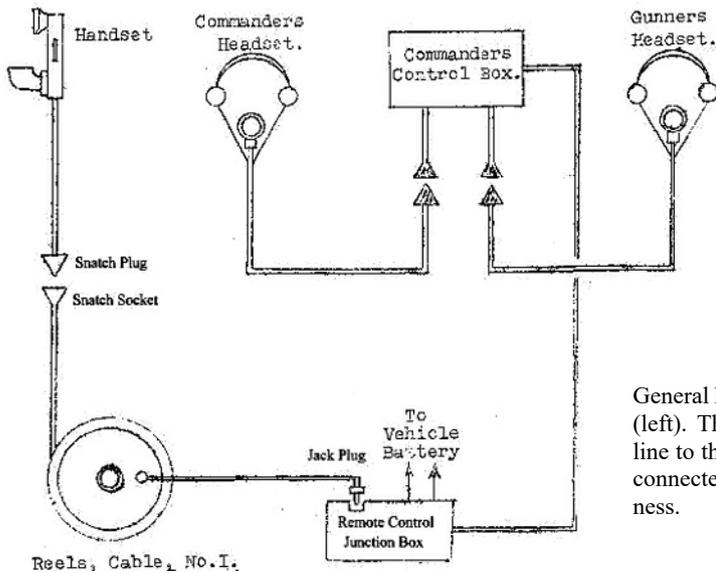
Wireless Set No. 19 Improved Remote Control

Note: The below described No. 19 Set **improvised remote control** and **external tank telephone** were two completely different arrangements but had a similar (improvised) handset in common. The remote control was merely an extension of one of the crew Microphone and Receiver Headgear Assemblies allowing control of either A set, B set or intercom via a two wire line when the tank or other type of vehicle was at the halt. The external telephone, however, was fitted in a protective box at the rear of the tank and had intercom facility only. The physical shape of the handset of both systems was similar, though components and circuit of both systems differed.

Improved remote control

In the early and mid World War 2 period considerable attention was paid in various theatres of war to the provision of a light and compact remote control system for the Wireless Set No. 19, particularly for AFV and Royal Artillery requirements.

One local solution, for some time standard in the Middle East was the 'Bean' system. This improvised remote control was locally constructed and made up from standard War Department Ordnance spare parts. The 'local' unit housed in a small box, for example a spare Junction Distribution No. 1 or 2, was normally fitted in the tank turret near the Commander's control box .

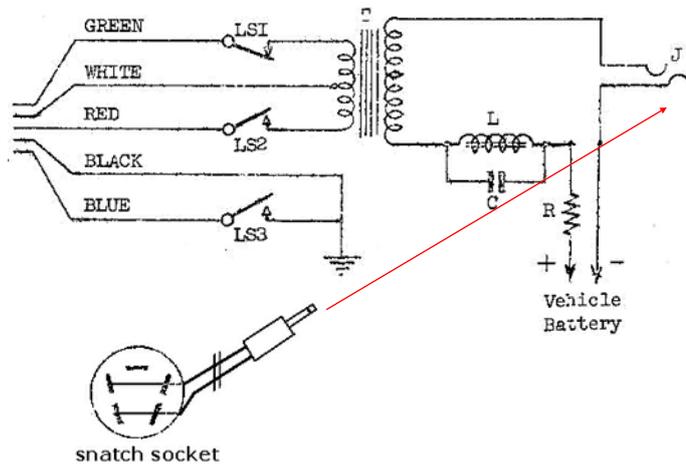


General layout of improvised remote control system (left). The handset was connected via a two wire line to the remote control junction box. This box is connected to the standard No. 19 Set Control Harness.

The absolute minimum of operation was required at the 'remote end', this consisted of a handset only, connected to the improvised remote control junction box via normally available two wire Q22 or field cable on Reel Cable No. 1 mounted at the rear of the tank turret.

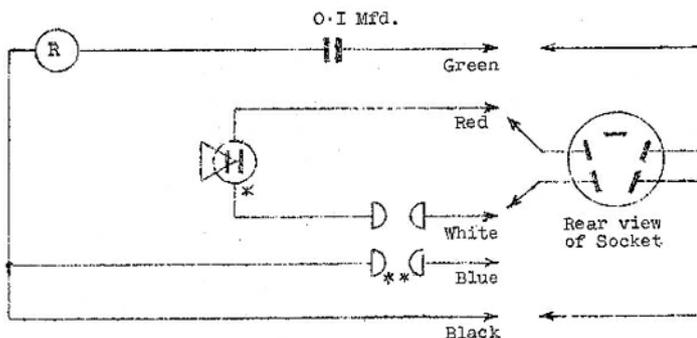
The handset was made up from a standard Microphone and Headgear Assembly No. 1 with one earpiece mounted on the microphone. The original moving coil Microphone No. 7 was exchanged for a carbon type Microphone No. 3.

Circuit diagram of the locally constructed remote control junction box (right). The five wires on the left hand side of the circuit are connected to the terminal strip inside the Commander/Gunner control box in the tank. This allows switching to A set, B set or intercom. The transmit/receive relay L (activating contacts LS1 to LS3) is a spare No. 19 Set transmit relay. The transformer T is the microphone transformer T7A normally found in Junction Distribution No.1 or No.2 and was used as a set to line transformer. One half of the low impedance winding carried audio from the set, the other half carried microphone audio. The higher impedance winding of the transformer, which was connected to the two wire line, was used alternatively as audio secondary or microphone primary.



Circuit diagram of modified Microphone and Headgear Assembly No. 1 (left). Only one earpiece R was used (with a condenser in series for blocking the DC); the microphone * was a carbon type. In the corresponding Snatch Socket the microphone was connected in parallel with the earpiece and the two wires terminated to the reel cable.

