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AUSTRALIAN MILITARY FORCES

**SIGNAL TRAINING
VOLUME III**

AUSTRALIAN PAMPHLET No. 11

ZAA 4814

Wireless Set No. 22 (Aust.)

Yellow Band Series

1944

Prepared for the Master General of the Ordnance by Radio Corporation Pty. Ltd. and issued under the direction of the Commander-in-Chief, Headquarters, Australian Military Forces.

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**SIGNAL TRAINING, VOL. III, PAM. No. 14,
WIRELESS SET No. 22 (AUST.).**

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Frt	Wksp	"
AA	Wksp (Melb)	"
Area	Wksp	"
Aust	MT Inspection Sec	"
"	Veh Pk Wksp	"
"	Mob Generating Sec	"
"	WT and Sig Eqpt Wksp Sec	"
"	Trade Repair Control Secs	"
"	Watercraft Wksp Sec (Types A, B, C)	"
Base	Watercraft Wksp	"
Aust	Floating Wksp	"
"	Landing Craft Wksp Sec	"
"	Floating Dock	"
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	AEME School	10
AAOC	Trg Bn	10
AEME	Trg Bn	10

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CHAPTER 1

GENERAL DESCRIPTION

1. Purpose and Facilities.

Wireless Sets No. 22 (Aust.), YELLOW BAND SERIES, are complete R/T and W/T stations for the purposes indicated hereunder :—

- Ground Station.
- Truck Station.
- Man-carried Station.

When fitted in trucks they are readily removed for use as ground stations and are arranged for transport in three man-carried loads when required.

For W/T operation, facilities are available for C.W. and M.C.W (keyed modulation), with provision for break-in working on C.W and M.C.W.

Immersion covers are provided with the man-carried station for fully water-proofing the Sets for use in beach landings and river crossings when required.

Fig. 1 shows the layout of a complete ground station, indicating the necessary items of equipment for this purpose.

2. Range.

TABLE 1.—RANGE : MILES.

<i>System</i> AE	<i>R/T</i>	<i>M.C.W.</i>	<i>C.W.</i>
12 ft. Rod, on move	15-30	25-35	30 and upwards
34 ft. Rod, stationary	30-40	35 and upwards	35 and upwards
Qtr.-wave Wire Aerial } Half-wave Wire Aerial }	50 and upwards	50 and upwards	50 and upwards

3. Frequency.

The Set operates on the range from 2 megacycles to 8 megacycles in two switched bands. It can therefore work with Wireless Sets No. 11, and with Wireless Sets No. 19 in armoured formations.

4. Power Supply.

The power supply unit (Item 62—Appendix "A") is of the vibrator type, operating from a 12-volt battery, and developing 300 volts at 80 mA. for the sender valves. The voltage is dropped

to 150 volts for the receiver valves by series resistance. The station will normally be used with a 12-volt 75 A.H. battery when installed in a truck or worked as a ground station, and with a 12-volt 20 A.H. battery when used as a man-carried station. The battery drain and hours of working with either battery under working conditions are tabulated below :—

TABLE 2.—BATTERY CONSUMPTION.

Conditions	Battery Drain (Amp.) (approx.)	Approx. hours working	
		12V 75 A.H.	12V 20 A.H.
Send R/T	3.75		
Send C.W.	5.00		
Receiver	2.75		
Listening watch	1.75	40	10
Normal Working, 3 hrs. receiving to 1 hr. sending	R/T	20	5
	C.W.	16	4

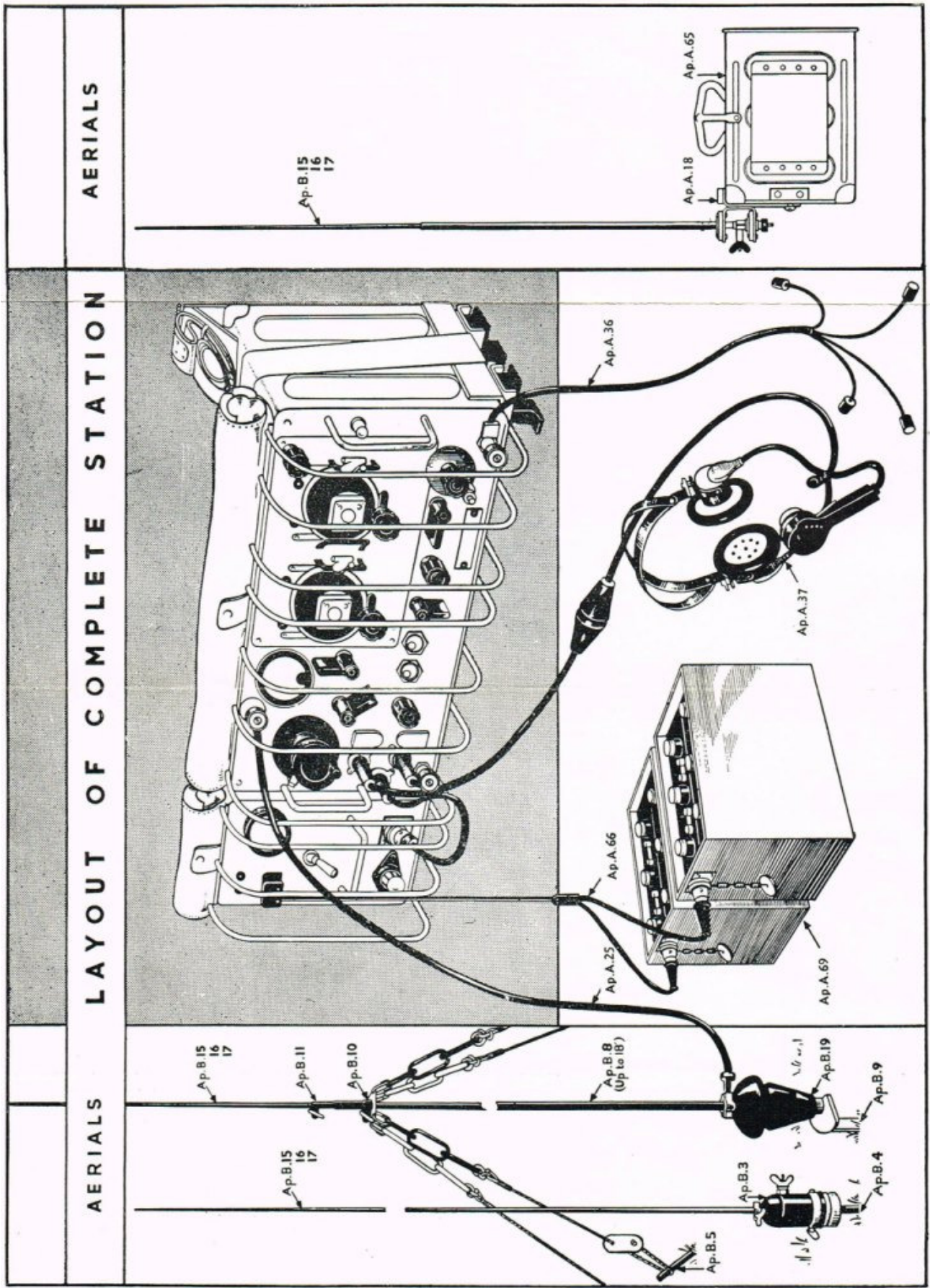
5. Sender-Receiver.

(1) Function of Controls.

Fig. 2 shows a front view of the panel of the Set and Power Unit, and indicates the purpose and method of operation of all controls and switches. The operator should study this carefully with the Set before him.

(2) The Valve Layout.

Fig. 3A indicates, in the form of a block diagram, the arrangements of valve stages in the Sender-receiver. Valves V1A, V1B, V1C, V2A, V3A, V3B and V4A are working when the Set is used as a receiver, and valves V1C, V3A, V4A, V5A, V6A and V7A are working when the Set is used as a sender, as shown in Figs. 3B and 3C. With this information, these figures become self-explanatory



AERIALS

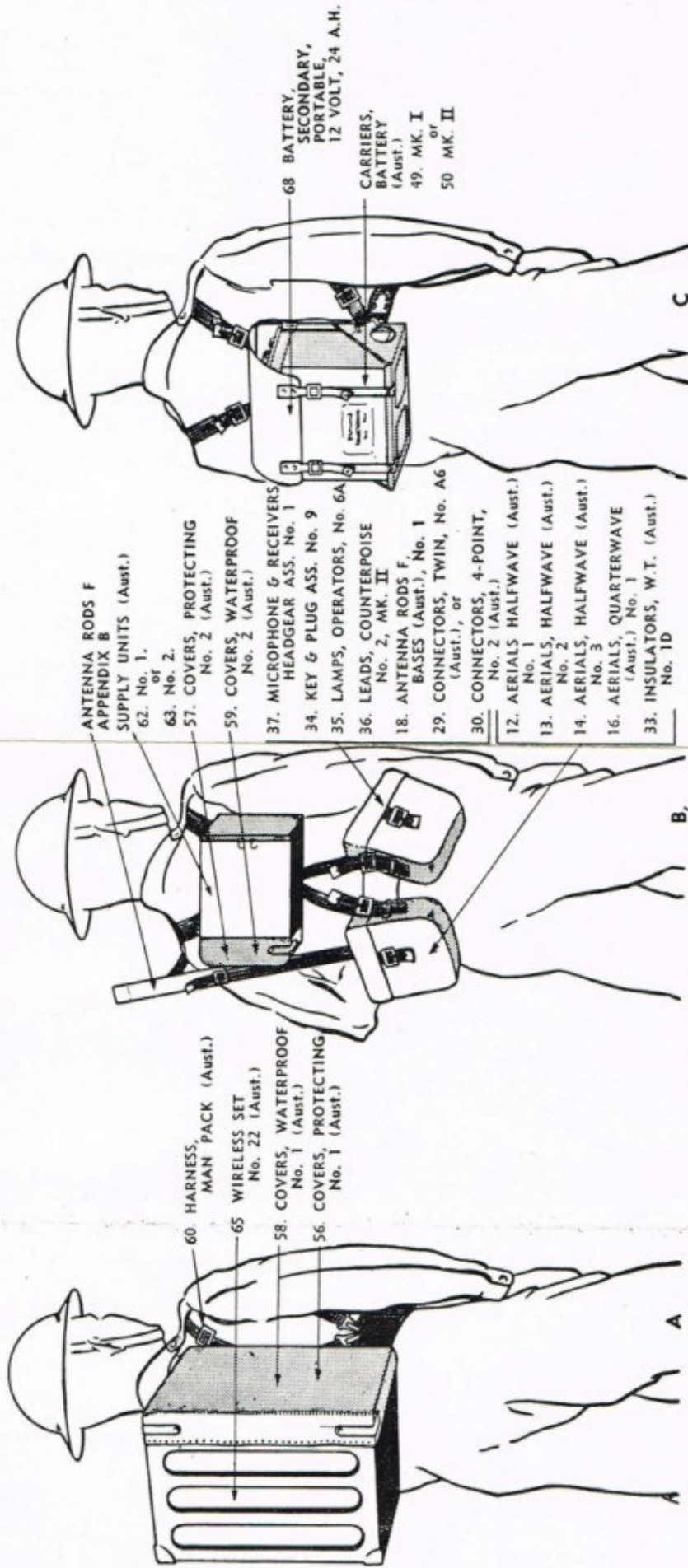
LAYOUT OF COMPLETE STATION

AERIALS

Description of Parts can be found in Appendix A, B, or C as indicated

Fig. 1

MAN-CARRIED STATION



ANTENNA RODS F
APPENDIX B

SUPPLY UNITS (Aust.)

62. No. 1,
or

63. No. 2.

57. COVERS, PROTECTING
No. 2 (Aust.)

59. COVERS, WATERPROOF
No. 2 (Aust.)

37. MICROPHONE & RECEIVERS
HEADGEAR ASS. No. 1

34. KEY & PLUG ASS. No. 9

35. LAMPS, OPERATORS, No. 6A

36. LEADS, COUNTERPOISE
No. 2, MK. II

18. ANTENNA RODS F,
BASES (Aust.), No. 1

29. CONNECTORS, TWIN, No. A6
(Aust.), or

30. CONNECTORS, 4-POINT,
No. 2 (Aust.)

12. AERIALS, HALF WAVE (Aust.)
No. 1

13. AERIALS, HALF WAVE (Aust.)
No. 2

14. AERIALS, HALF WAVE (Aust.)
No. 3

16. AERIALS, QUARTER WAVE
(Aust.) No. 1

33. INSULATORS, W.T. (Aust.)
No. 1D

60. HARNESS,
MAN PACK (Aust.)

65 WIRELESS SET
No. 22 (Aust.)

58. COVERS, WATERPROOF
No. 1 (Aust.)

56. COVERS, PROTECTING
No. 1 (Aust.)

68 BATTERY,
SECONDARY,
PORTABLE,
12 VOLT, 24 A.H.

CARRIERS,
BATTERY
(Aust.)