The Blue wire marked ** was not used. This was previously the transmit/receive contact, but now the microphone current actuated the relay in the remote control junction box. Much later in the war Junction Remote Control No. 1 and No. 2 were issued for this purpose, partly based on the 'Bean' system, but not so compact. See pages 22 and 23 of the 'WS 19 Control' paragraph in *Wireless for the Warrior Volume 2*.



External telephone on Sherman tank intercom system for Infantry use.

To allow the Infantry to communicate in the No. 19 Set tank intercom system an external telephone handset was connected to an additional standard driver's type Junction Distribution No. 3. This assembly was mounted on the outside of the tank in a protective container bolted to the rear of the tank about midway between the exhaust stacks. It was wired into the No. 19 Set intercom system via a protective cable run through the tank hull to the terminal strip in the normal Junction Distribution No. 3 (the driver's box). To allow the Infantry user of the external tank telephone some freedom of movement for observation, the drop lead on the external Junction Distribution No. 3 was 30 ft in length. The improvised telephone handset was ingeniously made up from a standard No. 19 or No. 22 Set type Microphone and Headgear Assembly No. 1 or driver's type No. 2. It is interesting to note that it was physically almost impossible to use the handset in the normal way and whilst speaking the earpiece could not be used.



Mechanical arrangements of fitting a single earpiece to the dynamic type Microphone Hand No. 7. Both were originally part of Microphone and Headgear Assembly No. 1.



Alternative arrangements of fitting a single earpiece to a carbon granule (Tannoy) type Microphone Hand Power No. 1A, part of Microphone and Headgear Assembly No. 2. The microphone was slightly modified by two machined flat surfaces on the handle, to which was bolted the bracket for the microphone, part of the standard headset headband. The VAOS number YA 28968 was handwritten on the end of the microphone. Pictures courtesy Chris Clotworthy G17EU.

Details of AFV-Infantry Telephone Installation.	
PLAN A	
a) Churchill tank	b) All other tanks
ZA 26467 Telephone Hand (Power Mike) No. 1	ZA 26226 Telephone Hand (Moving Coil) No. 1
YA 4353 Micr Hand Power No. 1A	ZA 2902 Micr Hand No. 7
ZA 11335 Receiver Watch F	ZA 11335 Receiver Watch F
ZA 11384 Cords Mike & Recr No. 2	ZA 11381 Cords Mike & Recr No. 1
ZA1835 Plugs 5-pt No. 5	ZA 1835 Plugs 5-pt No. 5
PLAN B: no details known.	

Wireless Set No. 22

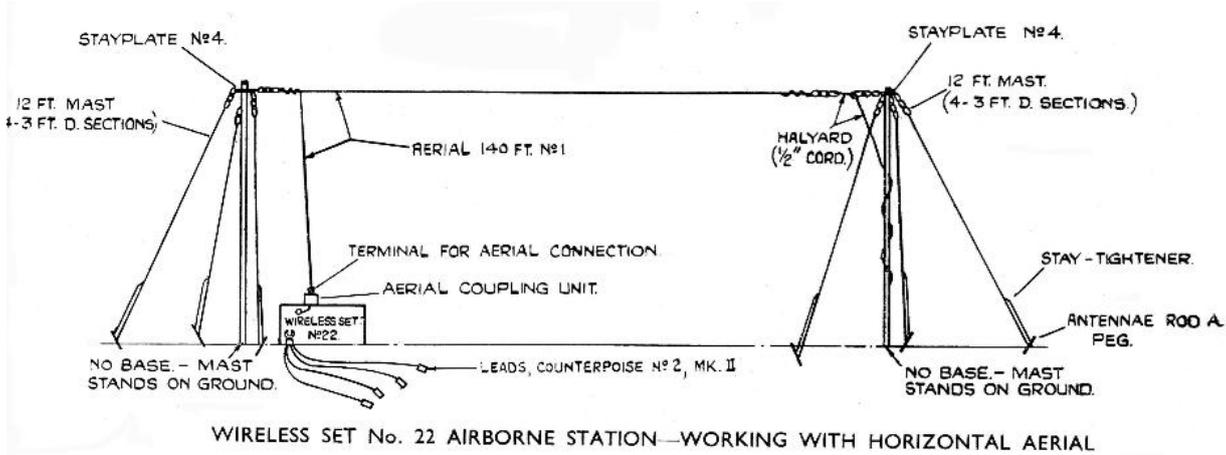
- Operation on dry batteries.

Owing to the critical supply position of secondary batteries for Wireless Set No. 22, 'Batteries Dry HT/LT 160/7.5V (WB N(ot) I(n) V(ocabulary))' were introduced during a certain period in 1944 as an alternative. They were made up in four containers as follows:

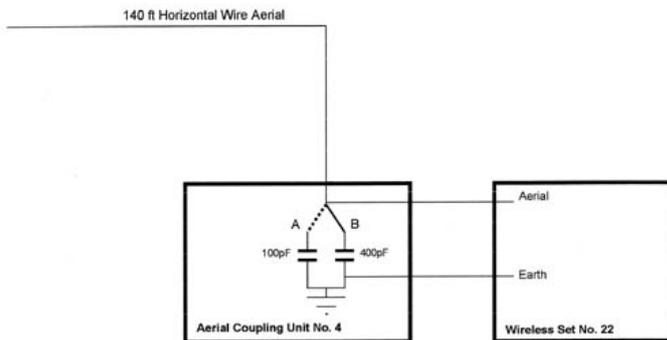
- One Container No. 1 (Battery dry HT 160 volts)
- One Container No. 2 (Battery dry HT 160 volts)
- One Container No. 3 (Battery dry LT 7.5 volts)
- One Container No. 4 (Battery dry LT 7.5 volts)

When operated from dry batteries the Power Supply Unit No. 4 as normally used with Wireless Set No. 22 when working from a secondary battery, was not used. It may be interesting to note that Wireless Set No. 62 (the replacement for the No. 22 Set) was similarly modified to operate from No. 31 Set dry batteries. See Page W.S.-34 in Volume 2 of "Wireless for the Warrior".

- All Wave Aerial for Wireless Set No. 22.



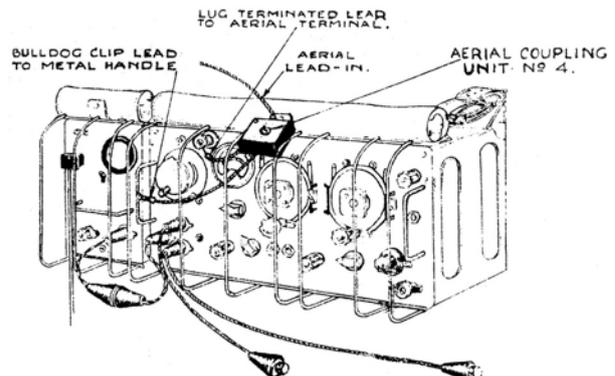
Aerial 140-ft No. 1 on 12-ft masts was an 'All Wave' inverted L type horizontal wire aerial for Wireless Set No. 22, suitable for medium range communication (over 50 miles). Its advantage was that it could be used on any frequency within the coverage of Wireless Set No. 22 without making adjustments to its length. It was standard issue for special forces stations such as used by Airborne Signals. More can be found in 'Wireless for the Warrior', Volume 2, Section WS 22-16. The 140-ft aerial should not be confused with the series of 3/4 wavelength wire aeri- als as these had each a limited frequency range. In order to match a 140-ft aerial to the Wireless Set No. 22, a special loading unit was required, 'Aerial Coupling Unit No. 4', a small box comprising two condensers and a switch. It was normally clipped on to the front grille of the set.



The aerial lead was connected to the top terminal of the Aerial Coupling Unit No. 4. A lug termination connected to the Wireless Set No. 22 aerial terminal, and a 'bulldog' clip connected to a suitable earth point on the set, for example the metal handle. Depending on the frequency in use, condenser A (400pF) or condenser B (100pF) was switched in parallel to the set aerial and chassis. Note that Leads Counterpoise No.2 Mk.II must be used, normally arranged under the horizontal Aerial.

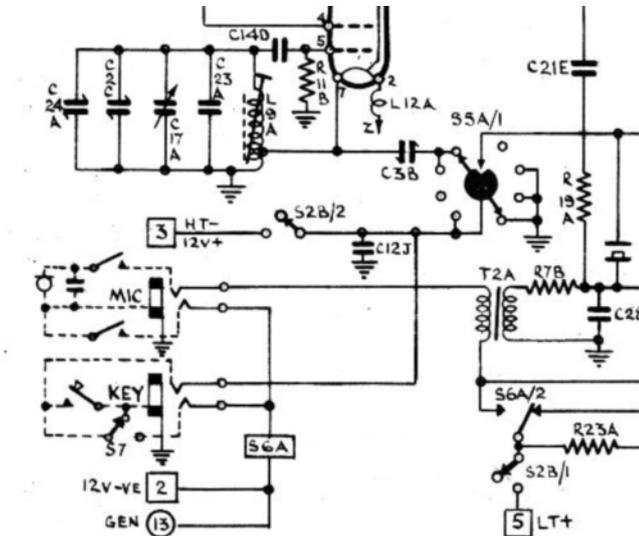


Photograph of Aerial Coupling Unit No. 4, clamped on the Wireless Set No. 22 grille. Three versions of this unit were noted: Mk.I (ZA 10560), Mk.II (ZA 22594) and Mk.III (ZA 27322), differing only in small detail.

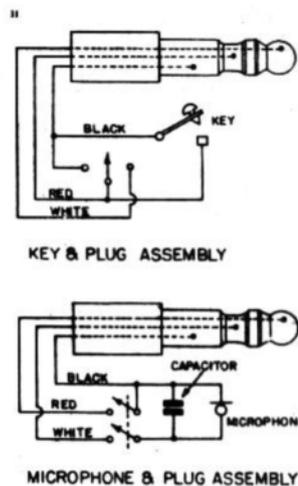


Wireless Set No. 48 Morse key assembly.

Kelvin Barnsdale, ZL3KB, from New Zealand noted that there is a slight error in the circuit diagram drawing of Wireless Set No. 48 Mk.1* (Figure 48-5 in Volume 2 of 'Wireless for the Warrior'). The arrow of the Send/Receive switch S7 was drawn wrong and must be reversed. The present position of S7 is 'Receive'. When the switch is thrown into 'Send', the top and mid tip of the jack are connected resulting in Send/Receive relay S6A to be active. The actual keying was done by the Morse key connecting the HT- and 12V+ to chassis.



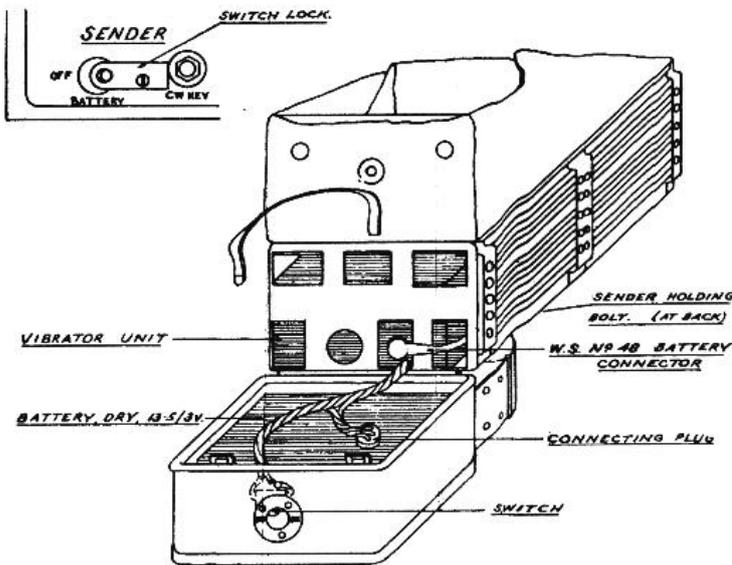
Revised (part) circuit diagram Wireless Set No. 48 Mk. 1* Sender. See Figure 48-5 in 'Wireless for the Warrior' Volume 2.