49. MK. I
or

50 MK. II

Index Nos. refer to Appendix A Complete Station List

Fig. 5

CONTROLS AND ADJUSTMENTS

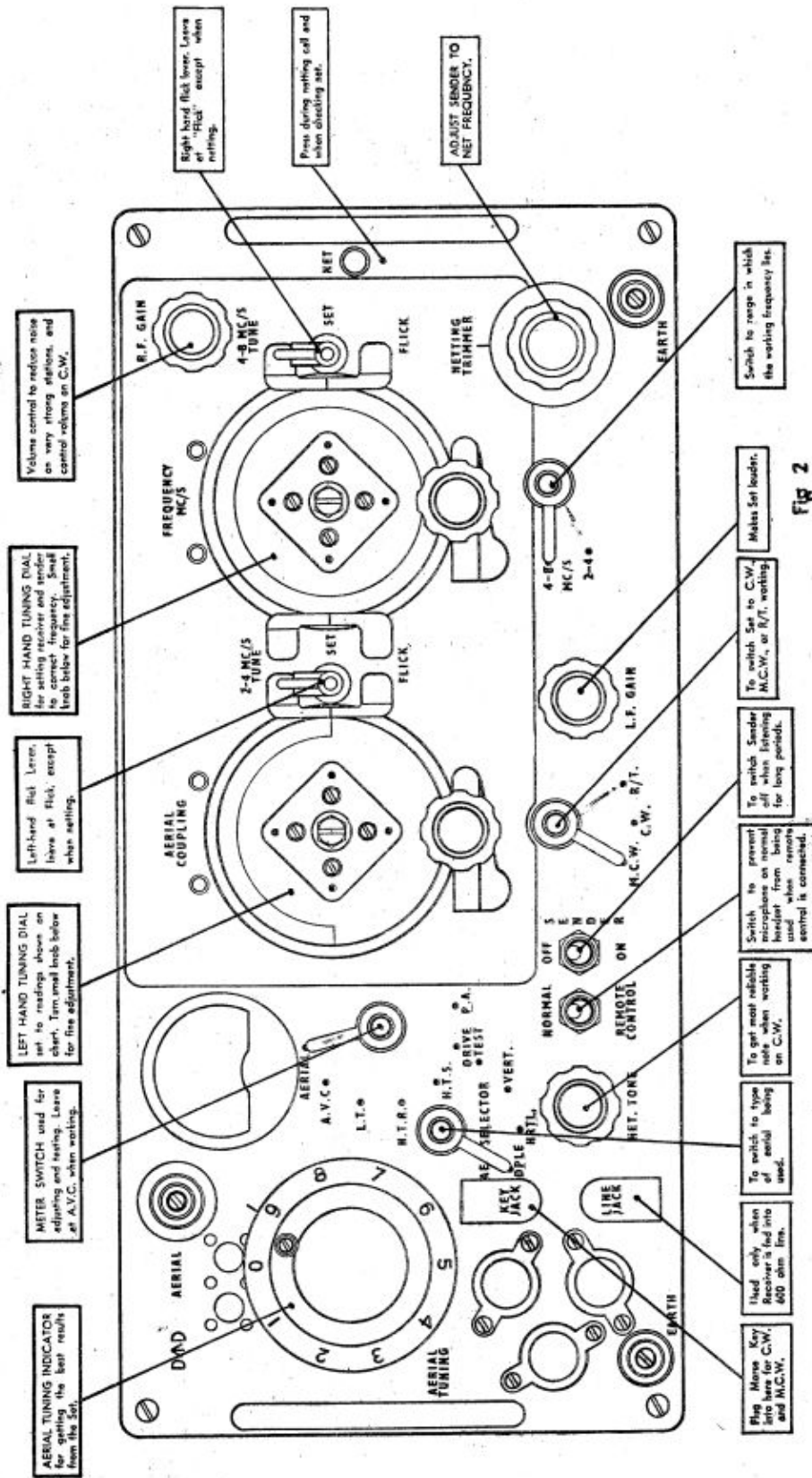


Fig 2

BLOCK DIAGRAMS OF CIRCUIT

Sender Receiver

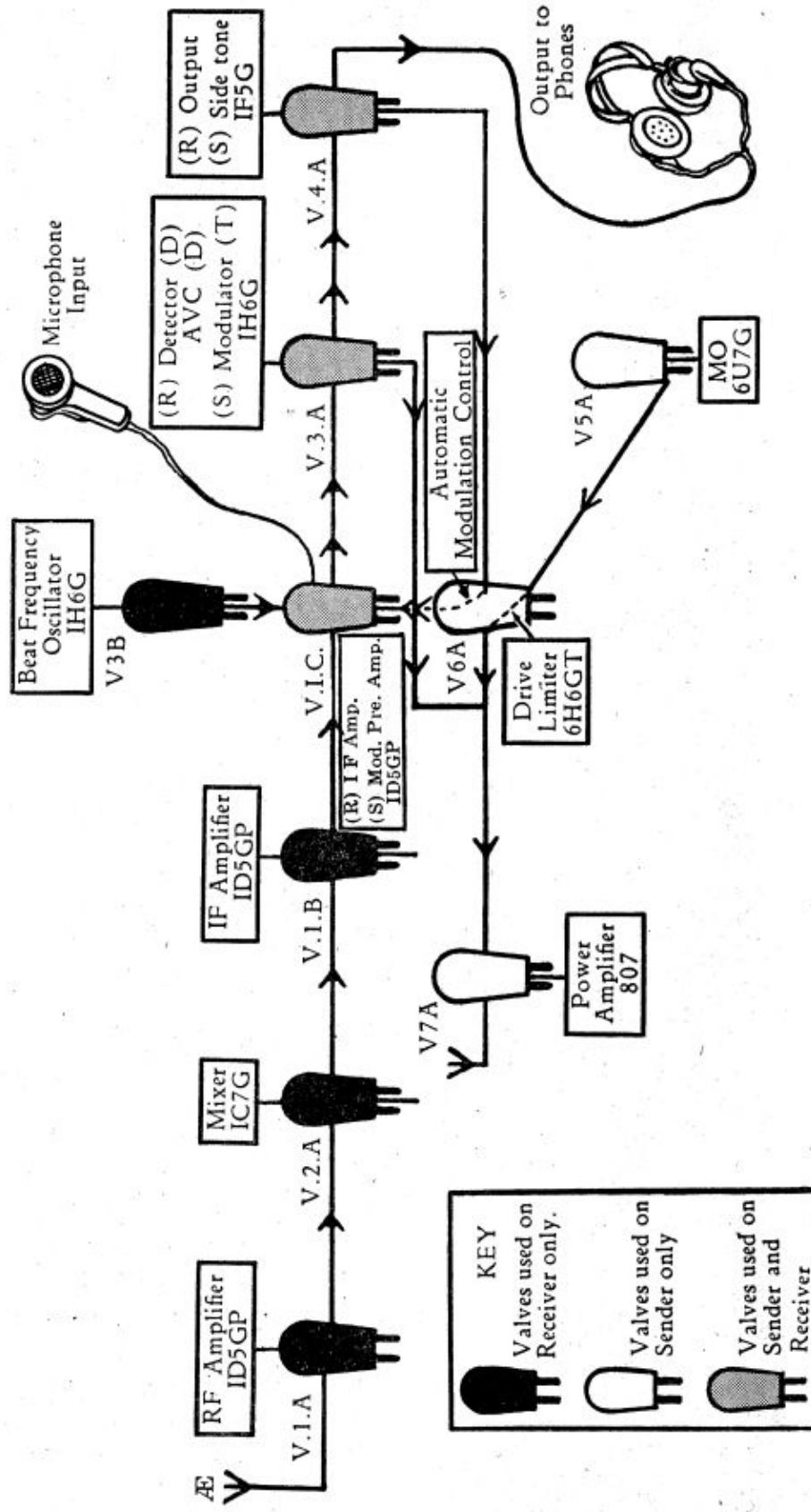
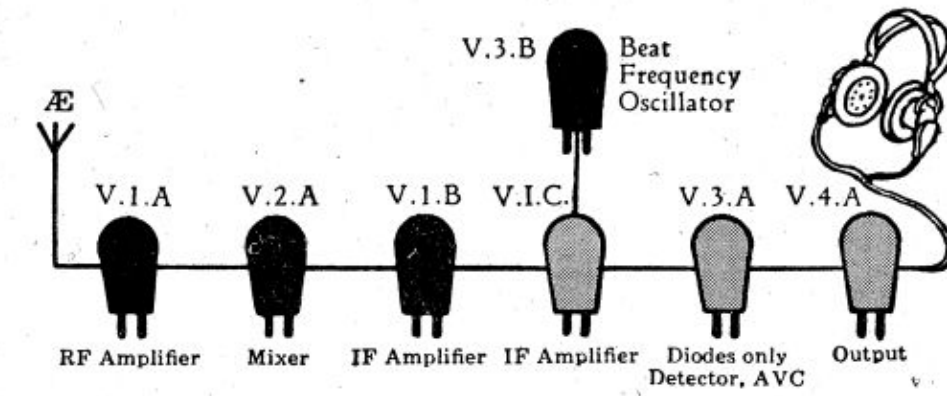


Fig. 3A

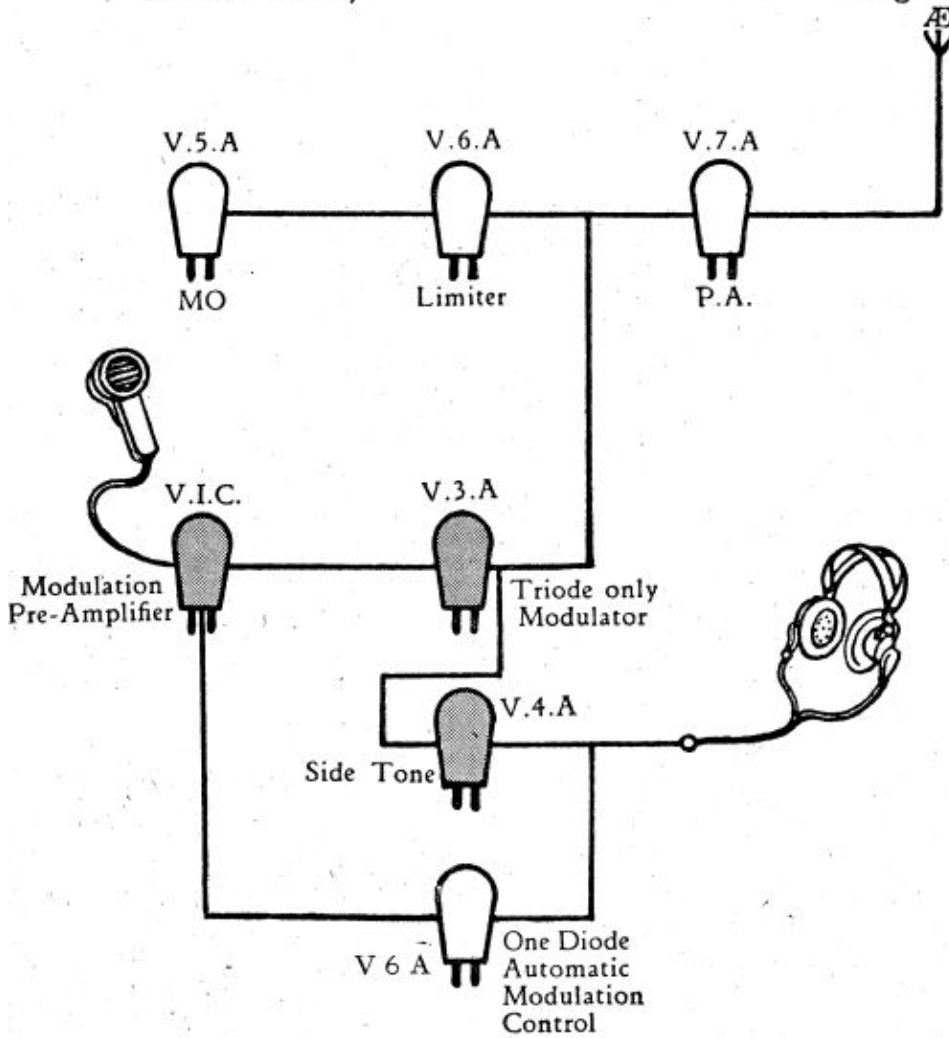
Receiver Only

Fig. 3B



Sender Only

Fig. 3C



Figs. 3B and 3C

(3) *Tuning System.*

The Set is fitted with a 4-gang Condenser (Control marked on panel "FREQUENCY MC/S") which tunes the R.F. circuits of the Sender and Receiver together, so that the sender frequency is at all times quite close to the receiver frequency. On account of small errors in the ganged condenser and other components, slight differences occur between sender and receiver frequencies, and those differences are corrected by the NETTING TRIMMER. The aerial circuit is separately tuned, and is common to both sender and receiver. The aerial is tuned to resonance by the variable inductor marked "AERIAL TUNING" and the coupling to the plate of the power amplifier is adjusted by altering the matching condenser marked "AERIAL COUPLING."

(4) *Aerials.*

The Set is designed for use with quarter-wave, and half-wave wire aerials, and with rod aerials between 8 and 34 ft. in length. Aerials shorter than 8 ft. will not, in general, be tunable except at higher frequencies.

(5) *Systems.*

The Set can be used on C.W., M.C.W. (with keyed modulation), and R/T.

(6) *Break-in Working.*

Send-receive switching is carried out by two relays in the Set; these are controlled by the pressel switch when R/T is being used, and by the key when W/T (C.W. or M.C.W.) is being used. The relays are so arranged that during gaps in the keying the receiver becomes operative, and if signals have not been correctly read the operator at the other end can break in with a message to that effect without waiting for completion of the transmission.

6. The Complete Station.

Details of the stores required for complete stations, Wireless Sets No. 22 (Aust.) are given in Appendix "A" for the three conditions of use described in Section 1. Many of these stores are standard service equipment, and call for no comment, but attention is drawn to the following points:—

(1) *Battery Fuse.*

A rewirable fuse is included in the battery circuit and is fitted in clips at the top of the inner face of the power-unit panel. The reel of spare fuse wire (Item 31) is housed on the top of the chassis inside the case.

(2) *Aerials.*

(a) *The Vehicle Aerial.*—Items 15, 16 and 17 (Appendix "B") is the rod aerial used in the vehicle; it comprises three tapered sections, Nos. 1, 2 and 3, which plug together forming a 12 ft. rod. An aerial base, Item 11, an isolating condenser for protection in the event of the aerial touching an overhead power line, Item 23 or 24, and the two connectors, Item 28 for connection between the isolating

condenser and the aerial, and item 26 for connection between the isolating condenser and the Set, complete the vehicle equipment.

On the move, the 12 ft. rod as described above, is normally carried, but when the vehicle is stationary, a longer aerial can be used.

(b) *The 34 ft. Vertical Aerial.*—This is normally used as a ground-station aerial, but it may be used also from a stationary truck by mounting the earth spike (Item 9), Appendix "B," at the side of the vehicle by means of suitable clamps. The complete equipment required is listed in Appendix "B." Item 25 of Appendix "A" is required to complete the aerial system.

Refer to Figure 1 for method of erection.

(c) *The 16 ft. Vertical Aerial.*—This is included as part of the equipment for (b) above and is used as a ground-station aerial when a long range is not required or the 34 ft. aerial would be too conspicuous.

It is also used when the Set is worked as a man-carried station. Details of the components of this aerial are given in Appendix "B."

For details of erection, see Fig. 1.

(d) *Wire Aerials.*—When the distance to be covered is too great for rod aerials (see Table 1/), it will be necessary to use wire aerials, quarter-wave or half-wave depending on the range required. Up to 500 miles may be obtained on half-wave wire aerials. "Sky" wave radiation will occur when wire aerials are in use, and it is essential that the frequency used is under the maximum usable frequency for that particular time. This frequency is determined from the "Monthly Ionospheric Charts" and while frequency determination is normally beyond the scope of the operator, he should always keep himself informed on existing conditions. Three half-wave aerials are used to cover the frequency range from 2-8 Mc/s. Each aerial provides for two alternate lengths by disconnecting the spade lugs on the insulator, situated near the far end of the aerial. For details refer Table 3.

A quarter-wave aerial is also provided for use when operating over shorter distances, or when the half-wave types cannot be used. For details, see Table 3.

TABLE 3—WIRE AERIALS

<i>Aerial</i>	<i>Length</i>	<i>Use for frequencies</i>
Halfwave No. 1 (Aust.)	188 ft.	2 Mc/s. to 2.6 Mc/s.
Halfwave No. 1 (Aust.)	145 ft.	2.6 Mc/s. to 3.4 Mc/s.
Halfwave No. 2 (Aust.)	109 ft.	3.4 Mc/s. to 4.4 Mc/s.
Halfwave No. 2 (Aust.)	85 ft.	4.4 Mc/s. to 5.6 Mc/s.
Halfwave No. 3 (Aust.)	67 ft.	5.6 Mc/s. to 6.8 Mc/s.
Halfwave No. 3 (Aust.)	56 ft. 6 ins.	6.8 Mc/s. to 8.0 Mc/s.
Quarterwave No. 1 (Aust.)	50 ft.	2 Mc/s. to 4 Mc/s.
Quarterwave No. 1 (Aust.)	25 ft.	4 Mc/s. to 8 Mc/s.

The use of the counterpoise provided will, in many cases, improve radiation on "SEND" and signal/noise ratio on "RECEIVE." This is particularly the case when the Set is working over very dry ground. In wet situations, a simple earth pin will give similar results. For the best results, the radial conductors of the counterpoise should be increased to at least half a wavelength of the frequency in use.

(e) *Test Aerial.*—A test aerial is provided in the set to enable the transmitter to be tested without radiating a signal. It is used by setting the "AE SELECTOR" to "TEST." A log should be kept of the meter readings obtained, with the "METER SWITCH" set to "AERIAL," for various frequencies and the set periodically checked against these figures.

(3) *Telephones and Microphones.*

Item 37 comprises a pair of moving-coil telephones and a moving-coil microphone wired in a common head harness, the microphone handle incorporating a pressel switch. This type of acoustic equipment gives exceptionally good intelligibility, especially under noisy conditions such as exist in a vehicle in motion.

(4) *Immersion Covers.*

Items 54 and 55 are provided so that the Set may be made completely waterproof when required for beach landing, river crossing or similar operation.

(Fig. 4 shows how to fix these covers.)

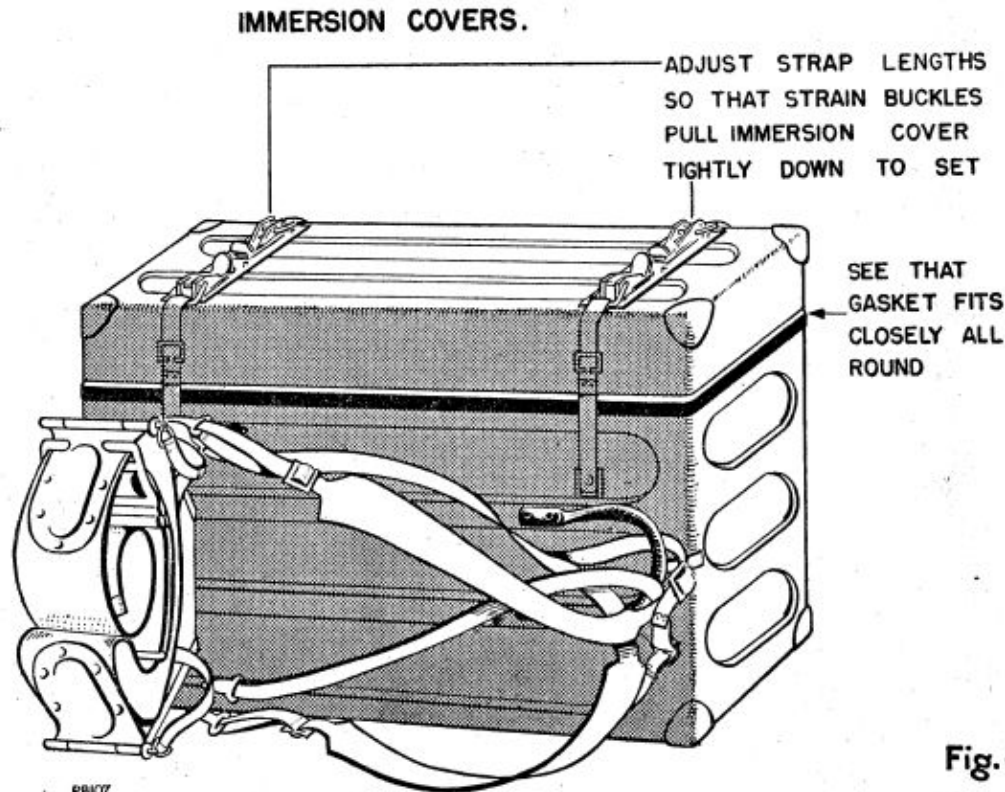


Fig. 4

(5) *Battery for Man-carried Station.*

Item 68, with its carrier (Item 49 or 50) is used with the man-carried station, and if the battery is fully charged should give about 5 hours' normal working.

(6) *Connecting Leads.*

Item 25, Connector, Single No. 10A. Used for Aerial connection on ground station. Should be carried in Satchel, Signals, No. 1A.

Item 26, Connectors, Single, No. 10C. Used for Aerial connections in vehicle, from the aerial terminal on Set to Condenser, X5, 5KV Mk. II and Item 28 from this condenser to the aerial base.

Note.—These Connectors are not removed from the Vehicle when the Set is taken out for use as a ground-station.

Item 66, Connectors, Battery, No. 3. Lead from battery to Power Unit. In the case of the vehicle-station, this lead is not removed from the vehicle when the Set is used as a ground station. A separate lead for ground-station use (Item 29) is carried in Satchel, Signals, No. 1A.

For other Connectors, refer to complete stations for the Wireless Sets No. 22 (Aust.). YELLOW BAND SERIES.

7. Weights and Dimensions.

The weights and dimensions of the major items of equipment are tabulated hereunder in Table 4 :—

TABLE 4—WEIGHTS AND DIMENSIONS

No.	Item	Weights (lb.)	Dimensions		
			Long	Deep	High
1	Sender-receiver	32½	17½"	10½"	8½"
2	Supply Unit (Aust.) No. 1 . .	20	6"	10½"	8½"
	Supply Unit (Aust.) No. 2 . .	16	6"	10½"	8½"
3	Sender and Receiver and Power Unit on Carrier No. 1—				
	With Supply Unit (Aust.) No. 1	64	24¾"	10½"	10½"
	With Supply Unit (Aust.) No. 2	60	24¾"	10½"	10½"

8. Strength and Duties of Detachment.

(1) *Detachment.*

The detachment comprises of three numbers.

No. 1—operator W. & L. (i/c station).

No. 2—operator-driver.

No. 3—driver or operator-driver.

(2) *Erection of Ground Station adjacent to the Vehicle.*

One operator can, if necessary, perform the duties of all three numbers and erect the station single-handed.

No. 1 disconnects the aerial lead, which he will leave behind in the vehicle ; disconnects the power unit, key, phones, and microphones ; dismounts the Set and power unit ; carries the Set to the ground position ; connects the battery, power unit, aerial lead, phones and microphone ; and tunes and nets the Set.

No. 2 carries the aerial, power unit, key, phones, microphones and accessories ; places them as directed by No. 1 ; erects the aerial with the aid of No. 3 ; and hands the aerial lead to No. 1.

No. 3 carries the large (75 A.H.) batteries, places them as directed by No. 1, and helps No. 2 to erect the aerial.

On reconversion to a vehicle station, No. 1 dismantles the ground station, carries the Set to the vehicle, and re-establishes the vehicle station. No. 2 dismantles and repacks the aerial, and carries the aerial, power unit, key, phones, microphones and accessories to the vehicle. No. 3 helps No. 2 to dismantle the aerial, and carries the battery to the vehicle.

(3) *Man-carried Ground Station.*

(i) Table 5 shows how the stores must be packed and carried. Great care must be taken in checking the items to make sure that none shall be left behind.

(ii) The duties of the detachment are as detailed in subsection (2) above, with the additions that :—

No. 1 also fastens down the waterproof cover of the set before leaving the vehicle ;

No. 2 also fastens down the waterproof cover of the power unit ; packs and checks the contents of Satchels, Signals, A and B ; removes the fishing-rod aerial from the carrier bag, and leaves the remainder of the aerial equipment behind in the bag in the vehicle ;

No. 3 immobilizes the vehicle.