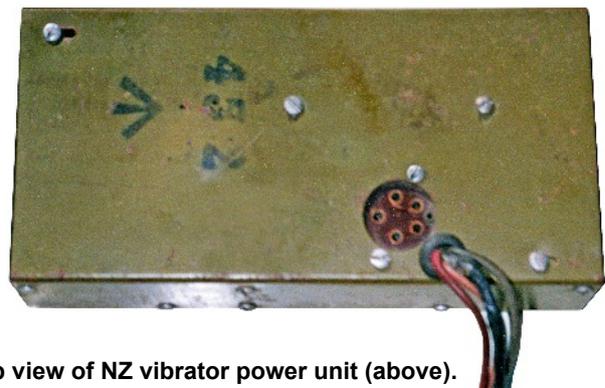
Circuit diagram of Key and Plug Assembly No. 8A (ZA/US/1104) and Microphone and Plug Assembly T17 (2B 1617).

Wireless Set No. 48 Vibrator Power Unit (NZ).

From John McKim of Christchurch, New Zealand, I received more information on the Vibrator Power Unit (NZ) for Wireless Set No. 48. (See page 48-10 in Volume 2 of 'Wireless for the Warrior'). Wireless Set No. 48 Vibrator Power Unit (NZ) permitted the use of a 13.5/3 volt block instead of the battle battery when the set was used as a one man station. The 13.5/3 volt block was much simpler to manufacture and had a much longer tropical life.

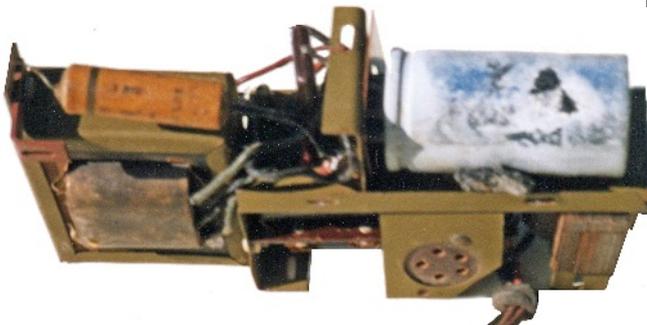


Wireless Set No. 48 Vibrator Power Unit (NZ) was housed in a metal box which fitted into the space beneath the sender section of the set. It was fitted with a five-pin socket into which plugged the battery connection of the No. 48 Set. In addition it had a lead which bears an octal plug to connect with the 13.5/3 volt block and a second lead with a double-pole switch for controlling the filament supply and input to the vibrator section. The 3 volt section was used only to supply the No. 48 Set filaments. The 13.5 volt part of the battery block fed the vibrator unit, producing about 150 volt HT; it was also used to energise the send/receive relay.

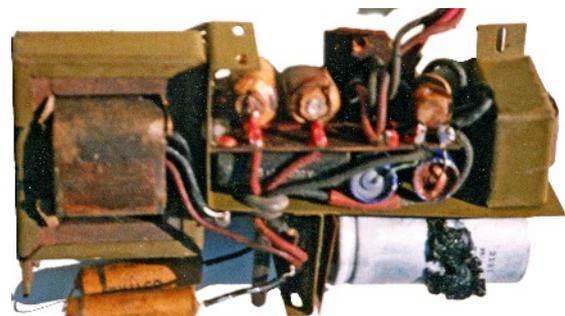
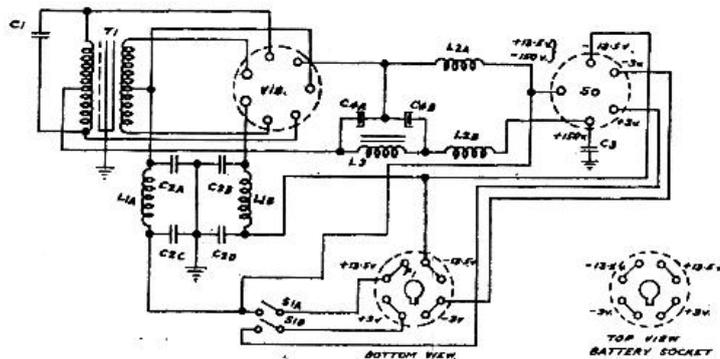


Top view of NZ vibrator power unit (above).

WIRELESS SET NO 48 VIBRATOR POWER UNIT (N.Z.) AND BATTERY, DRY, 13.5/3V. INSTALLATION.



Side view of NZ vibrator power unit showing vibrator and 5-pt socket to WS No. 48 transmitter unit (left).



Side view of NZ vibrator power unit showing vibrator transformer left, and HT filter choke right.

PART	DESCRIPTION	VALUE	PURPOSE
L1A, L1B	CHOKK, L.T.		HASH
L2A, L2B	" DOUBBLE, H.T.		"
L3	" H.T.		"
C1	CONDENSER, PAPER	.004 MF, 1600V	SMOOTHING BUFFER
C2A, B, C, D.	"	.25 " 600V	HASH
C3	"	.05 " 250 V	"
C4A, C4B	" ELECTRO.	8 " "	SMOOTHING
T1	TRANSFORMER	13.5 / 150V	
VIB.	VIBRATOR, V8273	12V, 7 PIN	
S1A, S1B	SWITCH, DRDT.	2 PIN, MIN.	ON / OFF
50	SOCKET	5 PIN, OCTAL	OUTPUT
P1	PLUG	8 PIN, OCTAL	INPUT

WIRELESS SET NO 48 VIBRATOR POWER UNIT (NZ)

WIRELESS SET No. 48
VIBRATOR POWER UNIT (N.Z.)