TABLE 5.

DISTRIBUTION OF STORES FOR MAN-CARRIED GROUND STATION

Carried by	Parts Carried			How Carried
	Designation	Item No.	Appendix	
No. 1	Set	56, 58 60, 65	A	See Fig. 5A.
No. 2	Antennae Rods, F, Sections 1, 2, and 3	15, 16, 17	B	See Fig. 5B in "Straps Carrying" (Item No. 19).
	Antennae Rods, F, Bases No. 1 Connector, Single No. 10A	18 25	A A	See Fig. 5B In Satchel, Signal, No. 1A.
	Cartridges, Silica gel (Aust.)			
	No. 1	20	A	
	Containers	21	A	
	Caps	22	A	
	Connectors, Twin, No. A6	29	A	
	Key and Plug Assy, No. 9	34	A	
	Lamps, Operators, No. 6A	35	A	
	Leads, counterpoise, No. 2, Mk. II	36	A	
	Microphone and receivers, Headgear Assemblies, No. 1	37	A	
	Signal Equipment Card, No. 44 (Aust.)	1	A	
	Signal Training, Vol. III Aust. Pam. No. 4 ..	39	A	
	Aerials, Half-wave (Aust.)			See Fig. 5B. In Satchel, Signal No. 1B.
	No. 1	12	A	
	Aerials, Half-wave (Aust.)			
	No. 2	13	A	
	Aerials, Half-wave (Aust.)			
	No. 3	14	A	
	Aerials, Quarterwave (Aust.)			
No. 1	16	A		
Insulators, W.T. (Aust.) No. 1D	33	A		
Supply Units (Aust.) ..	2, 3, 57, 59	A	See Fig. 5B.	
No. 1	62			
or				
No. 2	63			
No. 3	Battery, Secy., Portable, 12V, 20 A.H.	68	A	See Fig. 5C. On Carriers Battery (Aust.), Mk. I (Item 49) or Mk. II (Item 50)

CHAPTER 2

INSTRUCTIONS FOR OPERATING

9. Erecting Aerial.

Before you can operate the station, a suitable aerial must be erected. Details to enable you to find the correct stores and method of assembly are given in Section 6 (2) of Chapter 1, and in Fig. 1.

10. Preparing for Work.

- (1) Roll up the waterproof cover and stow at top of set. (Fig. 6.)
- (2) See that headsets are plugged into the sockets of the drop leads on the set panel. (Fig. 7.)
- (3) See that the connector from the Set is connected to the plug on the power supply panel. (Fig. 1.)
- (4) See that the battery lead is connected into its socket on the panel of the power unit and correctly connected to the battery.
- (5) Check that the aerial and earth connections have been made and that the cases of the Set and power unit are connected together. A jumper lead is provided on the power unit and should be connected to the earth terminal on the sender-receiver.
- (6) See that the key plug is inserted in jack and pushed fully home.
- (7) Put the battery switch on supply unit to "ON" and wait at least half a minute for the valves to heat up.

ROLLING UP THE WATERPROOF COVER

1. Lift up Cover

2. Roll up Tightly

3. Fasten Press-Studs

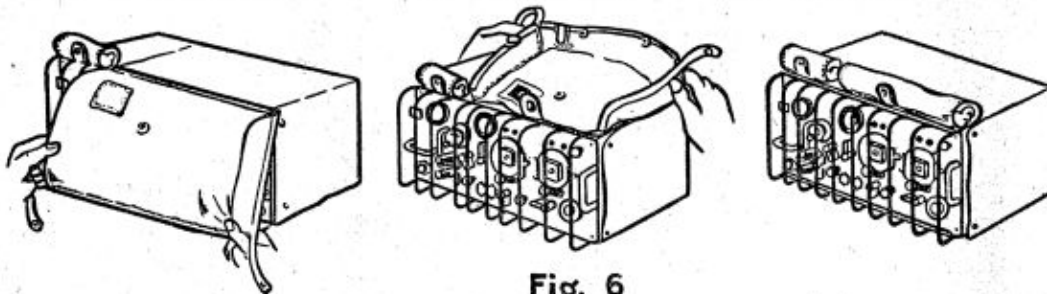


Fig. 6

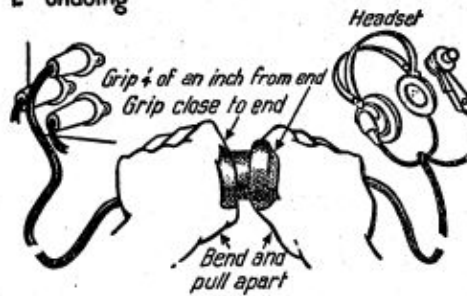
11. Tuning the Sender-Receiver.

Before you can net your Set in a group, you must learn to tune it to the required frequency and to use the flick controls.

Normally, your group will be given two frequencies to work on, the blue or normal and the red or spare frequency. The flick tuning allows you to tune the Set for working on either and to change quickly from one to the other. You will notice beside each of the main tuning controls, a small lever with three positions, "TUNE," "SET," and "FLICK." Figure 8 shows how to set up a tuning dial for two flick frequencies. When this flick lever is turned to "TUNE" the fine tuning knob will turn the tuning dial to any frequency as in a broadcast receiver, and if flick frequencies are not in use, the Set may be tuned in this way. Fig. 8 shows exactly how to tune the sender-receiver.

CONNECTING HEAD-SET LEADS TO DROP LEADS FROM PANEL

1. Undoing



2. Moisten brass ring before plugging in again

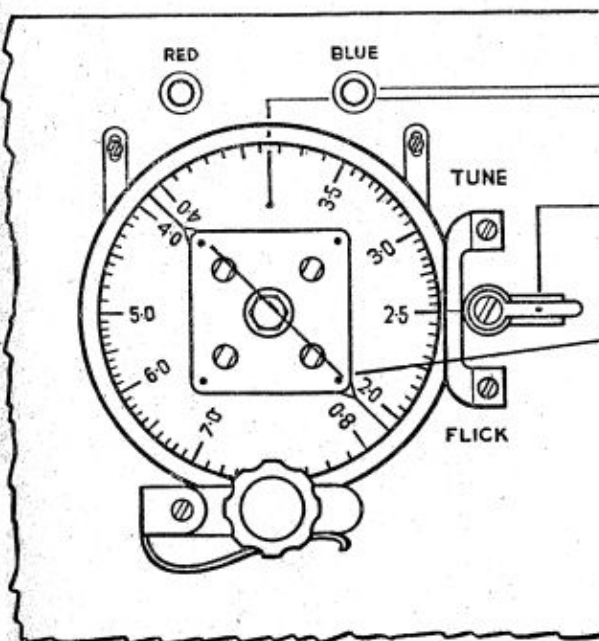


3. Plugging in



Fig. 7

SETTING UP A TUNING DIAL FOR FLICK WORKING



A.2. Turn dial until blue flick engages—white disc shows in blue ring.

A.1. Before Tuning to BLUE Frequency—Turn to 'SET.'

A.3. Slacken off blue screws—half a turn only.

B.4. After netting on BLUE Frequency—Tighten up blue screws—see frontispiece.

C.5. Before Tuning to RED (spare) Frequency—

Turn dial till red flick engages—white disc shows in red ring. Do the rest as for Blue—but using RED screws of course.

Fig. 8

VERY IMPORTANT

12. Netting.

It doesn't matter how good the Wireless Set you are using may be, you will not have good signals on a group of stations unless they are all accurately tuned to the same frequency. Bringing in a group of stations to the same frequency is called "NETTING," and to do it successfully, all the operators in the group must :—

- (1) Know exactly how to tune the Wireless Set quickly and with confidence. This has been described in the last Section.
- (2) Understand and carry out the netting drill accurately, remembering that the control station is always right and his instructions must always be obeyed immediately.

Netting is always done before a force goes into action. The enemy must not hear you netting if it can be helped, since if he does :—

- (1) He will know your frequency and listen to your instructions ; or jam them.
- (2) He may find out, roughly, where you are by direction finding.

Netting is done in three ways :—

- (1) Netting vehicle stations in harbour.
Used whenever it is possible, since the enemy is not likely to hear you.
- (2) Netting by Wavemeter.
Used when it is not possible to bring all the Sets together and it is vital that the enemy should not hear the netting. Also it is used by the control station whenever a Wavemeter is available.
- (3) Netting at a distance.
Used when (1) and (2) are impossible.

Before opening up, you will have been told the frequency or frequencies, call signs, and code names for the group, the time at which the netting is to begin, and the details of the netting signals.

Switch your Set on fifteen minutes before netting is due to start (because the Set takes a quarter of an hour to settle down) and spend the time making tests for the Daily Maintenance (*see* page 36).

There are two separate operations to be carried out before netting is completed. They are :—

- (1) Setting the control station to the ordered frequency and adjusting this set so that its Receiver Frequency and Transmitter Frequency are exactly the same.
- (2) Bringing the out Stations to the same frequency as the Control Station, both on "Transmit and Receive."

NOTE : These operations must be carried out, for one to one working as well as for group working.

A. NETTING AT A DISTANCE.

1. Tuning the Control Station Set :—

1.1. The Control Station's frequency may be set by either of two methods :—

- (a) By using a wavemeter (this method gives a high degree of accuracy and should be used whenever possible).
- (b) By relying on the calibration of the "FREQUENCY MC/S" dial of the set. (Often this dial will not be perfectly accurate, but the Electrician Signals who checks your set will be able to tell you the errors which exist, so you can then make allowance for them.)

(a) USING A WAVEMETER :—

- (i) Prepare the set for netting as shown in Fig. 9.
- (ii) Place the Wavemeter near the aerial lead, switch on, and adjust accurately to the ordered frequency.
- (iii) Turn the "FREQUENCY MC/S" dial of the set to the signal omitted by the Wavemeter, and tune carefully until maximum dip is indicated on the meter of the set.
- (iv) Depress the "NET" button and adjust the "NETTING TRIMMER" until ZERO BEAT is obtained in the set Receiver's headgear. (See page 30.) Lock the "NETTING TRIMMER" and listen while doing so to ensure that zero beat is not lost. Then release the "NET" button. Log the setting of "NETTING TRIMMER" on the calibration tablet.
- (v) Set "FLICK" as shown in Fig. 8 and lock the "FREQUENCY MC/S" dial screws of the correct colour.
- (vi) Turn the "FREQUENCY MC/S" dial off the ordered frequency and then re-engage the flick, checking that the meter reading and Zero Beat are the same as before. If it is not, repeat the operations (iii)–(vi).
- (vii) Repeat the above operations for RED FREQUENCY if it is used.

(b) Without a Wavemeter :—

- (i) Prepare the set for netting (as shown in Fig. 9), setting "FREQUENCY MC/S" dial as accurately as possible to the ordered frequency, making allowance for any known inaccuracy of this control.
- (ii) Depress the "NET" button and adjust the "NETTING TRIMMER" until maximum dip is obtained on the set meter. Lock the "NETTING TRIMMER" and check that doing so does not alter the meter reading. Then release the "NET" button. Log the setting of "NETTING TRIMMER" on the calibration tablet.
- (iii) Set "FLICK" as shown in Fig. 8, and lock the "FREQUENCY MC/S" dial screws of the correct colour.

- (iv) Turn the "FREQUENCY MC/S" dial off the ordered frequency and then re-engage flick, checking that the meter reading is the same as before. If it is not, repeat the operations (i)-(iv).
- (v) Repeat the above operations for RED FREQUENCY if it is used.

NOTE: AFTER MAKING THE ABOVE ADJUSTMENTS, BOTH THE "FREQUENCY MC/S" DIAL AND THE "NETTING TRIMMER" MUST BE LEFT STRICTLY ALONE UNLESS A COMPLETE RETUNING IS DONE.

NOTE: After making the above adjustments, both the "FREQUENCY MC/S" dial and the "NETTING TRIMMER" must be left strictly alone unless a complete retuning is done.

1.2. The adjustments to the aerial circuits are made as follows:—

- (a) Set the "Aerial Coupling" dial to the figure specified in Table 6, for the aerial and frequency in use.
- (b) Turn "MCW, CW, RT" switch to CW and turn the "METER SWITCH" to PA. Hold key down.
- (c) Adjust the "AERIAL TUNING" control to maximum dip on set meter. The meter should then read 6.5 on the 15-volt scale; if it is above or below this reading, change the setting of the "AERIAL COUPLING" dial slightly, and readjust the "AERIAL TUNING" control once more for maximum meter dip. Continue making these two adjustments until the reading 6.5 is obtained.
- (d) Set "FLICK" on "AERIAL COUPLING" dial, as shown in Fig. 8, and lock the "AERIAL COUPLING" dial screws of the correct colour.
- (e) Turn the "Aerial Coupling" dial away from its setting and then re-engage flick, checking that the meter reading is the same as before. If it is not, readjust this control again and repeat operation (d) and (e).
- (f) Log the setting of the "AERIAL TUNING" control on the calibrated tablet.
- (g) Repeat the above operations for RED FREQUENCY if it is used.

1.3. NETTING THE GROUP:—

- (a) Control will transmit, on "Blue Frequency"—
 - (i) A short tuning call.
 - (ii) A netting call, sufficiently long for the out stations to complete the netting of their sets, as detailed in para. 1.3 (b)
 - (iii) A group call asking for signal strength reports. The "NET" button is pressed as each station answers, and so the netting of each station is checked. ZERO BEAT should be obtained but a low pitched hum is

permissible. A higher pitched note than this indicates that the station is badly netted and instruction will be given for that station to re-net.

- (iv) (i), (ii) and (iii) on RED FREQUENCY if used.
- (b) Prior to the time ordered for netting all OUT STATIONS will prepare their sets for netting as shown in Fig. 9, and shall carry out the following operations while netting :—
- (i) With "FREQUENCY MC/S" dial, search boldly for the control station's signal, and then adjust finely until maximum dip is obtained on the set meter. (This dip will only be noticeable if the signal is moderately strong. If it is not apparent, the dial must be adjusted until the best signal is received.)
 - (ii) Adjust the "AERIAL TUNING" control until maximum dip is obtained on the set meter, or if the signal is not sufficiently strong, until the best signal is received. Lock this control and log its setting on the calibration tablet. (This operation automatically adjusts the aerial circuit of the transmitter as well as the receiver.)
 - (iii) Press the "NET" button, and adjust the "NETTING TRIMMER" until ZERO BEAT is obtained. Lock the "NETTING TRIMMER" and check that in doing so ZERO BEAT is not lost. Log the reading of "NETTING TRIMMER" on the calibration tablet.
 - (iv) Set "FLICK" as shown in Fig. 8 and lock the "FREQUENCY MC/S" dial screws of the correct colour.
 - (v) Turn the "FREQUENCY MC/S" dial off the ordered frequency and then re-engage flick, checking that ZERO BEAT is still obtained. If it is not, repeat the operations 1.3 (b) (i)–(v).
 - (vi) Repeat the above operations for RED FREQUENCY if ordered by Control Station.
 - (vii) Answer group call when instructed by control station.

6. NETTING VEHICLE STATIONS IN HARBOUR WITH AERIALS DETUNED.

NOTE.—Detuning an aerial means adjusting the set so that the signals transmitted are too weak to be picked up far from the harbour, and it is done by setting the "AERIAL COUPLING" dial to 100.

1. Tuning the Control Station Set :—

1.1. The control station set is adjusted by the same procedure as used when "netting at a distance" except that the aerial tuning adjustments must be made later.

1.2. NETTING THE GROUP :—

(a) CONTROL STATION WILL :—

- (i) Set "AERIAL TUNING" control, to the figure specified in Table 6, for the frequency and aerial in use.

- (ii) Detune the aerial circuit by setting the "AERIAL COUPLING" dial to 100.
 - (iii) Send a short tuning call on the BLUE FREQUENCY to enable identification by OUT stations.
 - (iv) Send a netting call, sufficiently long for OUT stations to complete the netting of their sets, as in para. A1.3 (b).
 - (v) Send a group call asking for signal strength reports. The "NET" button is pressed as each station answers and so the netting of each station is checked. ZERO BEAT should be obtained but a low pitched hum is permissible. A higher pitched note than this indicates that this station is badly netted, and instruction will be given for that station to re-net.
 - (vi) Repeat the operation (i)-(v) for RED FREQUENCY.
- (b) Out Stations shall follow the same netting procedure as when "Netting at a Distance," except that, before answering the group call from control station they shall :—
Detune the aerial circuits by netting "AERIAL COUPLING" dial to 100.
- (c) The Aerial circuit of Control Station has yet to be adjusted, and this shall be done as follows :—
- (i) Call one Out Station and request a tuning call.
 - (ii) With "METER SWITCH" to "AVC" adjust the "AERIAL COUPLING" dial until maximum dip is obtained on the set meter.
 - (iii) Set "FLICK" of this dial (see Fig. 8) and check its accuracy by turning the dial away from its setting and then re-engaging flick. Check that the meter reading has not altered. If it has, repeat operations (i)-(iii).
 - (iv) Repeat the above operations for RED FREQUENCY if it is used.
 - (v) Detune the aerial circuit by setting the "AERIAL COUPLING" dial to 100.

C. NETTING BY WAVEMETER :—

In this procedure all sets, including Control Station, are adjusted by using one wavemeter passed from set to set, without the stations of the group emitting any signal.