WORKING INSTRUCTIONS

E. V. PAUL, Government Printer, Wellington.

- (b) By the same circuit, energizes the primary of T1.
- (c) In the send position energizes the send-receive relay from pins 2 and 3.
- (3) **H.T. Circuits.**—The AC voltages across the secondary of the transformer T1 are rectified by means of a set of contacts on vibrator V1B, the positive being at the centre tap of the transformer, the negative at the reed of the vibrator. Condenser C1 is the buffer condenser. The H.T. is filtered by means of an iron-cored choke L3 and the electrolytic condensers C4A, C4B. The chokes L2A, L2B, and condensers C3, C2C, remove the hash from the H.T. supply.
4. **Voltages.**—The voltages are as follows, with the corresponding meter reading of the 48 set meter on H.T. and L.T.:

	Receive.		Send R.T.		Send C.W.	
	Meter.	Volts.	Meter.	Volts.	Meter.	Volts.
H.T. Volts—						
New Battery	420	168	380	152	330	132
Exhausted battery	275	110	235	94	195	78
L.T. Volts—						
New battery	370	3.05	360	3.00	360	3.00
Exhausted battery	300	2.50	290	2.45	290	2.45

5. **Battery, 13.5/3 Volts.**—This battery contains two sections. The L.T. block consists of two parallel banks each of two cells in series, giving 3 volts. The H.T. block uses eighteen cells, being two parallel banks of each nine cells in series, which gives a no-load voltage of 13.5 volts. Leads are brought out to an octal socket, connections being as in diagram. A large coil (Nat. (Arb. Type 60) is used in order to get greater shelf life and tropical life. The low terminal voltages reduce losses due to leakage between cells. The size is—Length, 8½ in.; width, 5 in.; height, 4 in.; weight, 8.5 lb.

CHAPTER III.—MAINTENANCE

- If the unit is defective, it should be repaired by an I.M., not by the operator.
- Vibrator.**—Normally this is the unit most prone to trouble. The indications of trouble are improper or no H.T. voltage, short life of battery, or hash.
- Electrolytic Condensers.**—If excessive hum is encountered and the modifications in installation instructions have been made, the condensers C4A, C4B should be checked for loss of capacity.
- Other possible troubles, such as intermittent faults, might be caused by poor connections at the battery or the 48 set battery connector plug, dirty relay or pressel switch contacts. Keep all contacts clean.

APPENDIX I.—LIST OF MAIN COMPONENTS

Part	Description	Value	Purpose
L1A, L1B	Choke, L.T.	..	Hash filter
L2A, L2B	Choke, double H.T.	..	Hash filter
L3	Choke, H.T.	..	Smoothing choke.
C1	Condenser, paper	.004 mf., 1,600 v.	Buffer.
C2A, B, C, D	Condenser, paper	.25 mf., 600v.	Hash filter.
C3	Condenser, paper	.05 mf., 600 v.	Hash filter.
C4A, C4B	Condenser, electrolytic	8 mf., 250 v.	Smoothing cond.
T1	Transformer	13.5/150 v.	..
V1B	Vibrator, V6273	12 v. 7-pin	..
S1A, S1B	Switch, D.P.D.T.	..	On-off switch.
SO	Socket	5-pin, min.	Output mounting switch.
	Switch plate	..	Ditto
	Indicator plate
	Parker Kalon screws (self-tapping)
	Lid
	Brass contact strips

CONTENTS

CHAPTER I.—DESCRIPTION	3
CHAPTER II.—INSTALLATION AND OPERATION	5
CHAPTER III.—MAINTENANCE	7
APPENDICES	
APPENDIX I.—LIST OF MAIN COMPONENTS	7
APPENDIX II.—LIST OF DIAGRAMS	7
DIAGRAMS	
FIG. 1.—INSTALLATION DIAGRAM	Facing Page 5
FIG. 2.—SCHEMATIC DIAGRAM AND BATTERY CONNECTIONS	Page 5

Army Headquarters,
Wellington, N.Z.

WIRELESS SET No. 48
VIBRATOR POWER UNIT (N.Z.)

WORKING INSTRUCTIONS

CHAPTER I.—DESCRIPTION

- Purpose.**—The Wireless Set No. 48 Vibrator Power Unit (N.Z.) permits the use of a 13.5/3 volt block instead of the battle battery when the set is used as a one-man station. The 13.5/3 volt block is much simpler to manufacture and has much greater tropical life.
- General Description.**—The unit is housed in a metal box which fits into the space beneath the sender section of the wireless set No. 48 as described in fitting instructions. The box weighs 5 lb. and measures 8 in. by 4 in. by 2 in. The unit is fitted with a small five-pin socket into which plugs the battery connection of the 48 set and a lead which bears an octal plug to connect with the 13.5/3 volt block and a double-pole single-throw switch for controlling the filament supply and input to the vibrator section. The lid of the box is held down by six screws, two brass contacts being fitted to connect the box to the transmitter chassis.
- Technical Description (see Circuit Diagram attached):**—
 - 3-volt Circuit.**—The negative lead is fed straight through to pin 1 of the battery connector of the 48 set and the positive lead is taken via section S1B of the "on-off" switch to pin 5.
 - 13.5-volt Supply.**—This performs three functions:—
 - Energizes the driving coil of the vibrator V1B via the LT hash filter chokes L1A, L1B, shunted by the condensers C2A, B, C, D and via the section S1A of the "on-off" switch.