Netting the Group :—

All sets are adjusted alike as below :—

- (a) Prepare net for netting (see Fig. 9), on BLUE FREQUENCY.
- (b) Place Wavemeter near aerial lead, switch on, and set accurately to ordered frequency.
- (c) Turn "FREQUENCY MC/S" dial to emitted signal of Wavemeter and tune until maximum dip is indicated on the set meter.
- (d) Press "NET" button and tune "NETTING TRIMMER" until ZERO BEAT is obtained in the set receiver's headgear

NETTING DRILL PREPARE SET FOR NETTING

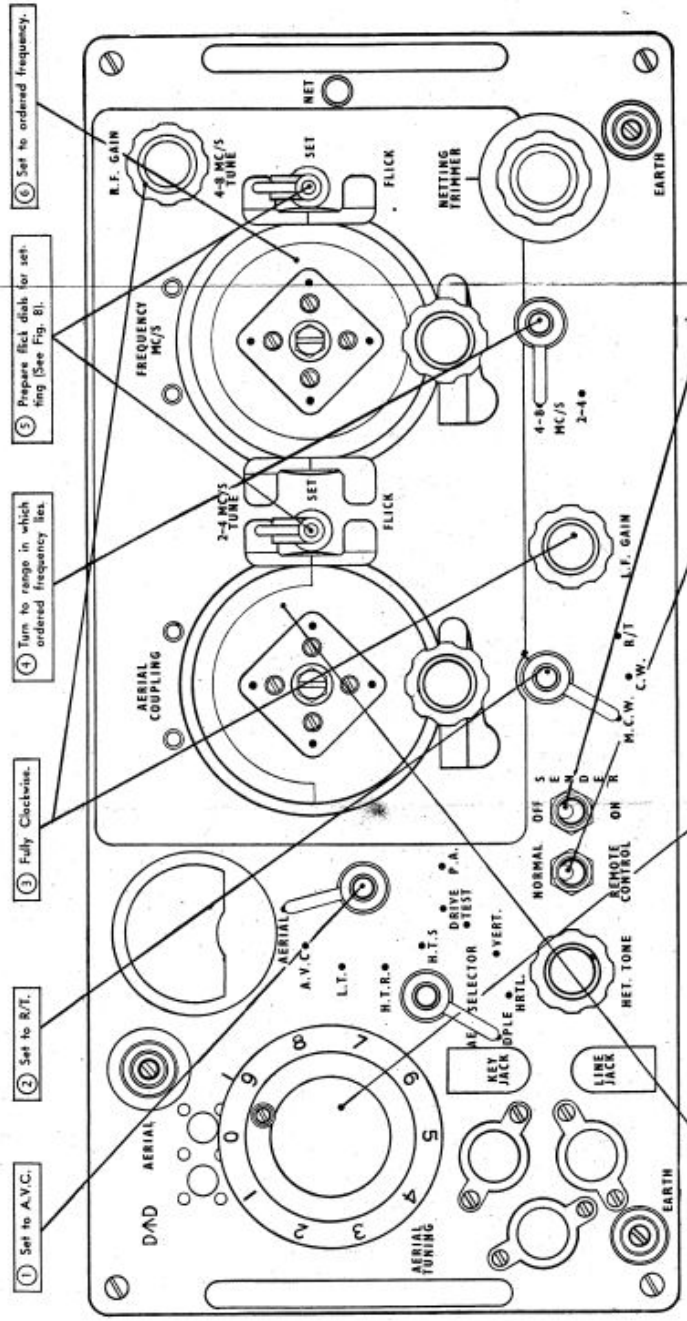


Fig. 9

OUT STATIONS PROCEDURE FOR NETTING IN HARBOUR

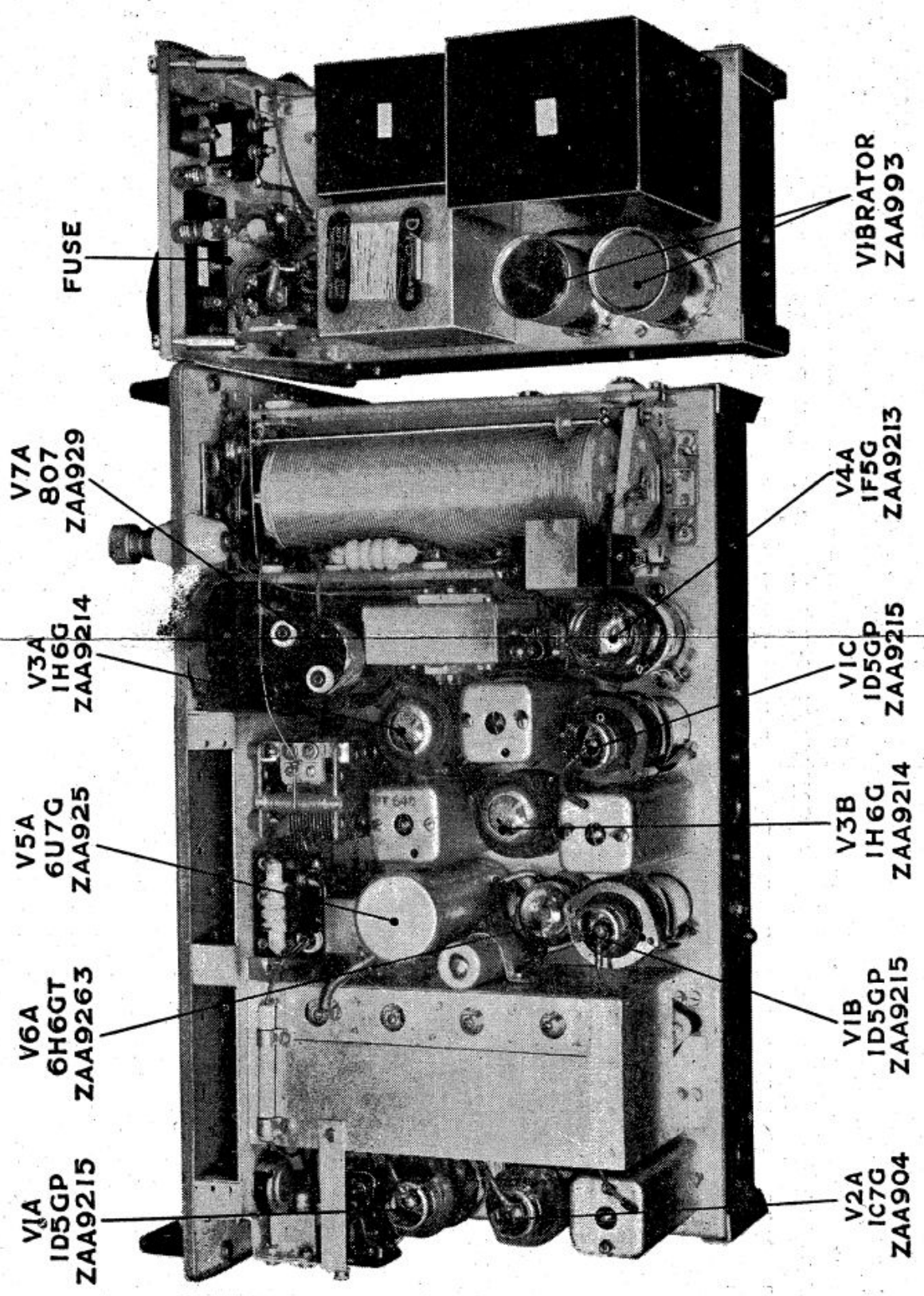
USE THE NUMBERS HERE FOR "NETTING BY NUMBERS" WHEN TRAINING:-

<p>1 Search boldly for Signal; tune for maximum dip on meter.</p>	<p>5 Turn to "Flick."</p>	<p>9 Adjust "Aerial Tuning" for maximum dip on meter.</p>
<p>2 Press "Net." Tune "Netting Trimmer" for Zero Beat.</p>	<p>6 Turn Dial away and re-engage "Flick" carefully (Fig. 8).</p>	<p>10 Lock "Aerial Tuning."</p>
<p>3 Lock "Netting Trimmer" and check that Zero Beat is not lost.</p>	<p>7 Check if Netting is still correct; if not do 1-6 again.</p>	<p>11 Log "Aerial Tuning" reading and "Netting Trimmer" reading on tablet.</p>
<p>4 Lock "Frequency MC/S" screws of correct colour.</p>	<p>8 Set "Aerial Coupling" to reading shown in Table 6 for the Frequency and Aerial in use.</p>	<p>12 Detune the Aerial Circuit by setting "Aerial Coupling" to 100.</p>

SETTING BY MIN BAIRS



CHANGING VALVES, ETC.



V1A
ID5GP
ZAA9215

V6A
6H6GT
ZAA9263

V5A
6U7G
ZAA925

V3A
IH6G
ZAA9214

V7A
807
ZAA929

FUSE

V2A
IC7G
ZAA904

VIB
ID5GP
ZAA9215

V3B
IH6G
ZAA9214

VIC
ID5GP
ZAA9215

V4A
IF5G
ZAA9213

VIBRATOR
ZAA993

FIG 12

- (e) Lock "NETTING TRIMMER" and check that ZERO BEAT is not lost. Log the setting of "NETTING TRIMMER" on the calibration tablet.
- (f) Lock "FREQUENCY MC/S" screws of correct colour (see Fig. 8).
- (g) Turn to "FLICK".
- (h) Re-engage "FLICK" carefully and check that ZERO BEAT is still obtained. If not repeat (c)–(h).
- (i) Set "AERIAL COUPLING" to reading specified for the Frequency and Aerial in use, in Table 6, and adjust "AERIAL TUNING" until maximum dip is indicated on set meter. Lock "AERIAL TUNING" and log its reading on the calibration tablet.
- (j) Repeat (b)–(i) for RED FREQUENCY if in use.

13. Miscellaneous Hints.

- (1) *The NETTING TRIMMER* must always be clamped after netting and flick-setting have been carried out. When a spare frequency is used, the setting of the trimmer for it will usually differ from the setting for the normal frequency. The two settings for normal and spare frequencies should be noted, so that readjustment can be quickly made when flick change is called for.
- (2) *Checking Netting, Re-netting.*—For various reasons, such as the heat of the day, or the state of the battery, the frequency of the Set will vary slightly, and this will put you off net. A good operator knows immediately when he is tending to go off net by a rise in the pitch of the control's voice, which also becomes slightly distorted, and by a rise in the pitch of the background hiss. Bad quality, too, usually means bad netting. You must correct this; so wait till you hear Control sending to another station, and press your "NET" button. You should hear nothing, or perhaps a grunt; if you hear a high-pitched whistle, it means that you are going off net, and you must re-net. Do this exactly as in "Netting at a Distance," but control **MUST** be sending all the time while you are doing it.
- (3) *Use of the "TUNE" Position of the Flick Lever.*—If your Set goes off net very frequently, set the flick levers to "TUNE" when you are checking net. You can now adjust both dials with the fine adjuster without loosening the flick screws each time. But remember that if you turn back to "FLICK" or "SET" your tuning dial will be back at its old setting and not at its corrected setting. The first opportunity should be taken to re-set the flick device, but this should *not* be attempted unless you are stationary, and unless control is making a long transmission which does not concern you. The flick having been re-set, the levers should be left as "FLICK" until the Set is next noticed to be going off frequency.

TABLE 6.

SETTINGS OF AERIAL SELECTOR, AERIAL COUPLING AND AERIAL TUNING.

AERIAL	TEST	VERT. 12 ft. (TRUCK STA.)			VERT. 34 ft. (GND. STA.)				
		Aerial	Aerial	Aerial	Selector	Coupling	Tuning		
Freq. Mc/s.	Selector	Coupling	Tuning	Selector	Coupling	Tuning	Selector	Coupling	Tuning
2.0	Test	89	17.2	Vert.	92	66.3	Vert.	65	62.6
2.5	Test	82	14.4	Vert.	86	47.9	Vert.	60	45.0
3.0	Test	74	12.8	Vert.	80	36.7	Vert.	54	34.6
3.5	Test	70	11.4	Vert.	78	28.7	Vert.	48	27.9
4.0	Test	64	10.5	Vert.	74	24.2	Vert.	40	23.5
4.5	Test	56	10.0	Vert.	67	20.9	Vert.	25	21.1
5.0	Test	49	9.5	Vert.	63	18.2	Vert.	11	18.8
5.5	Test	45	8.9	Vert.	58	16.1	Horz.	44	11.2
6.0	Test	41	8.1	Vert.	56	14.3	Horz.	28	10.9
6.5	Test	35	7.6	Vert.	50	12.9	Di-pole	38	8.5
7.0	Test	27	7.3	Vert.	43	11.9	Di-pole	20	8.8
7.5	Test	17	6.9	Vert.	35	10.9	Di-pole	26	7.5
8.0	Test	6	6.5	Vert.	25	10.1	Di-pole	35	6.4

AERIAL : HORIZONTAL

Freq. Mc/s.	Aerials : Halfwave (Aust.)	Length	Aerial		
			Selector	Coupling	Tuning
2.3	No. 1	188 ft.	Horz.	73	40.1
3.0	No. 1	145 ft.	Horz.	82	20.8
3.9	No. 2	109 ft.	Horz.	79	14.4
5.0	No. 2	85 ft.	Horz.	69	11.3
6.2	No. 3	67 ft.	Horz.	42	10.9
7.3	No. 3	56 ft. 6 ins.	Horz.	30	9.2

QUARTERWAVE (AUST.)
AERIAL : No. 1 50-ft.

QUARTERWAVE (AUST.)
No. 1 25-ft.

Freq. Mc/s.	Aerial			Freq. Mc/s.	Aerial		
	Selector	Coupling	Tuning		Selector	Coupling	Tuning
2.0	Vert.	62	65.4	4.0	Vert.	40	29.6
				4.5	Vert.	35	24.8
2.5	Vert.	56	46.7	5.0	Vert.	27	21.7
				5.5	Vert.	18	18.0
3.0	Vert.	48	35.2	6.0	Vert.	10	16.7
				6.5	Horz.	60	8.0
3.5	Vert.	40	28.1	7.0	Horz.	53	7.6
				7.5	Horz.	40	7.4
4.0	Vert.	30	23.0	8.0	Horz.	20	7.3

- (4) *The "AERIAL TUNING" and "AERIAL COUPLING" Controls.*—Set the "AERIAL TUNING" and "AERIAL COUPLING" controls to the approximate values indicated in Table 6, according to the type of aerial in use. Turn the function Switch to "C.W.," the Meter Switch to "P.A.," Sender Switch to "ON," and press the Key.

Readjust the "AERIAL TUNING" for maximum dip on meter. This should read 65 m/a (this corresponds to 6.5 volts on the 15-volt scale on the Meter).

- (a) If this reading is lower than 65 m/a, turn the "AERIAL COUPLING" dial to a slightly higher reading and readjust "AERIAL TUNING" for maximum dip.
- (b) If the reading is higher than 65 m/a, turn the "AERIAL COUPLING" dial to a slightly lower reading and adjust again the "AERIAL TUNING" for maximum dip.

Repeat either of the above operations until the Meter is reading 65 m/a when "AERIAL TUNING" is adjusted for minimum reading on meter. This gives the aerial adjustment. When normal and spare frequencies are being set up, the "Æ TUNING" setting for each flick position should be noted to enable adjustment to be made quickly.

- (5) *System Switching.*—The Set can be used for three kinds of working :—

R/T—Radio Telephony (that is, speech).

C.W.—Continuous wave.

M.C.W.—Modulated continuous wave.

C.W. and M.C.W. are two kinds of Morse working. On C.W., pressing the Morse key sends out a signal which can only be heard when the receiving station is switched to C.W. On M.C.W., pressing the Key has the same effect as whistling into the microphone in R/T; that is to say, a signal is sent out which can be heard even if the receiving station is switched to R/T.

Advantages of M.C.W. are :—

- (a) If there is interference on your frequency from other groups using C.W., you may get less interference if you use M.C.W.

Advantages of C.W. are :—

- (a) You get greater range.

- (b) If there is interference on your frequency from other groups using R/T or M.C.W., you may get less interference if you use C.W.

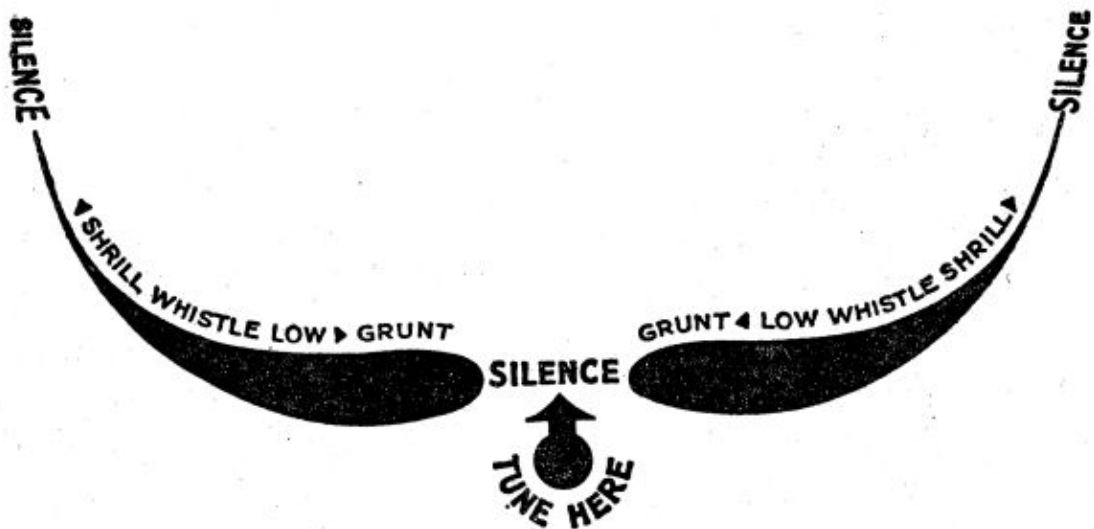
- (6) *Send-receive switching* is effected by relays which are operated on R/T by the pressel switch on the microphone handle, and on C.W. and M.C.W. by the Morse key. This method of keying permits break-in working. This is, the receiver is

operative during gaps in the sending, so that if the receiving operator requires to interrupt the sending operator he can do so by keying, whereupon his signals will be heard by the sending operator every time the latter allows his key to remain raised for more than about half a second.

- (7) *While working, if signals become worse and worse, or fail altogether, keep calm. You can't do much, but you can—*
- (a) Check the netting. If your Set is going off net, re-net it on the Control station. (See page 27.)
 - (b) Check your "ends"—batteries, headset, and aerial and their connections. Check the meter reading on \mathcal{A} . Is there sidetone?
 - (c) Call a nearer station to prove your own Set O.K.
 - (d) If there is still no answer, and if you are using a rod aerial, put up an additional aerial section and call again, resetting the "AERIAL TUNING" and "AERIAL COUPLING" for maximum radiation.

Fig. 10.

FINDING THE SILENT POINT



14. Removal of Set from Vehicle and Erection of Ground Station.

See Chapter 1, Section 8. The Set should be placed if possible, on a box or similar support. If it is necessary to operate in mud, the Set and power unit may stand panel upwards.

15. Economy of Battery Drain.

If you have to listen for signals for a long period, but need not be ready to send without having been warned, turn the Sender "ON/OFF" Switch to the "OFF" position, as this will save your battery and enable you to work for a longer period without having to change it.

CHAPTER 3

MAINTENANCE AND TESTING

16. General Remarks.

This Chapter is written not to enable you to correct every fault which may occur in the Wireless Set, but to help you to keep the Set working efficiently and to detect trouble before it becomes serious. There are three routines which you must be able to carry out quickly and efficiently. You must :—

- (1) Test the Set to see that every part of it is working. Do this daily, whether or not the Set is going to be used. The Tests are described under Daily Maintenance (page 32).
- (2) Go over all external parts of the Set and its equipment, clean and check that Controls run smoothly, and look for parts which are beginning to wear out or come undone. You will often be able to find trouble before it has become serious, and prevent a breakdown which might occur when the Set is in use. The paragraph on Weekly Maintenance (page 32) tells you how to do this.
- (3) Repair the more common faults which may occur in the field. Some rules to help you in this are given under "Running Repairs" on page 34.