6. Current Drain and Battery Life:—

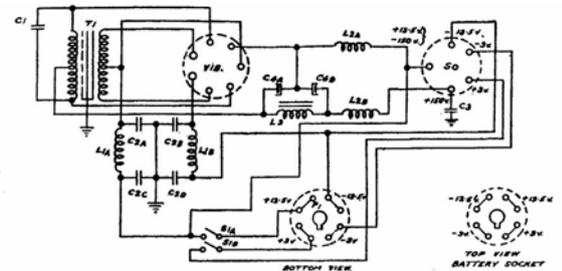
	Receive.	Send C.W.	Send R.T.
L.T.	.15a	.25	.32
H.T.	.31a	.56	.83

A new battery, when the relay is properly adjusted, should give approximately ten hours on a continuous run and approximately twelve hours in three four-hour periods with a normal battery.

CHAPTER II.—INSTALLATION AND OPERATION

- With the controls facing you, open battery compartment. If the set is fitted with a battle battery, unplug cable from set and remove battery.
- Unplug lead from transmitter to receiver.
- Unscrew transmitter-holding bolt at back of carrying case and remove transmitter unit.
- Remove the transmitter-holding bolt completely, by holding the retaining washer (on inside of case) and unscrewing bolt.
- Pass vibrator "on-off" switch and leads through rear hole second from right in floor of sender compartment into battery compartment.
- Place vibrator power unit on floor of sender compartment. To do this, close battery compartment and stand set upright. Holding the vibrator unit horizontal, socket side down, pass it into sender compartment, pressing it against the flat spring at the back. Without allowing it to tilt, slide the unit downwards, keeping the spring depressed, until it lies on the floor of the set.
- Replace the transmitter-retaining bolt and holding washer, and open battery compartment.

- Feed the battery cable from the 48 transmitter unit past the right-hand end of power supply via the hole at the right end back at the bottom of the case.
 - Keeping the vibrator unit in place at the bottom of the compartment, insert the transmitter and screw it down with the holding bolt.
 - Dress leads and fit 48 set battery connector to socket in power supply.
 - Replace connecting lead from transmitter to receiver.
 - Unscrew the three screws in the switch assembly and remove the front plate. Place switch inside the battery compartment above the hole, with the back plate over the hole on the inside and the front plate (with lettering) on the outside of the hole. ON should be to right. Screw plates together. Check that the switch is in the OFF position.
 - Insert 13.5/3-volt battery in battery compartment socket at right front, and insert octal connecting plug into socket on battery.
 - Turn "On-off" switch of 48 set to ON position.
 - Remove small screw at right of switch, fit switch locking plate, and screw down.
 - Close battery compartment, check that generator-battery switch (on 48 receiver) is on BATTERY position.
 - Turn vibrator unit "on-off" switch to ON position and check set.
- Typical Meter Readings:** L.T., 360; H.T. receive, 425; H.T. send R.T., 385; H.T. send C.W., 350.
- NOTE.**—In certain cases it may be found that the receiver develops considerable hum, and the following modification will be made by Instrument Mechanic (Signals) or E.M.E. personnel. Materials needed: a foot of hook-up wire, preferably white. Receiver should be removed from the case and the bottom plate taken off. Unsolder white wire from pin 3 of power socket of receiver. Unsolder the white lead from left top contact of switch S2A (generator-battery switch). Connect pin 3 to switch contact with the new lead, carrying from switch contact over the top of switch through hole in front of chassis by T1A over top of resistor R2A and straight across to pin 3.



DATE	BY	REVISIONS
DRAWN	11. 12. 42	
TRACED	12. 12. 42	11 11 REDRAWN
CHECKED	12. 12. 42	
APPROVED	13. 12. 42	

X 337

SIGNALS EXPERIMENTAL ESTABLISHMENT
ARMY HEADQUARTERS, WELLINGTON, N.Z.

WIRELESS SET No 48 VIBRATOR POWER UNIT (N.Z.) - SCHEMATIC

PART	DESCRIPTION	VALUE	PURPOSE
L1A, L1B	CHOKES, L.T.		HASH
L2A, L2B	" DOUBBLE, H.T.		"
L3	" H.T.		SMOOTHING
C1	CONDENSER, PAPER	.004 MF., 1600V	BUFFER
C2A, B, C, D	"	.25 " 600V	HASH
C3	"	.05 " 600V	"
C4A, C4B	" ELECTRO.	8 " 250V	SMOOTHING
T1	TRANSFORMER	13.5 / 150V	
V1B	VIBRATOR, V6273	12 V. 7 PIN	
S1A, S1B	SWITCH, D.P.D.T.		ON/OFF
SO	SOCKET	5 PIN, MIN.	OUTPUT
PI	PLUG	8 PIN, OCTAL	INPUT