The VITAL thing is that you should find out and report anything wrong AS SOON AS POSSIBLE so that the instrument mechanics can repair it BEFORE THE BATTLE; halfway through is TOO LATE; SO IT DEPENDS ON YOU.

17. Connecting up the Set and Changing Parts.

Normally the Set will be ready for working when you first meet it. But you may have to disconnect various parts for cleaning and replacement. The kit for your Set includes spares for most removable parts, so here is how to do it :—

- (1) Connect the Power Supply (*see Fig. 1*)
 - (2) Connect the Aerial feeder (*see Fig. 1*)
- } DO NOT disconnect
} unless removing Set
} or Power Unit.
- (3) Connect up the head sets (*see Fig. 1*); the snatch plugs are made so that they will come undone if you move away from the Set while wearing your head Set.
 - (4) Rewiring the L.T. fuse (*see Fig. 12.*)
 - (5) Changing the indicator bulb (*see Fig. 1.*)
 - (6) Changing the aerial pigtail. Remove the aerial base by unscrewing the six fixing bolts, then fit new pigtail as shown in Fig. 13. Get the Electrician, Signals, to do this, if possible.
 - (7) Taking off the grille (*see Fig. 14.*)
 - (8) Taking the Set and Power Unit out of their cases (*see Fig. 11.*) Never take the Set out, except to change the valves. Never take the Power Unit out except to rewire the fuse, change the vibrator, or lamps.

- (9) **Changing Valves.** Valves need never be touched unless the Set breaks down. If this happens, you may have to change a valve or two. (See "Running Repairs," page 34, which will tell you which valves to change.) To take out, or put in a valve, take the Set from its case. A diagram on the rear of the Set case shows where each valve goes. Leave the changing of valves to the Electrician, Signals, wherever possible.

18. Daily Maintenance.

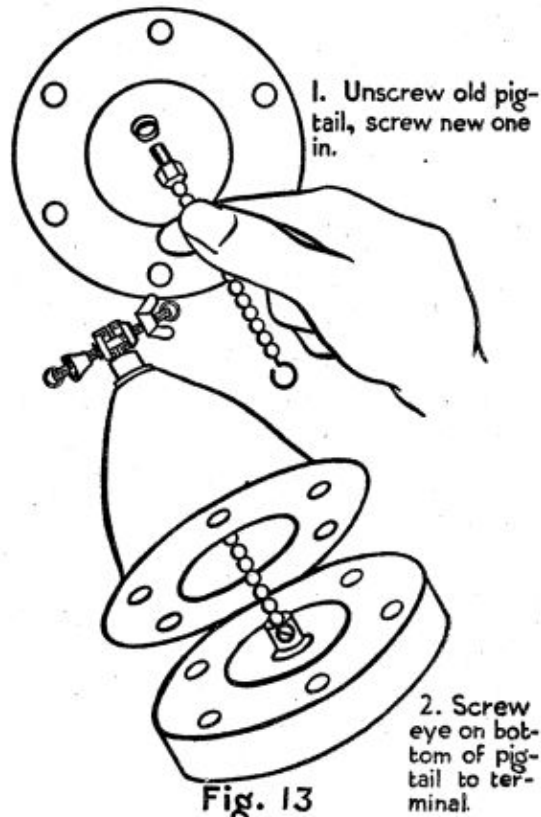
As has already been explained, the Set must be tested daily, whether it is going to be used or not. Table 7 shows how to test it. Tests must be done in the order given; for instance, Test 10 will not work unless you have previously done Test 4.

19. Weekly Maintenance.

The reasons for this are given in Section 16 (2) of this Chapter. Every week, without waiting to be told, you should:—

- (a) Do your Daily Maintenance tests for the day.
- (b) Clean the outside of the Set, Power Supply Unit, and Carrier, with cloth to take off dirt and grease. Do not use water, Brasso, petrol, or anything for polishing.
- (c) Overhaul the rod aerial. (See Fig. 15.)
- (d) Try all controls and see that they are not jamming, nor turning so easily that their settings would alter through the shaking of the vehicle. See that all the knobs are tightly secured to their spindles. If they are not, get the Electrician, Signals, to tighten the grub screws which hold them on.

CHANGING AERIAL PIGTAIL



- (e) Meter readings, Check the Meter readings and enter in Appendix "D."
- (f) Check kit. See that your spare parts, spare valves, and spare head sets, are complete. There are lists on the lids of the spare-valves case and spare-parts case.

FRONT VIEW OF SET SHOWING DETACHABLE PARTS AND CONNECTIONS.

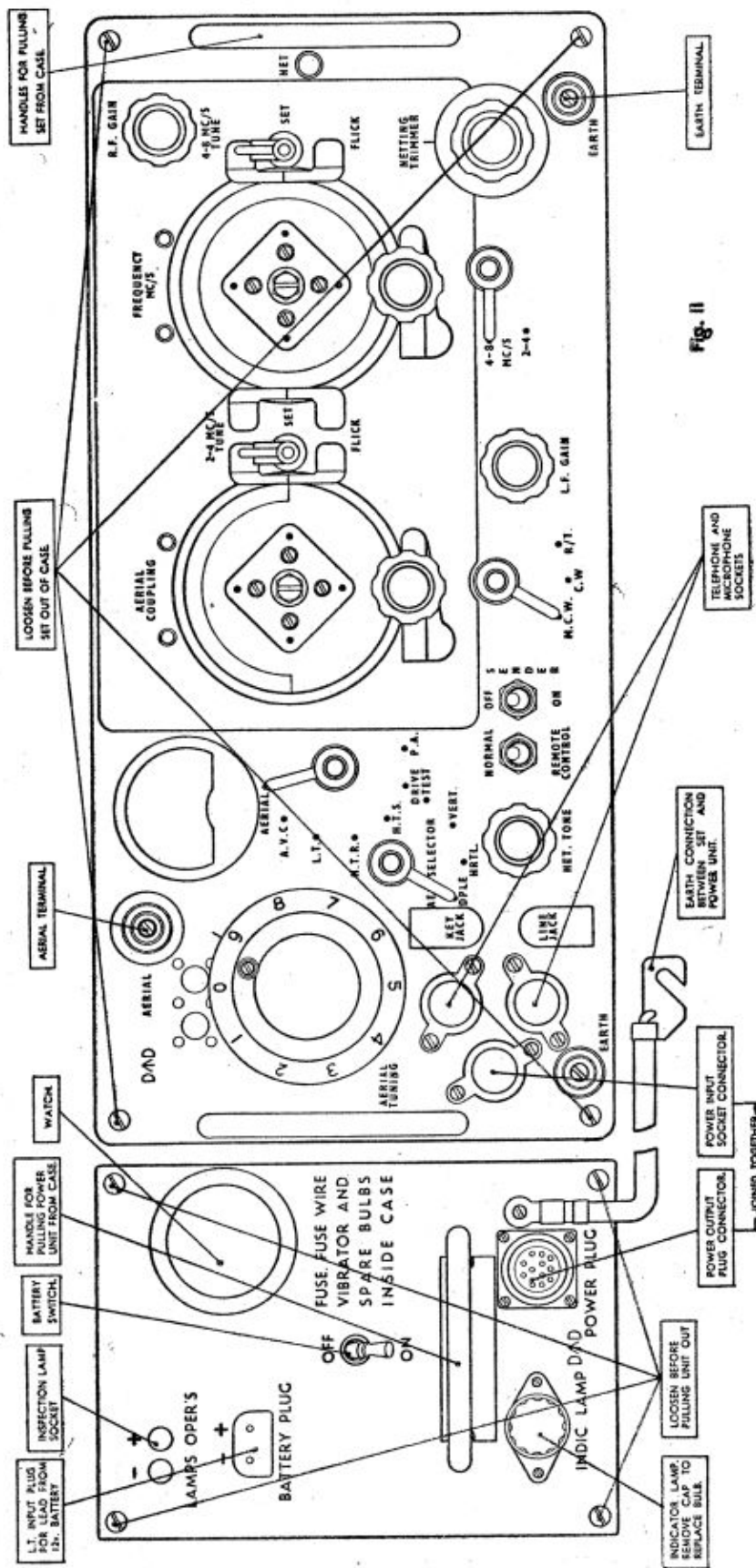


Fig. II

(g) Vertical Aerial. Check that the contents of the aerial bag are complete, and in good order.

(h) Report :—

(i) Any faults which you have found and cannot put right.

(ii) Any pieces which are missing.

Your MAINTENANCE is USELESS unless you do this AT ONCE.

20. Monthly Maintenance.

This is NOT your job. Once a month an Electrician, Signals, will inspect your Set thoroughly and will overhaul it where necessary.

21. Running Repairs.

If the Set, or any part of it, works badly, or stops working, try the cure for the particular failure as shown in Table 8, page 38. When replacing valves, work on the lines of these two examples :—

(1) (Failure No. 9—Receiver O.K. ; Sender aerial current and drive very low, but netting whistle O.K. ; due to V6A being faulty.) Put in new V7A. Test Set—no result, put in new V6A. Test Set—Set working, therefore old V6A faulty ; put old V7A back. Test Set—Set still working, therefore old V7A is sound.

(2) (Failure No. 5—Receiver dead and Sender O.K. ; due to VIC being faulty.) Put in new VIA. Test Set—no result ; put in new V2A. Test Set—no result ; put back old VIA and V2A ; put in new V1B. Test Set, no result ; put in VIC. Test Set—Set works ; put old V1B back. Test Set—Set still works ; therefore old V1B is sound, old VIC is faulty.

Do not put faulty valves back in the spare-valves case. Exchange for sound ones as soon as possible, and put the sound ones back in the case.

TAKING OFF THE GRILLE

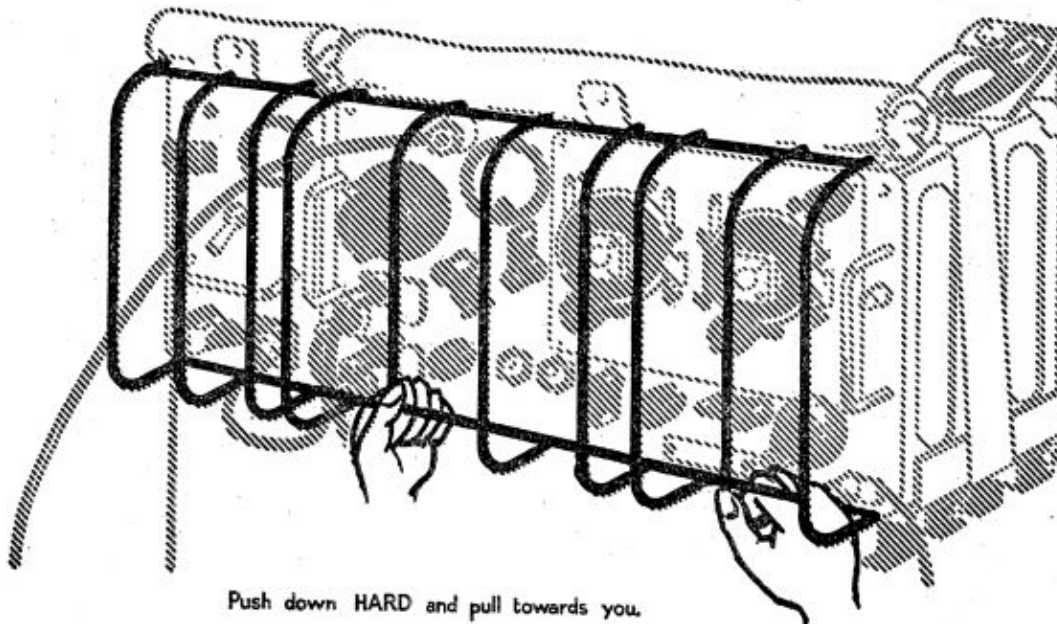


Fig. 14

AERIAL MAINTENANCE

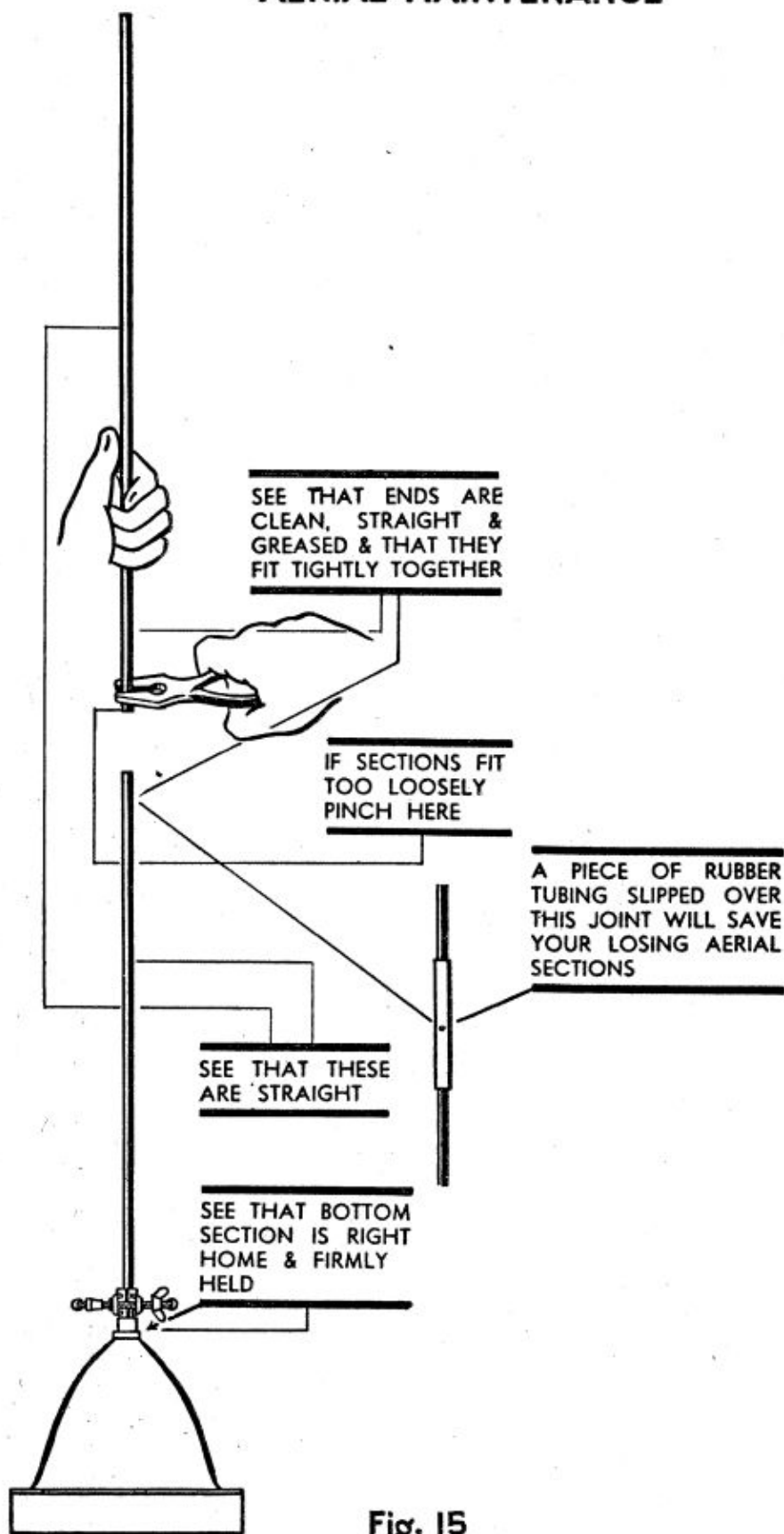


Fig. 15

TABLE 7—DAILY TESTS.

<i>Part tested</i>	<i>No.</i>	<i>Test</i>	<i>What should happen</i>	<i>What should not happen</i>	<i>What is likely to be wrong</i>	<i>What to do about it</i>					
Power Supply.	1	Put Switch on supply unit to "ON."	Red lamp on supply unit should light if fitted and slight hum or vibration from vibrator.	(a) No red light, no vibration.	1. Power unit not connected to battery. 2. Fuse blown in power unit.	Check connections. Rewire fuse.					
				(b) Vibration but no red light.	1. Bulbs burnt out. 2. Bulbs removed for security reasons.	Replace by new bulb. Replace bulb if security permits.					
				(c) Lamp; lights, but no vibration.	1. Vibrator makes bad contact in holder. 2. Faulty vibrator.	Clean vibrator pins and replace. Replace by new vibrator.					
L.T. Voltage Supply.	2	Meter Switch to L.T.	Meter reading normal 11-12 volts.	Meter reading less than 10-5 volts.	Batteries need charging.	Replace by spare and connect up run-down battery for charging.					
H.T. Voltage Supply.	3	Sender switch "ON." Meter switch to H.T.S. Meter switch to H.T.R.	Meter reading about 300 volts. Meter reading about 150 volts.	Meter reads zero.	Internal fault.	Report.					
Receiver. (Try on both frequency bands.)	4	Turn system switch to R/T and meter to AVC and tune in any strong R/T station. "LF gain" and "RF GAIN" turned to max.	(a) Station is heard in phones.	1. No station can be heard.	1. Aerial disconnected. 2. Receiver faulty.	Examine all aerial and earth connections, including pigtail. Report.					
				2. Station is heard but very noisy.	1. Loose connections. 2. If connections are tight.	Check all connections. Report.					

		(b) Meter reads lower when Set is tuned to station than when it is not.	Meter reading does not alter.	Internal fault.	Report.
	5	Press net switch with strength 5 signal and adjust netting trimmer.	Whistle is heard.	Internal fault.	Report.
Sender (NOT TO BE TESTED IF UNDER WIRELESS SILENCE).	6	Put Meter switch to "Aerial," press pressel switch, and adjust the "Aerial Tuning" and "Aerial Coupling" for highest possible meter reading. (See Fig. 9.)	Meter does not read or reads very low.	1. Pressel switch not working. 2. Aerial connection faulty. 3. Sender faulty.	Try another headset; if still no good, report. Check all connections. Report.
	7	Put Meter switch to AVC and speak loudly into microphone.	No sidetone.	Internal fault.	Report. Note: Set may still send well.
Morse Key and C.W. reception (NOT TO BE TESTED UNDER WIRELESS SILENCE.)	8	Meter Switch to AE. System switch to C.W. Plug in key and depress.	Meter does not read, or reads very low.	1. Fault in key or key lead. 2. Internal fault.	Check key, lead and plug. Report.
	9	Switch to M.C.W. and back with key still depressed.	No whistle.	Internal fault.	Report.
	10	Release key.	No whistle heard.	Internal fault.	Report.
General.	11	Check all controls when necessary.	Controls jam, feel "rough" or fail to work.	Internal fault.	Report.

TABLE 8—RUNNING REPAIRS.

<i>No.</i>	<i>Failure</i>	<i>Possible Cause</i>	<i>Possible Cure</i>
1	Set completely dead.	Failure of Power.	Do Tests 1-3 of Daily Tests.
2	Power Unit working but sender and receiver dead.	Aerial disconnected.	Examine and replace pigtail if necessary.
3	Receiver dead, sender works, but no modulation or sidetone.	1. V1C. 2. V3A. 3. V4A.	Replace valve. Replace VIC, V3A, V4A.
4	Receiver dead, sender works and modulates, but no sidetone.	V4A.	Replace valve.
5	Receiver dead, sender works, but no modulation, sidetone heard.	V1A, V1B.	Replace valve. Replace valves V2A, V1A, V1B.
6	Receiver very weak, sender O.K.	V1A.	Replace valve.
7	Receiver dead, sender works O.K.	1. V1B. 2. If receiver still dead, V1A, V2A.	Replace valves in turn. Replace valves in turn.
8	Receiver O.K., sender no aerial current, no netting whistle.	V5A.	Replace valve.
9	Receiver O.K., sender aerial current and drive very low. Netting whistle O.K.	V6A.	Replace valve.
10	Receiver and sender O.K. on R/T, but no beat tone on C.W. receiver.	V3B.	Replace valve.
11	Receiver and sender O.K. on R/T, but no aerial current on C.W. or M.C.W. when key is depressed, but current when pressel switch is pressed.	Faulty key, key lead or plug.	Examine—repair if possible, otherwise report.
12	Receiver and sender O.K. on R/T, but no aerial current on C.W. or M.C.W. when key or pressel switch is pressed.	Internal fault.	Report.

APPENDICES

APPENDIX "A"—continued.

Items No.	Vocab. Cat. No.	Designation	Quantity		Required for Operation						
			X	Y	As Gnd. Sta.		As Veh. Sta.		As Man-Pack		
					X	Y	X	Y	X	Y	
SECTION Z1—continued											
36	ZA 2784	Leads, counterpoise, No. 2, Mk. II (h) (l)	1	—	1	—	—	—	—	1	—
37	ZA 2904	Microphone and receivers—									
		Headgear assemblies, No. 1	1 (j)	1 (r)	1	1	1	1	1	1	—
38	ZA 6292	Satchels, signals, No. 1	2	1	—	3	—	3	—	2	—
39	ZAA 4814	Signal Training, Vol. III, Aust., Pam., No. 14 (h) (l)	—	1	—	1	—	1	—	—	1
		Valves, W.T., type—									
40	ZAA 904	1C7G	2 (s)	—	2 (s)	—	—	2 (s)	—	1	—
41	ZAA 9215	1D5GP	6	—	6	—	—	6	—	3	—
42	ZAA 9213	1F5G	2	—	2	—	—	2	—	1	—
43	ZAA 9214	1H6G	4	—	4	—	—	4	—	2	—
44	ZAA 9263	6H6GT	2	—	2	—	—	2	—	1	—
45	ZAA 925	6U7G	2	—	2	—	—	2	—	1	—
46	ZAA 929	807	2	—	2	—	—	2	—	1	—
47	ZAA 993	Vibrators, 12-volt, PM357	2 (t)	3* (m)	2	3*	—	2	3*	2	3*
		Wireless Sets, No. 19—									
48	ZA 10202	Pads, mounting (c)	2	—	—	—	—	2	—	—	—
		Wireless sets, No. 22—									
		Carriers, battery (Aust.)—									
49	ZAA 4816	Mk. I } (r)	2	—	—	—	—	—	—	2	—
		or }									
50	ZAA 4839	Mk. II } (c)	1	—	—	—	—	—	—	—	—
51	ZA 14042	Carriers, No. 1 (c)	1	—	—	—	—	1	—	—	—
		Cases, spare valves (Aust.)—									
52	ZAA 4815	Mk. I } (m)	1	—	—	—	—	—	—	—	—
		or }									
53	ZAA 4838	Mk. II }	1	—	—	—	—	—	—	—	—

APPENDIX "A"—continued

NOTES :—

- (a) In or on Supply unit : packed in Carton No. 2.
 (b) One in Lamps, operators, two essential spares in Supply unit.
 (c) Packed in Carton, No. 8.
 (d) One is an essential spare.
 (e) Packed in Carton, No. 4.
 (f) Carried in Satchel "B."
 (g) See Appendix "A," column 8.
 (h) See Appendix "A," column 10.
 (i) Packed in Cartons, Nos. 6 and 7.
 (k) Carried in Satchel "A."
 (l) Packed in Carton, No. 3.
 (m) Packed in Carton, No. 6.
 (n) Carried in Satchel "C."
 (o) Includes 2 spares.
 (p) Packed in Carton, No. 7.
 (q) One in Carton, No. 2, on Supply unit ; one in Carton, No. 8, on carrier.
- (r) Packed in Carton, No. 5.
 (s) 50% are essential spares, carried in Cases, spare valves, working valves fitted in Wireless set.
 (t) In Supply unit, No. 2 ; one is an essential spare.
 (u) Fitted in or on the Set ; packed in Carton, No. 1.
 (v) For use only when specially authorized.
 (w) Three are essential spares ; in operation, one at Set, two at charging point, one in Carrier going forward or back.
 (x) In Boxes : 50% are essential spares.
 (y) Packed in Cases, Nos. 4 and 5.
 (z) Packed in Cases, Nos. 6, 7, 8 and 9.
 (aa) Not cased : supplied separately by Ordnance.
 (ab) Supply unit, No. 1, requires Connectors, 4-point, No. A2 (Aust.) and battery (Aust.), No. 8 ; Supply unit, No. 2, requires Connectors, twin, No. A6 (Aust.) and battery (Aust.), No. 3.

Cartons, Nos. 1 and 2 in Case, No. 1 ; Nos. 3, 4, 5 and 6 in Case, No. 2 ; Nos. 7 and 8 in Case, No. 3

(*) Essential spare(s).

APPENDIX "B"—AERIALS, VERTICAL: 34-ft. STEEL

Item No.	Vocab. Cat. No.	Designation	Quantity		Required for Operation						
			X	Y	As Gnd. Sta.		As Veh. Sta.		As Man-Pack		
					X	Y	X	Y	X	Y	
1	2	3	4	5	6	7	8	9	10	11	
1	FA 2137	SECTION F Hammers, engineers, ball-pein, 8-ozs.	1	—	1	—	—	—	—	—	—
2	YA 4080	SECTION Y Straps, carrying, H	1	—	1	—	1	—	—	—	
3	ZA 11009	SECTION Z1 Aerial Bases, No. 11	1	—	1	—	—	—	—	—	
4	ZA 11010	Spikes	1	—	1	—	—	—	—	—	
5	ZA 0374	Antennae rods, A—	10	—	8	2	—	—	—	—	
6	ZA 0378	Pegs Peg bags	1	—	1	—	—	—	—	—	
7	ZA 5341	Antennae rods, D—	1	—	1	—	—	—	—	—	
8	ZA 5346	Reamers	10	—	6	4	—	—	—	—	
9	ZA 5325	Sections, 3-ft.	1	—	1	—	—	—	—	—	
10	ZA 4860	Spikes	2	—	2	—	—	—	—	—	
11	ZA 4135	Stayplates, No. 4 (Aust.)	1	—	1	—	—	—	—	—	
12	ZA 11011	Antennae rods, F—	1	—	1	—	—	—	—	—	
13	ZAA 009	Adaptors, No. 1	1	—	1	—	1	—	—	—	
14	ZA 11462	Cases, carrying, No. 1	1	—	1	—	—	—	—	—	
15	ZA 0894	Covers, hammer (Aust.)	2	—	2	—	—	—	—	—	
16	ZA 0895	Straps, retaining, No. 1	4	—	4	—	4	—	4	—	
17	ZA 0896	Sections—	2	—	2	—	2	—	2	—	
18	ZA 0437	No. 1	1	—	1	—	—	—	—	—	
19	ZA 4432	No. 2	1	—	1	—	—	—	—	—	
20	ZAA 491	No. 3	6	—	6	—	6	—	6	—	
21	ZA 6579	Bags, aerial gear, No. 2, Mk. II Insulators, W.T.— Ebonite, B No. 2 (Aust.) Staytighteners, small	2	—	2	—	2	—	2	—	

APPENDIX "C"

ZAA 4811, WIRELESS SETS No. 22 (AUST.) YELLOW BAND SERIES—LIST OF MAIN COMPONENTS

Vocab. Cat. No.	Designation	Symbol	Description	R.C. Part No.	Assoc. with Value	Value	Remarks and Type
CONDENSERS							
ZAA 258	Cond. Fixed, X.1, B (Aust.)	C1A	BFO Injection Bypass	PC110	V1C	-0001 uf	Simplex Mica P/T 10%
ZAA 256	Cond. Fixed, X.5 (Aust.)	C2A	Mod. Plate Decoupling	PC144	V1C	-0005 uf	Simplex Mica P/T 10%
ZAA 255	Cond. Fixed, R.1, B (Aust.)	C3A	Aer., curr., RF Bypass	PC108	V7A	-001 uf	Simplex Mica P/T 10%
ZAA 255	Cond. Fixed, R.1, B (Aust.)	C3B	RF Limiter Decoupling	PC108	V6A	-001 uf	Simplex Mica P/T 10%
ZAA 257	Cond. Fixed, X.2 (Aust.)	C4A	Det. Diode IF Filter	PC124	V3A	-0002 uf	Simplex Mica P/T 10%
ZAA 257	Cond. Fixed, X.2 (Aust.)	C4B	Det. Diode IF Filter	PC124	V3A	-0002 uf	Simplex Mica P/T 10%
ZAA 257	Cond. Fixed, X.2 (Aust.)	C4C	1H6G Plate Decoupling	PC124	V3A	-0002 uf	Simplex Mica P/T 10%
ZAA 257	Cond. Fixed, X.2 (Aust.)	C4D	1H6G Grid Decoupling	PC124	V3A	-0002 uf	Simplex Mica P/T 10%
ZAA 2919	Cond. Fixed, Y.35, B (Aust.)	C5A	Det. to AVC Diode Coup.	PC254	V3A	35 uf	Ceramicon N750.A35 ±2½
ZAA 2919	Cond. Fixed, Y.35, B (Aust.)	C5B	Grid Relay, Series Compensator	PC254	V1A	35 uf	Ceramicon N750.A35 ±2½
ZAA 2924	Cond. Fixed, Y.1, P (Aust.)	C6A	Tuning 1st IF Prim.	PC456	V2A	100 uf	Ceramicon NPO-D100 ±2½
ZAA 2924	Cond. Fixed, Y.1, P (Aust.)	C6B	Tuning 1st IF Sec.	PC456	V1B	100 uf	Ceramicon NPO-D100 ±2½
ZAA 2924	Cond. Fixed, Y.1, P (Aust.)	C6C	Tuning 2nd IF Prim.	PC456	V1B	100 uf	Ceramicon NPO-D100 ±2½
ZAA 2924	Cond. Fixed, Y.1, P (Aust.)	C6D	Tuning 2nd IF Sec.	PC456	V1C	100 uf	Ceramicon NPO-D100 ±2½
ZAA 2924	Cond. Fixed, Y.1, P (Aust.)	C6E	Tuning 3rd IF Prim.	PC456	V1C	100 uf	Ceramicon NPO-D100 ±2½
ZAA 2924	Cond. Fixed, Y.1, P (Aust.)	C6F	Tuning 3rd IF Sec.	PC456	V3A	100 uf	Ceramicon NPO-D100 ±2½
ZAA 2924	Cond. Fixed, Y.1, P (Aust.)	C6G	Tuning BFO Prim.	PC456	V3B	100 uf	Ceramicon NPO-D100 ±2½
ZAA 253	Cond. Fixed, R.2 (Aust.)	C7A	Plate Decoupl. 1F5G	PC188	V4A	-002 uf	Simplex Mica P/T 10%
ZAA 253	Cond. Fixed, R.2 (Aust.)	C7B	Screen Decoupl. 807	PC168	V7A	-002 uf	Simplex Mica P/T 10%
ZAA 253	Cond. Fixed, R.2 (Aust.)	C7C	RF Decoupl. B+	PC168	V7A	-002 uf	Simplex Mica P/T 10%
ZAA 253	Cond. Fixed, R.2 (Aust.)	C7D	1D5GP Grid Blocking MCW	PC168	V1C	-002 uf	Simplex Mica P/T 10%
ZAA 2132	Cond. Fixed, X.2, G (Aust.)	C8A	Aerial Loading	PC533	V7A	-0002 uf	Chanex, Mica 1500VW 10%
ZAA 231	Cond. Fixed, Q.5, B (Aust.)	C9A	Screen Bypass	PC498	V1A	-05 uf	Chanex 400V Paper PP258 20%
ZAA 231	Cond. Fixed, Q.5, B (Aust.)	C9B	Screen Bypass	PC498	V2A	-05 uf	Chanex 400V Paper PP258 20%
ZAA 231	Cond. Fixed, Q.5, B (Aust.)	C9C	B+, RF Filter	PC498	V4A	-05 uf	Chanex 400V Paper PP258 20%
ZAA 231	Cond. Fixed, Q.5, B (Aust.)	C9D	807 Screen Bypass	PC498	V7A	-05 uf	Chanex 400V Paper PP258 20%

ZAA 231	Cond. Fixed, Q.5, B (Aust.)	C9E	1st IF AVC Filter	PC498	V1B	.05 uf	Chanex 004V Paper PP258 20%
ZAA 231	Cond. Fixed, Q.5, B (Aust.)	C9F	2nd IF Screen Bypass	PC498	V1C	.05 uf	Chanex 400V Paper PP258 20%
ZAA 231	Cond. Fixed, Q.5, B (Aust.)	C9G	RT/MCW 807 Coupling	PC498	V7A	.05 uf	Chanex 400V Paper PP258 20%
ZAA 295	Cond. Fixed, X.3, B (Aust.)	C10A	807 Grid Coupling RF	PC399	V7A	300 uuF	Simplex Type SMX 5%
ZAA 389	Cond. Variable, No. 69 (Aust.)	C11A	Gang Recvr. RF Stage	PC209	V1A	10-5-248 uuF	Radio Corp. 4-gang
ZAA 389	Cond. Variable, No. 69 (Aust.)	C11B	Gang Recvr. Osc.		V2A	10-5-248 uuF	
ZAA 389	Cond. Variable, No. 69 (Aust.)	C11C	Gang M/O Tuning	V5A	10-5-248 uuF		
ZAA 389	Cond. Variable, No. 69 (Aust.)	C11D	Gang Buffer Stage	V5A	11-437 uuF		
ZAA 390	Cond. Variable, No. 70 (Aust.)	C12A	Gang Ant. Coupling	V7A	14-480 uuF		
ZAA 2788	Cond. Fixed, R.1, R (Aust.)	C13A	Plate Blocking	V7A	.001 uFd		Radio Corp. single-gang
ZAA 2039	Cond. Fixed, Q.2, D (Aust.)	C14A	RF Stage AVC Filter	V1A	.02 uFd		Simplex Type SMX 5%
ZAA 2039	Cond. Fixed, Q.2, D (Aust.)	C14B	2nd IF AVC Filter	V1C	.02 uFd		Chanex 400V Paper PP245 20%
ZAA 252	Cond. Fixed, R.5 (Aust.)	C15A	Coup. 1F5G to Compress.	V4A	.005 uFd		Chanex 400V Paper PP245 20%
ZAA 252	Cond. Fixed, R.5 (Aust.)	C15B	807 Cath. Bypass	V7A	.005 uFd		Simplex Type SM 10%
ZAA 251	Cond. Fixed, Q.1, F (Aust.)	C16A	Receiver Audio Coupling	V7A	.01 uF		Simplex Type SM 10%
ZAA 251	Cond. Fixed, Q.1, F (Aust.)	C16B	M/O Screen Bypass	V3A	.01 uF		Simplex Type SM 10%
ZAA 251	Cond. Fixed, Q.1, F (Aust.)	C16C	MCW Feed-back	V5A	.01 uF		Simplex Type SM 10%
ZAA 251	Cond. Fixed, Q.1, F (Aust.)	C16D	Coupling Triode 1H6G Transm.	V1C	.01 uF		Simplex Type SM 10%
ZAA 251	Cond. Fixed, Q.1, F (Aust.)	C16E	1F5G Coupling Sidetone	V3A	.01 uF		Simplex Type SM 10%
ZAA 251	Cond. Fixed, Q.1, F (Aust.)	C16F	M/O Plate Decoup.	V4A	.01 uF		Simplex Type SM 10%
ZAA 251	Cond. Fixed, Q.1, F (Aust.)	C16G	M/O Coupling, Buffer	V5A	.01 uF		Simplex Type SM 10%
ZAA 289	Cond. Fixed, F.5, F (Aust.)	C17A	RF Bypass Compress. Diode	V5A	.01 uF		Simplex Type SM 10%
ZAA 2926	Cond. Fixed, Y.5, H (Aust.)	C18A	Receiver Osc. Grid	V6A	.00005 uF		Simplex Type P/T 10%
ZAA 223	Cond. Fixed, P.1, C (Aust.)	C19A	Fil. Bypass RF Stage	V2A	50 uuF		Simplex Type SMX 5%
ZAA 223	Cond. Fixed, P.1, C (Aust.)	C19B	Fil. Bypass Conv. Stage	V1A	.1 uF		Chanex, 200V Paper PP270 20%
ZAA 223	Cond. Fixed, P.1, C (Aust.)	C19C	Fil. Bypass 2nd IF Stage	V2A	.1 uF		Chanex 200V Paper PP270 20%
ZAA 278	Cond. Fixed, Z.5, C (Aust.)	C20A	Fil. Bypass BFO Tube	V1C	.1 uF		Chanex 200V Paper PP270 20%
ZAA 278	Cond. Fixed, Z.5, C (Aust.)	C20B	Diode Return Decoup.	V3B	.5 uF		Aerovox 200V Metal Clad 20%
ZAA 2317	Cond. Fixed, Z.5, C (Aust.)	C20B	Fil. Bypass BFO Tube	V3A	.5 uF		Aerovox 200V Metal Clad 20%
ZAA 2317	Cond. Fixed, 250, B (Aust.)	C21A	Fil. Bypass Transm. Triode	V3B	250 uF		Ducon, 15V Type ET 20%
ZAA 2317	Cond. Fixed, 250, B (Aust.)	C21B	Fil. Bypass Transm. Triode	V3A	250 uF		Ducon, 15V Type ET 20%
ZAA 2317	Cond. Fixed, 250, B (Aust.)	C21C	Fil. Bypass Transm. Triode	V3A	250 uF		Ducon, 15V Type ET 20%
ZAA 2317	Cond. Fixed, 250, B (Aust.)	C21D	Fil. Bypass 1F5G Recv. O/P	V4A	250 uF		Ducon, 15V Type ET 20%
ZAA 3045	Cond. Semi-fixed, No. 15 (Aust.)	C22A	Trimmer, L.F., RF Coil	V1A	4-30 uuF		Ducon, N500, TS, 2A
ZAA 3045	Cond. Semi-fixed, No. 15 (Aust.)	C22B	Trimmer, H.F., RF Coil	V1A	4-30 uuF		Ducon, N500, TS, 2A