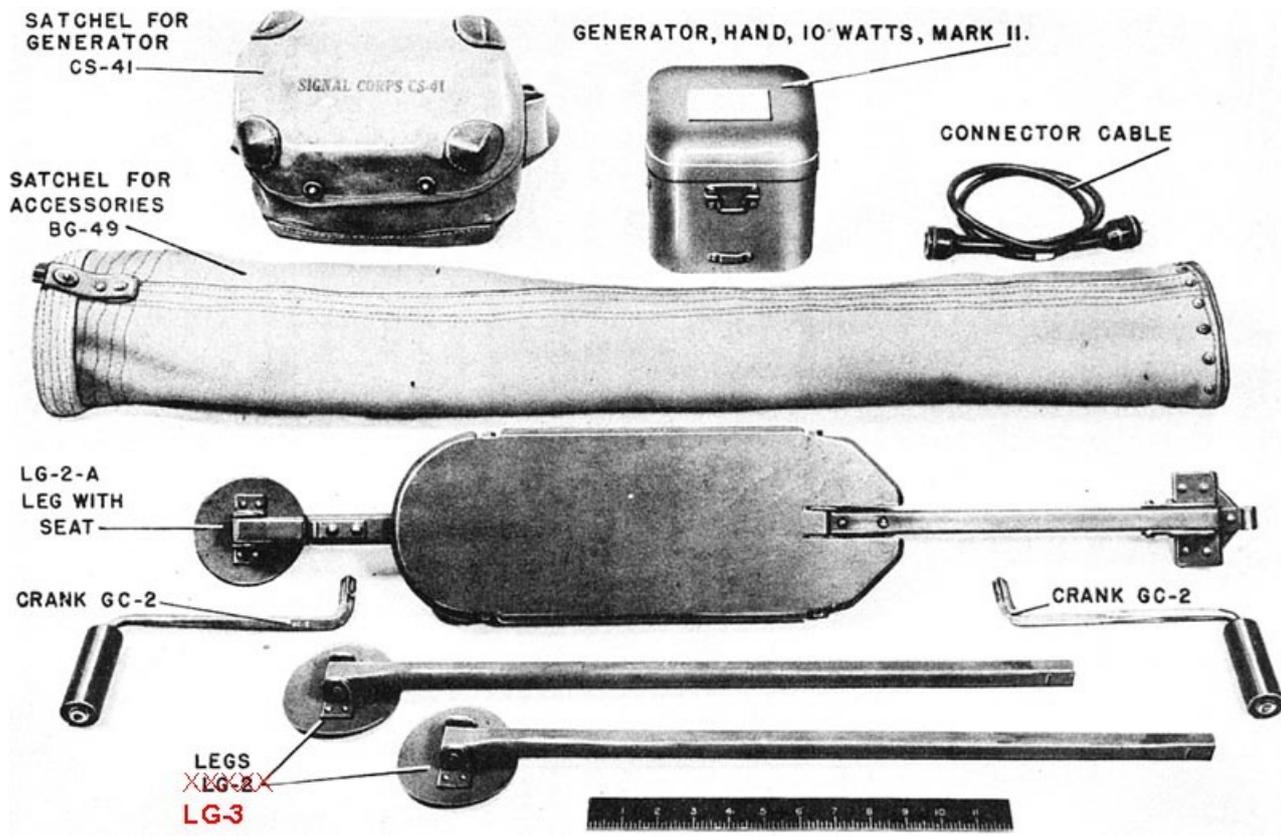
WIRELESS SET No 48 VIBRATOR POWER UNIT (N.Z.)

FIG. 2 (SCHEMATIC) DRG. S.E.C. X.337

Hand generator for Wireless Set No.48.

Generator , hand, 10 watts, Mk.II was designed to supply LT, HT and GB for Wireless Sets No. 48 and No. 18. The generator set was principally comprised of the generator with two cranks, two straight front legs and a folding rear leg with seat. Figure 48-12 in Volume 2 of 'Wireless for the Warrior' shows all the component parts.

It must be noted that there is an error in the nomenclature of the straight legs. This error is not only in the component parts picture but also in the component parts list printed in the original No. 48 Set manual.



Robert Downs WA5CAB who reported this error, wrote the following to clear the situation: ‘...on the Wireless Set No. 48 page the nomenclature of the straight legs was incorrect. The folding leg was LG-2 (steel), LG-2-A (aluminium in early '41 then back to steel in '42) and LG-2-B (aluminium) in late '43. The straight leg was LG-3 (steel) then LG-3-B (aluminium) in late '43 with the easing of the aluminium shortage in the US...’.

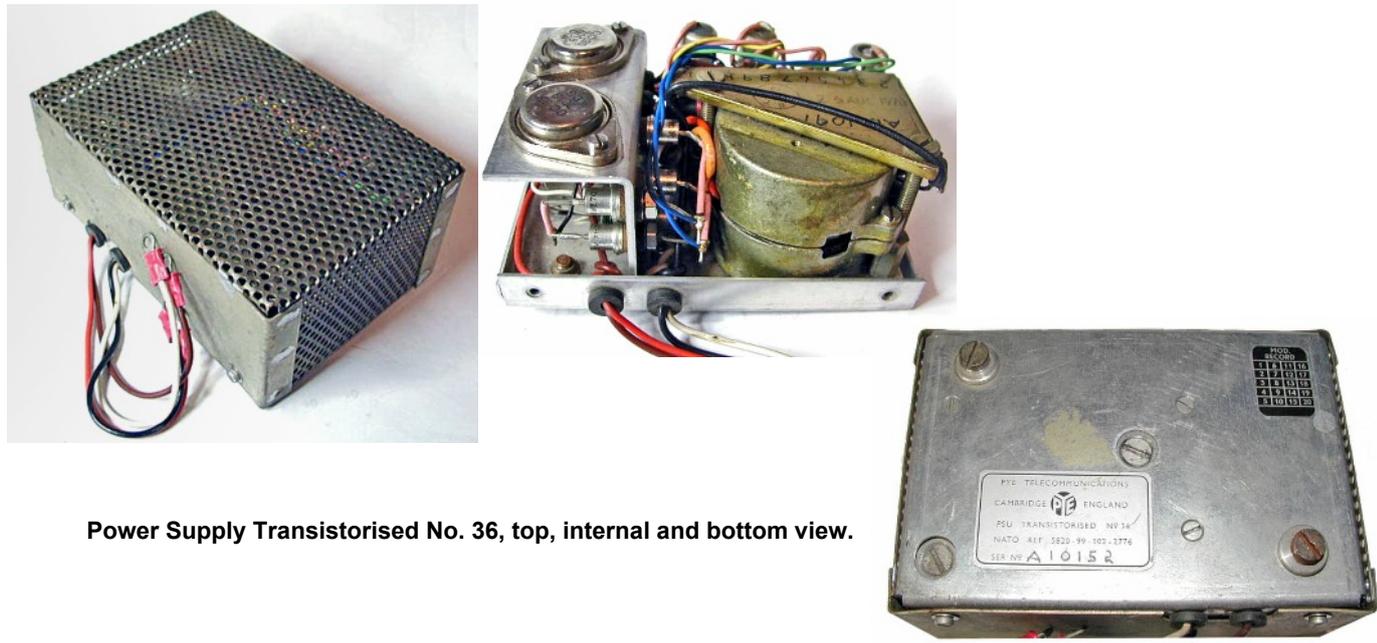
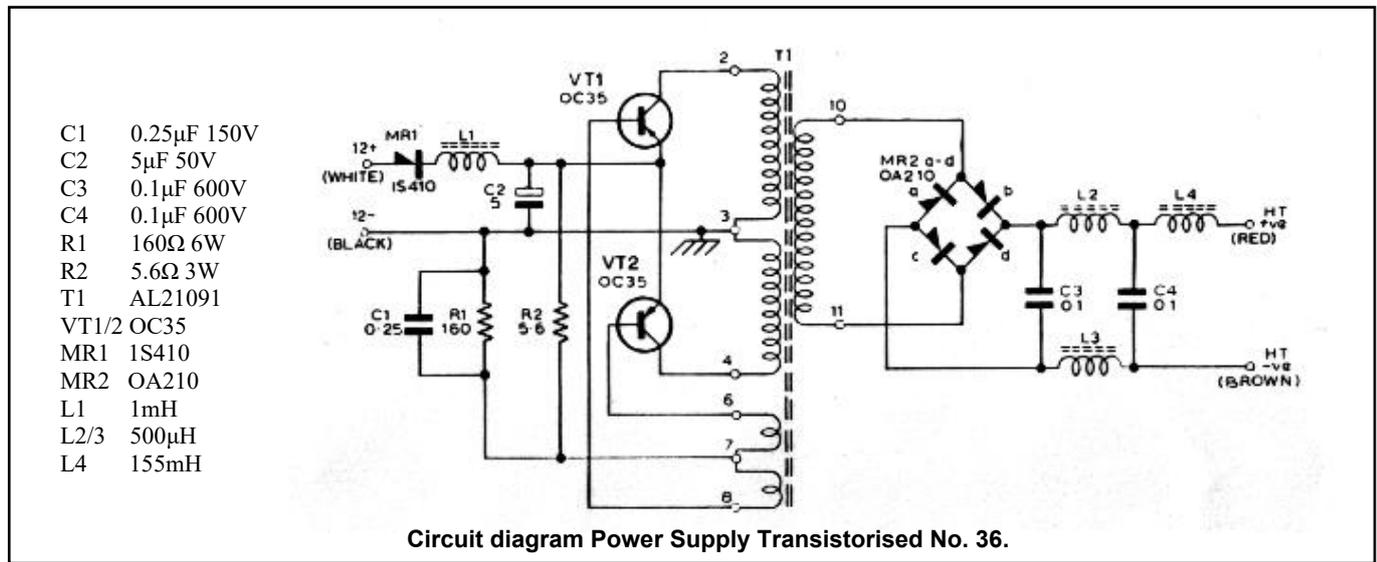
‘...the post-war legs, besides being made for the AN/GRC-9 (GN-58-A), were also used with the AN/TRC-7 (G-3B/TRC-7) and the MX-898/GR (G-8/GR) for several sets that included RT-66, 67, 68 or 70). Cut off, they were used with the RS-6 and AN/GRC-109 (both with GN-58-A). In the late 50's, the G-43/G came along to replace the GN-58-A and for what ever reason, they built a tripod mount for it, which also fit the later G-77/G. So as far as I know, the last generator built that used LG-2-B and LG-3-B was the G-8A/GR. The GN-45-A or -B of SCR-284 used the same LG-2 and LG-3 as did all the other radio hand crank generators built before, during and immediately after the War (except for GN-54 which used three LG-3's and no LG2)...’.

Wireless Set No. 62 Power Supply Transistorised No. 36.

Transistorised power supply for Wireless Set No. 62 (Cat No. Z1/5820-99-102-2776) was a direct replacement of the rotary transformer power unit which was normally issued with the standard equipment. It operated on 12 V DC and resulted in a considerable reduction in battery consumption. The year of introduction was about 1963. Around 1965 the stocks of the rotary transformer unit were exhausted and Power Supply Transistorised No. 36 was issued in lieu. Sets fitted with the new transistor power supply unit were marked in red lettering "TRANSISTORISED P.S.U." in a space to the left and above the front panel meter. The complete unit was housed in a ventilated metal case with the same overall dimensions as those of the rotary transformer power unit. When installed it was bolted directly to the chassis of the No. 62 Set, the two securing screws being provided with adapter washers to replace the rubber grommets on which the rotary transformer power unit was mounted. The unit operated from 12V DC and used two transistors type OC35 in a conventional push-pull DC converter circuit with saturable transformer coil switching. Diode MR1 provided protection for the transistors if the supply was connected in the wrong polarity. The working frequency of the converter was approximately 1.5kHz.

	Rotary transformer	Transistor power supply
	Average current	Average current
Listening watch	3A	0.9A
Receive (ALL ON)	3.7A	1.5A
1:5 transmit/Receive	4.2A	2.3A
Transmit CW	5A	2.7A
Transmit R/T	4.6A	2.5A

**Wireless Set No. 62 rotary transformer vs transistor PSU.
Table showing differences in current consumption.**



Power Supply Transistorised No. 36, top, internal and bottom view.