APPENDIX "C"—continued

Vocab. Cat. No.	Designation	Symbol	Description	R.C. Part No.	Assoc. with Value	Value	Remarks and Type
CONDENSERS—continued							
ZAA 3045	Cond. Semi-fixed, No. 15 (Aust.)	C22C	Trimmer, L.F. Osc.	PC207	V2A	4-30 uuF	Ducon, N500, TS, 2A
ZAA 3045	Cond. Semi-fixed, No. 15 (Aust.)	C22D	Trimmer, H.F. Osc.	PC207	V2A	4-30 uuF	Ducon, N500, TS, 2A
ZAA 3045	Cond. Semi-fixed, No. 15 (Aust.)	C22E	Grid Relay Compensator	PC207	V1A	4-30 uuF	Ducon, N500, TS, 2A
ZAA 2927	Cond. Fixed, Y.2, H (Aust.)	C23A	Pad, L.F. RF Coil	PC517	V1A	20 uuF	Simplex Type SMX 10%
ZAA 2927	Cond. Fixed, Y.2, H (Aust.)	C23B	Pad, L.F. Osc. Coil	PC517	V2A	20 uuF	Simplex Type SMX 10%
ZAA 2927	Cond. Fixed, Y.2, H (Aust.)	C23C	Pad, H.F. Osc. Coil	PC517	V2A	20 uuF	Simplex Type SMX 10%
ZAA 2927	Cond. Fixed, Y.2, H (Aust.)	C23D	M/O Parallel Padder	PC517	V5A	20 uuF	Simplex Type SMX 10%
ZAA 2783	Cond. Fixed, R.1193 (Aust.)	C24A	Series Pad, L.F. Osc.	PC514	V2A	1193 uuF	Simplex Type P/T 2½%
ZAA 2784	Cond. Fixed, R.206 (Aust.)	C25A	Series Pad, H.F. Osc.	PC510	V2A	2060 uuF	Simplex Type P/T 2½%
ZAA 391	Cond. Variable, No. 71 (Aust.)	C26A	Netting Trimmer	PC219	V5A	4-11 uuF	Radio Corp. PC219
ZAA 2320	Cond. Fixed, P.25, J (Aust.)	C28A	Compression on R/T	PC348	V4A	.25 uF	Chanex 400V Type PZD1354
ZAA 392	Cond. Variable, No. 72 (Aust.)	C29A	Trimmer, M/O H.F.	PC220	V5A	6-22 uuF	Radio Corp. Double Trimmer PC220
ZAA 393	Cond. Variable, No. 73 (Aust.)	C29B	Trimmer, M/O L.F.	PC507	V5A	6-22 uuF	Radio Corp. Double Trimmer PC507
ZAA 394	Cond. Variable, No. 74 (Aust.)	C30A	Trimmer, L.F. Buffer	PC507	V5A	6-27 uuF	Radio Corp. Double Trimmer PC507
		C30B	Trimmer, H.F. Buffer	PC507	V5A	6-27 uuF	Radio Corp. Double Trimmer PC507
		C31A	Netting Corrector, L.F. Osc.	PC208	V5A	4-11 uuF	Radio Corp. Double Trimmer PC208
		C31B	Netting Corrector, H.F. Osc.	PC208	V5A	3-6 uuF	Radio Corp. Double Trimmer PC208
ZAA 2928	Cond. Fixed, X.6 (Aust.)	C33A	Aerial Loading	PC245	V7A	.0006 uF	Chanex 1500VW 10%
ZAA 2316	Cond. Fixed, 300 (Aust.)	C34A	Relay Time Delay	PC205	V7A	300 uF	Ducon 16V Type ET
ZAA 2316	Cond. Fixed, 300 (Aust.)	C34B	Relay Time Delay	PC205	V7A	300 uF	Ducon 16V Type ET
ZAA 243	Cond. Fixed, Q.1, H (Aust.)	C35A	Conv. Plate Decoup.	PC499	V2A	.01 uF	Chanex 600V Paper PP235 20%
ZAA 2929	Cond. Fixed, X.1, R (Aust.)	C36A	M/O Grid Blocking	PC479	V5A	100 uuF	Ceramicon N750B100±5
ZAA 294	Cond. Fixed, X.1, Q (Aust.)	C37A	RF Grid Blocking	PC386	V1A	100 uuF	Simplex Type SMX 5%
ZAA 2785	Cond. Fixed, X.1, S (Aust.)	C38A	BFO Grid Blocking	PC513	V3B	.0001 uF	Simplex Mica, P/T 10% (Spec.)
ZAA 2787	Cond. Fixed, R.1, S (Aust.)	C39A	BFO Plate Coupling	PC512	V3B	.001 uF	Simplex Mica, P/T 10% (Spec.)
ZAA 2787	Cond. Fixed, R.1, S (Aust.)	C39B	Rec. Osc. Plate Coupling	PC512	V2A	.001 uF	Simplex Mica, P/T 10% (Spec.)
ZAA 2786	Cond. Fixed, X.5, K (Aust.)	C40A	RF Plate Coupling	PC511	V1A	.0005 uF	Simplex Mica, P/T 10% (Spec.)

RESISTORS

ZAA 704	Res. $\frac{1}{2}$ W No. 3 or No. 4	1 megohm	R1A	Audio Compression	PR246	V4A	1 megohm	IRC Carbon 10% Type BT $\frac{1}{2}$
ZAA 704	Res. $\frac{1}{2}$ W No. 3 or No. 4	1 megohm	R1B	Audio Compression	PR246	V4A	1 megohm	IRC Carbon 10% Type BT $\frac{1}{2}$
ZAA 704	Res. $\frac{1}{2}$ W No. 3 or No. 4	1 megohm	R1C	AVC Filter	PR246	V1C	1 megohm	IRC Carbon 10% Type BT $\frac{1}{2}$
ZAA 704	Res. $\frac{1}{2}$ W No. 3 or No. 4	1 megohm	R1D	Grid Return	PR246	V1A, B	1 megohm	IRC Carbon 10% Type BT $\frac{1}{2}$
ZAA 704	Res. $\frac{1}{2}$ W No. 3 or No. 4	1 megohm	R1E	Diode Load	PR246	V3A	1 megohm	IRC Carbon 10% Type BT $\frac{1}{2}$
ZAA 704	Res. $\frac{1}{2}$ W No. 3 or No. 4	1 megohm	R1F	AVC Filter	PR246	V1A-B	1 megohm	IRC Carbon 10% Type BT $\frac{1}{2}$
ZAA 704	Res. $\frac{1}{2}$ W No. 3 or No. 4	1 megohm	R1G	BFO Plate Load	PR246	V3B	1 megohm	IRC Carbon 10% Type BT $\frac{1}{2}$
ZAA 711	Res. $\frac{1}{2}$ W No. 3 or No. 4	750 K. ohm	R2A	Sidestone Attenua.	PR267	V4A	750 K. ohm	IRC Carbon 10% Type BT $\frac{1}{2}$
ZAA 711	Res. $\frac{1}{2}$ W No. 3 or No. 4	750 K. ohm	R2B	Loading 3rd IF Prim.	PR267	V1C	750 K. ohm	IRC Carbon 10% Type BT $\frac{1}{2}$
ZAA 711	Res. $\frac{1}{2}$ W No. 3 or No. 4	750 K. ohm	R2C	Loading 2nd IF Prim.	PR267	V1B	750 K. ohm	IRC Carbon 10% Type BT $\frac{1}{2}$
ZAA 711	Res. $\frac{1}{2}$ W No. 3 or No. 4	750 K. ohm	R2D	Loading 1st IF Prim.	PR267	V2A	750 K. ohm	IRC Carbon 10% Type BT $\frac{1}{2}$
ZAA 703	Res. $\frac{1}{2}$ W No. 3 or No. 4	500 K. ohm	R3A	1F5G Grid Leak	PR245	V4A	500 K. ohm	IRC Carbon 10% Type BT $\frac{1}{2}$
ZAA 703	Res. $\frac{1}{2}$ W No. 3 or No. 4	500 K. ohm	R3B	Diode Load	PR245	V3A	500 K. ohm	IRC Carbon 10% Type BT $\frac{1}{2}$
ZAA 703	Res. $\frac{1}{2}$ W No. 3 or No. 4	500 K. ohm	R3C	Transm. Triode Load	PR245	V3A	500 K. ohm	IRC Carbon 10% Type BT $\frac{1}{2}$
ZAA 703	Res. $\frac{1}{2}$ W No. 3 or No. 4	500 K. ohm	R3D	Loading 2nd IF Sec.	PR245	V1C	500 K. ohm	IRC Carbon 10% Type BT $\frac{1}{2}$
ZAA 703	Res. $\frac{1}{2}$ W No. 3 or No. 4	500 K. ohm	R3E	Loading 1st IF Sec.	PR245	V1B	500 K. ohm	IRC Carbon 10% Type BT $\frac{1}{2}$
ZAA 703	Res. $\frac{1}{2}$ W No. 3 or No. 4	500 K. ohm	R3F	Audio Compress. Bias	PR245	V6A	500 K. ohm	IRC Carbon 10% Type BT $\frac{1}{2}$
ZAA 700	Res. $\frac{1}{2}$ W No. 3 or No. 4	100 K. ohm	R4A	1F5G Grid Stopper	PR103	V4A	100 K. ohm	IRC Carbon 10% Type BT $\frac{1}{2}$
ZAA 700	Res. $\frac{1}{2}$ W No. 3 or No. 4	100 K. ohm	R4B	2nd IF Screen Feed	PR103	V1C	100 K. ohm	IRC Carbon 10% Type BT $\frac{1}{2}$
ZAA 700	Res. $\frac{1}{2}$ W No. 3 or No. 4	100 K. ohm	R4C	MCW Osc. Grid Leak	PR103	V1C	100 K. ohm	IRC Carbon 10% Type BT $\frac{1}{2}$
ZAA 700	Res. $\frac{1}{2}$ W No. 3 or No. 4	100 K. ohm	R4D	BFO Grid Leak	PR103	V3B	100 K. ohm	IRC Carbon 10% Type BT $\frac{1}{2}$
ZAA 700	Res. $\frac{1}{2}$ W No. 3 or No. 4	100 K. ohm	R4E	AVC Filter R.F.	PR103	V1A	100 K. ohm	IRC Carbon 10% Type BT $\frac{1}{2}$
ZAA 700	Res. $\frac{1}{2}$ W No. 3 or No. 4	100 K. ohm	R4F	Compress Filter	PR103	V4A	100 K. ohm	IRC Carbon 10% Type BT $\frac{1}{2}$
ZAA 700	Res. $\frac{1}{2}$ W No. 3 or No. 4	100 K. ohm	R4G	M/Q Grid Leak	PR103	V5A	100 K. ohm	IRC Carbon 10% Type BT $\frac{1}{2}$
ZAA 700	Res. $\frac{1}{2}$ W No. 3 or No. 4	100 K. ohm	R4H, J	Two in parallel M/O Plat $\frac{1}{2}$ and Screen feed on net				
ZAA 702	Res. $\frac{1}{2}$ W No. 3 or No. 4	250 K. ohm	R5A	Mod. Limiter MCW	PR103	V5A	100 K. ohm	IRC Carbon 10% Type BT $\frac{1}{2}$
ZAA 702	Res. $\frac{1}{2}$ W No. 3 or No. 4	250 K. ohm	R5B	Transm. Triode Plate Load	PR249	V6A	250 K. ohm	IRC Carbon 10% Type BT $\frac{1}{2}$
ZAA 698	Res. $\frac{1}{2}$ W No. 3 or No. 4	50 K. ohm	R6A	Rec. Osc. Grid Leak	PR249	V3A	250 K. ohm	IRC Carbon 5% Type BT $\frac{1}{2}$
ZAA 698	Res. $\frac{1}{2}$ W No. 3 or No. 4	50 K. ohm	R6B	RF & IF Screen Regulator	PR160	V2A	50 K. ohm	IRC Carbon 5% Type BT $\frac{1}{2}$
ZAA 695	Res. $\frac{1}{2}$ W No. 3 or No. 4	10 K. ohm	R7A	Bias Trans. Diode	PR160	V1A, V1B	50 K. ohm	IRC Carbon 10% Type BT $\frac{1}{2}$
ZAA 695	Res. $\frac{1}{2}$ W No. 3 or No. 4	10 K. ohm	R7B	Diode Return Decoup.	PR164	V6A	10 K. ohm	IRC Carbon 10% Type BT $\frac{1}{2}$
ZAA 695	Res. $\frac{1}{2}$ W No. 3 or No. 4	10 K. ohm	R7B		PR164	V3A	10 K. ohm	IRC Carbon 10% Type BT $\frac{1}{2}$

APPENDIX "C"—continued

Vocab. Cat. No.	Designation	Symbol	Description	R.C. Part No.	Assoc. with Value	Value	Remarks and Type
ZAA 665	Res. 1W No. 3 or No. 4, 10 K. ohm	R8A	807 Screen Feed	PR325	V7A	10 K. ohm	IRC Carbon 10% Type BT1
ZAA 6067	Res. Variable, 1 megohm (Aust.) No. 4	R9A	Audio Volume Control	PR113	V8A	1 M. ohm	Radio Corp. PR113
ZAA 6066	Res. Variable, 1 megohm (Aust.) No. 3	R10A	RF Gain Control	PR112	V1A, B	1 M. ohm	Radio Corp. PR112
ZAA 666	Res. 1W No. 3 or No. 4, 15 K. ohm	R11A	Sidetone Atten.	PR225	V4A	15 K. ohm	IRC Carbon 10% Type BT1
ZAA 701	Res. 1W No. 3 or No. 4, 150 K. ohm	R12A	Sidetone Atten.	PR273	V4A	150 K. ohm	IRC Carbon 10% Type BT1
ZAA 6295	Res. 20W No. 2A 800 ohms	R13A	Back Bias Resist.	PR508	V1-9	800 ohm	IRC W.W. Adjustable Type DGA2
ZAA 699	Res. 1W No. 3 or No. 4, 70 K. ohm	R14A	M/O Screen Feed	PR256	V5A	70 K. ohm	IRC Carbon 10% Type BT1
ZAA 699	Res. 1W No. 3 or No. 4, 70 K. ohm	R14B	807 Grid Leak	PR256	V7A	70 K. ohm	IRC Carbon 10% Type BT1
ZAA 699	Res. 1W No. 3 or No. 4, 70 K. ohm	R14C	Conv. Screen Feed	PR256	V2A	70 K. ohm	IRC Carbon 10% Type BT1
ZAA 6614	Res. 1W Wirewound 33-3 ohm	R15A	Filament Resistor	PR506	V1A	33-3 ohm	IRC W.W. 5% Type BW1
ZAA 6614	Res. 1W Wirewound 33-3 ohm	R15B	Filament Resistor	PR506	V3A	33-3 ohm	IRC W.W. 5% Type BW1
ZAA 6614	Res. 1W Wirewound 33-3 ohm	R15C	Filament Resistor	PR506	V1C	33-3 ohm	IRC W.W. 5% Type BW1
ZAA 6613	Res. 1W Wirewound 16-6 ohm	R16A	Filament Resistor	PR374	V3A	16-6 ohm	IRC W.W. 5% Type BW1
ZAA 6615	Res. 1W Wirewound 66-6 ohm	R17A	Filament Resistor	PR149	V3B	66-6 ohm	IRC W.W. 5% Type BW1
ZAA 694	Res. 1W No. 3 or No. 4, 5 K. ohm	R18A	M/O Plate Feed	PR250	V5A	5 K. ohm	IRC Carbon 10% Type BT1
ZAA 694	Res. 1W No. 3 or No. 4, 5 K. ohm	R18B	Conv. Plate Decoup.	PR250	V2A	5 K. ohm	IRC Carbon 10% Type BT1
ZAA 699	Res. 1W No. 3 or No. 4, 30 K. ohm	R19A	807 Grid Leak	PR156	V7A	30 K. ohm	IRC Carbon 10% Type BT1
ZAA 688	Res. 1W No. 3 or No. 4, 2 K. ohm	R20A	RF Grid Decoupler	PR253	V1A	2 K. ohm	IRC Carbon 10% Type BT1
ZAA 6361	Res. 5W No. 2, 1-67 ohm	R21A	P.A. M/A Meter Shunt	PR141	V7A	1-67 ohm	IRC W.W. 2½% Type AB3
ZAA 6608	Res. 1W Wirewound 20 ohm	R22A	Slugged Relay	PR291	—	20 ohm	IRC W.W. 10% Type BW1
ZAA 6612	Res. 1W Wirewound 40 ohm	R23A	807 Plate Stopper	PR342	V7A	40 ohm	IRC W.W. 5% Type BW1
ZAA 705	Res. 1W No. 3 or No. 4, 1-2 M. ohm	R24A	Meter Multiplier	PR139	—	1-2 M. ohm	IRC Carbon 5% Type BT1
ZAA 705	Res. 1W No. 3 or No. 4, 1-2 M. ohm	R24B	Meter Multiplier	PR139	—	1-2 M. ohm	IRC Carbon 5% Type BT1
ZAA 712	Res. 1W No. 3 or No. 4, 29-5 K. ohm	R25A	Meter Multiplier	PR134	—	29-5 K. ohm	IRC Carbon 2½% Type BT1
ZAA 6617	Res. 1W Wirewound 110 ohm	R26A	Meter Shunt	PR131	—	110 ohm	IRC W.W. 2½% Type BW1

RESISTORS—continued

ZAA 6618	Res. 1W Wirewound 250 ohm	R27A	Meter Shunt	PR133	—	250 ohm	IRC W.W. 2½% Type BW½
ZAA 6417	Res. 3W No. 2 21 ohm	R28A	Filament Transm.	PR505	—	21 ohm	IRC W.W. 3W 5% Type AA1
ZAA 6439	Res. 3W No. 2 80 ohm	R29A	Sidestone Atten.	PR493	V4A	80 ohm	IRC W.W. 3W 5% Type AA1
ZAA 6616	Res. 1W Wirewound 40 ohm	R30A	Sidestone Atten.	PR283	V4A	40 ohm	IRC W.W. 5% Type BW½
ZAA 6616	Res. 1W Wirewound 40 ohm	R30B	Aer. Curr. Trans. Load	PR283	—	40 ohm	IRC W.W. 5% Type BW½
ZAA 6619	Res. 1W Wirewound 700 ohm	R31A	Filament	PR507	—	700 ohm	IRC W.W. 5% Type BW1
ZAA 6391	Res. 20W Wirewound 10 ohm	R32A	Aerial Dummy	PR144	V7A	10 ohm	Radio Corp. PR144
ZAA 667	Res. 1W No. 3 or No. 4 20 K. ohm	R33A	Drive Regulator	PR171	V5A	20 K. ohm	IRC Carbon 10% Type BT1
ZAA 6068	Res. Variable, 6 ohms (Aust.), No. 1	R34A	Heterodyne Control	PR510	V3B	6 ohm	Radio Corp. PR510
ZAA 6655	Res. 1W Special 20 K. ohm	R35A	Screen Decoupler	PR533	V1A-B	20 K. ohm	IRC Carbon 5% Type BT1
ZAA 687	Res. 1W No. 3 or No. 4 25 K. ohm	R36A	IF Filter Diodes	PR155	V3A	25 K. ohm	IRC Carbon 10% Type BT½
ZAA 697	Res. 1W No. 3 or No. 4 25 K. ohm	R36B	Mod. Plate Load	PR155	V1C	25 K. ohm	IRC Carbon 10% Type BT½
ZAA 6294	Res. Adjustable 1000 ohms (Aust.), No. 1	R37A	Aer. Curr. Transformer	PR187	V7A	1000 ohm	Radio Corp. PR187
ZAA 698	Res. 1W No. 3 or No. 4 30 K. ohm	R38A	Receiver Osc. Plate	PR151	V2A	30 K. ohm	IRC Carbon 10% Type BT½
ZAA 696	Res. 1W No. 3 or No. 4 20 K. ohm	R39A	Feed Back Regulator MCW	PR166	V1C	20 K. ohm	IRC Carbon 10% Type BT½
ZAA 6792	Res. 1W No. 3 or No. 4 6 K. ohm	R40A	Drive Regulator L.F.	PR296	V7A	6 K. ohm	IRC Carbon 10% Type BT1

INDUCTANCES

ZAA 4691	Inductance, No. 121 (Aust.)	L1A	Var. Induct. Ant.	PT226	V1A	174 uH	Radio Corp.
ZAA 1655	Choke, R.F., No. 75 (Aust.)	L2A	Choke (Ant. Trans.)	PT652	V7A	470 uH	Radio Corp.
ZAA 197	Choke, R.F., No. 13 (Aust.)	L3A	Choke RF (RF Grid)	PT340	V1A	16-3 ohm	Radio Corp.
ZAA 197	Choke, R.F., No. 13 (Aust.)	L3B	Choke RF (RF Plate)	PT340	V1A	1-6 MH	Radio Corp.
ZAA 197	Choke, R.F., No. 13 (Aust.)	L3C	Choke RF (807 Grid)	PT340	V7A	1-6 MH	Radio Corp.
ZAA 197	Choke, R.F., No. 13 (Aust.)	L3D	Choke RF (M/O Plate)	PT340	V5A	1-6 MH	Radio Corp.
ZAA 197	Choke, R.F., No. 13 (Aust.)	L3E	Choke RF (807 Plate)	PT340	V7A	1-6 MH	Radio Corp.
ZAA 4682	Inductance, No. 112 (Aust.)	L4A	Coil, RF Rec. LF	PT639	V1A	2-4 Mc/s	Radio Corp.
ZAA 4683	Inductance, No. 113 (Aust.)	L5A	Coil, Osc. Rec. LF	PT641	V2A	2-4 Mc/s	Radio Corp.
ZAA 4684	Inductance, No. 114 (Aust.)	L6A	Coil, RF Rec. HF	PT640	V1A	4-8 Mc/s	Radio Corp.
ZAA 4685	Inductance, No. 115 (Aust.)	L7A	Coil, Osc. Rec. HF	PT642	V2A	4-8 Mc/s	Radio Corp.
ZAA 4686	Inductance, No. 116 (Aust.)	L8A	Coil, B.F.O.	PT645	V3B	455 Kc/s	Radio Corp.

APPENDIX "C"—continued

Vocab. Cat. No.	Designation	Symbol	Description	R.C. Part No.	Assoc. with Value	Value	Remarks and Type
INDUCTANCES—continued							
ZAA 4688	Inductance, No. 118 (Aust.)	L9A	Coil, M.O. HF	PT636	V5A	2-4 Mc/s	Radio Corp.
ZAA 4687	Inductance, No. 117 (Aust.)	L10A	Coil, M.O. LF	PT635	V5A	1-2 Mc/s	Radio Corp.
ZAA 4689	Inductance, No. 119 (Aust.)	L11A	Coil, Doubler LF	PT637	V5A	2-4 Mc/s	Radio Corp.
ZAA 4690	Inductance, No. 120 (Aust.)	L12A	Coil, Doubler HF	PT638	V5A	4-8 Mc/s	Radio Corp.
ZAA 1656	Choke, R.F., No. 76 (Aust.)	L13A	Choke, RF (Filament)	PT250	V2A	16-6 ohms	Radio Corp.
TRANSFORMERS							
ZAA 8020	Transformer, R.F. Current, No. 6 (Aust.)	T1A	Trans. Ant. Current	PT653	V7A	455 Kc/s	Radio Corp.
ZAA 8106	Transformer, I.F., AM (Aust.)	T2A	Trans. IF (Conv. Stage)	PT629	V2A	455 Kc/s	Radio Corp.
ZAA 8106	Transformer, I.F., AM (Aust.)	T2B	Trans. IF No. 1 Stage	PT629	V1B	455 Kc/s	Radio Corp.
ZAA 8107	Transformer, I.F., AN (Aust.)	T3A	Trans. IF No. 2 Stage	PT630	V1C	455 Kc/s	Radio Corp.
ZAA 8037	Transformer, Telephone, Y (Aust.)	T4A	Trans. Output	PT643	V4A	20 K. ohm	Radio Corp.
ZAA 8378	Transformer, Modulation, G (Aust.)	T5A	Trans. Mod. M.C.W.	PT644	V1C	100 ohm	Radio Corp.
SWITCHES							
ZAA 7538	Switch, 9-pole 3-way, B (Aust.)	S1A-J	Function Switch	PM309			Radio Corp. 3D, 3P, 3W, PM309
ZAA 7539	Wafer (No. 1)	S1FHJ		PM598			Radio Corp. No. 1-3P, 3W, PM598
ZAA 7539	Wafer (No. 2)	S1BEG		PM598			Radio Corp. No. 2-3P, 3W, PM598
ZAA 7539	Wafer (No. 3)	SIACD		PM598			Radio Corp. No. 3-3P, 3W, PM598
ZAA 7540	Switch, 2-pole, 4-way (Aust.)	S2A-B	Ant. Selector Switch	PM362			Technico, ceramic 1D, 2P, 4W, PM362

ZAA 7542	Switch, Single-pole, 2-way, E (Aust.)	S3A	Normal/Remote Switch	PM963	Alpha Type "A"
ZAA 7542	Switch, Single-pole, 2-way, E (Aust.)	S3B	Send/Standby Switch	PM963	Alpha Type "A"
ZAA 7543	Switch, 2-pole, 7-way, A (Aust.)	S4A-B	Meter Switch	PM351	Radio Corp. 2D, 1P, 7W, PM351
ZAA 7544	Wafer (No. 1)	S4A	Pos. Meter Switching	PM599	Radio Corp. No. 1-1P, 7W, PM599
ZAA 7545	Wafer (No. 2)	S4B	Neg. Meter Switching	PM634	Radio Corp. No. 2-1P, 7W, PM634
ZAA 7546	Switch, 12-pole, 2-way, B (Aust.)	S5A-M	Wave Change Switch	—	Technico 1D, 3P, 2W, PM315
ZAA 7546	Wafers (No. 1)	S5ABC	M/O Change over	PM315	Technico 1D, 3P, 2W, PM315
ZAA 7546	Wafers (No. 2)	S5DEF	RF Change over	PM315	Technico 1D, 3P, 2W, PM315
ZAA 7546	Wafers (No. 3)	S5GHJ	Osc. Change over	PM315	Technico 1D, 3P, 2W, PM315
ZAA 7546	Wafers (No. 4)	S5KLM	Doubler Change over	PM315	Technico 1D, 3P, 2W, PM315
ZAA 7547	Switch, Push-button, No. 3 (Aust.)	S6A-E	Netting Switch	A517/495	Radio Corp. 2M, 3B, A517/495

VALVES

ZAA 9215	Valve, W.T., type 1D5GP	V1A	RF Amplifier	PM588	Super control RF pentode
ZAA 9215	Valve, W.T., type 1D5GP	V1B	IF Amplifier	PM588	Super control RF pentode
ZAA 9215	Valve, W.T., type 1D5GP	V1C	IF Amplifier	PM588	Super control RF pentode
ZAA 904	Valve, W.T., type 1C7G	V2A	Mixer	PM201	Pentagrid converter
ZAA 9214	Valve, W.T., type 1H6G	V3A	2nd Detector AVC	PM317	Duo-diode Triode
ZAA 9214	Valve, W.T., type 1H6G	V3B	B.F.O.	PM317	Duo-diode Triode
ZAA 9213	Valve, W.T., type 1F5G	V4A	Audio Output Amp.	PM199	Power Amplifier pentode
ZAA 925	Valve, W.T., type 6U7G	V5A	M.O.	PM261	Super control RF pentode
ZAA 9263	Valve, W.T., type 6H6GT	V6A	RF and Audio Compressor	PM577	Twin diode
ZAA 929	Valve, W.T., type 807	V7A	Power Amplifier	PM282	Beam Power Amplifier

APPENDIX "C"—continued

Vocab. Cat. No.	Designation	Symbol	Description	R.C. Part No.	Assoc. with Value	Value	Remarks and Type
MISCELLANEOUS							
ZAA 598	Rect. Metal, MBS5 (Aust.)	W1A	Fullwave Meter Rect.	PM408	V7A	5 m/a	McKenzie & Holland M.B.S.5 Trop Treat.
ZAA 599	Rect. Metal, SH 1/1-1 (Aust.)	W2A	Halfwave Meter	PM391	V7A	10 m/a	McKenzie & Holland SH 1/1-1 Trop Treat
ZAA 4825	Voltmeter, 15 + 600 volts, No. 2 (Aust.)	M1A	All Metering	PM458		500 u/a	EMMCO. 15 and 600 volt Scale
ZAA 4830	Socket, 12-point	Y1A	Power Socket	787/495-1			A.W.A. 12-pin
ZA 2994	Socket, 5-point, No. 5	Y2A	Drop Cord Socket	A105/495			Radio Corp.
ZA 2994	Socket, 5-point, No. 5	Y2B	* Drop Cord Socket	A105/495			Radio Corp.
ZAA 4829	Jacks, key	J1A	Key Jack	A101/481			Radio Corp.
ZAA 8857	Jacks, line	J2A	Line Jack	A101/268			Radio Corp.
ZAA 5824	Relay, 7-pole, No. 2 (Aust.)	RL1	Slugged action	PM314		100 ohm	S.T.C. Type 3000; 1M, 2CO/2M, 1B, 1CO
ZAA 5825	Relay, 3-pole, No. 3 (Aust.)	RL2	Keying	PM311		100 ohm	S.T.C. Type 3000; 2M, 1M
ZAA 5823	Relay, S.P.D.T., No. 6 (Aust.)	RL3	Grid Changeover	PM511		100 ohm	Radio Corp. PM511; 1CO

ZAA 4813, SUPPLY UNITS (AUST) No. 2

LIST OF MAIN COMPONENTS.

CONDENSERS

ZAA 2371	Cond. Fixed 1, K (Aust.)	C1A	A + Filter	PC154		1 uF	Chanex, 200V, Paper 20% Type PBF
ZAA 2371	Cond. Fixed 1, K (Aust.)	C1B	A + Filter	PC154		1 uF	Chanex, 200V, Paper 20% Type PBF
ZAA 224	Cond. Fixed, Q.5 (Aust.)	C2A	Prim. Buffer	PC494		.05uF	Chanex, 200V, Paper 20% Type PP256
ZAA 2318	Cond. Fixed, 16, D (Aust.)	C3A	Mod. B + Bypass	PC298		16 uF	Ducon, 525V, 20% ET1048
ZAA 2318	Cond. Fixed, 16, D (Aust.)	C3B	B + Filter	PC298		16 uF	Ducon, 525V, 20% ET1048
ZAA 2318	Cond. Fixed, 16, D (Aust.)	C3C	B + Filter	PC298		16 uF	Ducon, 525V, 20% ET1048
ZAA 2318	Cond. Fixed, 16, D (Aust.)	C3D	B + Filter	PC298		16 uF	Ducon, 525V, 20% ET1048
ZAA 2318	Cond. Fixed, 16, D (Aust.)	C3E	B + Filter	PC298		16 uF	Ducon, 525V, 20% ET1048

ZAA 2364	Cond. Fixed, R.3, B (Aust.)	C4A	RF Filter B+	PC212	-0003 uF	Simplex, Mica, 10% Type PT
ZAA 2364	Cond. Fixed, R.3, B (Aust.)	C4B	RF Filter B+	PC212	-0003 uF	Simplex, Mica, 10% Type PT
ZAA 2131	Cond. Fixed, R.8 (Aust.)	C5A	Secondary Buffer	PC231	-008 uF	TCC, 2000V Mica 10% Type M
ZAA 231	Cond. Fixed, Q.5, B (Aust.)	C6A	B - Bypass	PC498	-05 uF	Chanex, 400V, Paper 20% Type PP258
ZAA 233	Cond. Fixed, P.1, D (Aust.)	C7A	B+ Bypass	PC243	.1 uF	Chanex, 600V, Paper 20% Type PP273
ZAA 233	Cond. Fixed, P.1, D (Aust.)	C7B	B+ Bypass	PC243	.1 uF	Chanex, 600V, Paper 20% Type PP273
ZAA 242	Cond. Fixed, P.5, F (Aust.)	C8A	B - Bypass	PC496	.5 uF	Chanex, 400V, Paper 20% Type PP294

RESISTORS

ZAA 675	Res. 1W No. 3 or No. 4 100 K. ohm	R1A	16 uF Leakage Regulator	PR165	100 K. ohm	IRC Carbon 10% Type BT1
ZAA 675	Res. 1W No. 3 or No. 4 100 K. ohm	R1B	16 uF Leakage Regulator	PR165	100 K. ohm	IRC Carbon 10% Type BT1
ZAA 675	Res. 1W No. 3 or No. 4 100 K. ohm	R1C	16 uF Leakage Regulator	PR165	100 K. ohm	IRC Carbon 10% Type BT1
ZAA 675	Res. 1W No. 3 or No. 4 100 K. ohm	R1D	16 uF Leakage Regulator	PR165	100 K. ohm	IRC Carbon 10% Type BT1
ZAA 669	Res. 1W No. 3 or No. 4 30 K. ohm	R2A	Peak Voltage Limiter	PR156	30 K. ohm	IRC Carbon 10% Type BT1
ZAA 656	Res. 2W No. 3 50 K. ohm	R3A	Mod. B+ Dropping	PR363	50 K. ohm	IRC Carbon 10% Type BT2
ZAA 656	Res. 2W No. 3 50 K. ohm	R3B	Mod. B+ Dropping	PR363	50 K. ohm	IRC Carbon 10% Type BT2
ZAA 6228	Res. 10W No. 2 8,330 ohm	R4A	Receiver Dropping	PR154	8,330 ohm	IRC WW 2 1/2% Type DH3
ZAA 6438	Res. 3W No. 2 24 ohm	R5A	Inspect Lamp	PR193	24 ohm	IRC WW 5% Type AA1
ZAA 6438	Res. 3W No. 2 24 ohm	R5B	Indic. Lamp	PR193	24 ohm	IRC WW 5% Type AA1

APPENDIX "C"—continued.

Vocab. Cat. No.	Designation	Symbol	Description	R.C. Part No.	Assoc. with Valve	Value	Remarks and Type
INDUCTANCES							
ZAA 1653	Choke, R.F., No. 73 (Aust.)	L1A	R.F. Choke B+	PT109			Radio Corp. PT109
ZAA 1653	Choke, R.F., No. 73 (Aust.)	L1B	R.F. Choke B+	PT109			Radio Corp. PT109
ZAA 1653	Choke, R.F., No. 73 (Aust.)	L1C	R.F. Choke B-	PT109			Radio Corp. PT109
ZAA 1653	Choke, R.F., No. 73 (Aust.)	L1D	R.F. Choke B-	PT109			Radio Corp. PT109
ZAA 1654	Choke, R.F., No. 74 (Aust.)	L2A	R.F. Choke A+	PT633			Radio Corp. PT633
ZAA 1738	Choke, A.F., No. 58 (Aust.)	L3A	B+ Filter Choke	PT627			Radio Corp. PT627
ZAA 1657	Choke, R.F., No. 77 (Aust.)	L4A	R.F. Choke A+	PT672			Radio Corp. PT672
TRANSFORMERS							
ZAA 8152	Transformer, vibrator, M (Aust.)	T1A	Power Transformer	PT634			Radio Corp. PT634
MISCELLANEOUS							
ZAA 7534	Switch, Single-pole, On-Off, H (Aust.)	S1A	A+ On/Off	PM743			Chivers 12V, 15A Type D140/1
ZAA 5822	Relay, D.P.D.T., No. 4 (Aust.)	RL1	B+ Change over	PM361			Radio Corp. Type 100-100 PM361
ZAA 993	Vibrator, 12-V, PM357	Z1	Vibrator	PM357		12V	Radio Corp. Split Reed PM357
ZA 2816	Plug, 12-point, No. 1	P1A	Cable Plug	54/250			A.W.A. 12-pin
ZAA 4381	Plug, 2-point	P2A	Battery Plug	A134/495			Radio Corp.
WB 0017	Bulbs, 6 volt, J	PL1A	Inspection Lamp	PM475		.3 amp	Radio Corp. G 4 1/2 Screw Base
WB 0017	Bulbs, 6 volt, J	PL1B	Indicator Lamp	PM475		.3 amp	Radio Corp. G 4 1/2 Screw Base
ZAA 4718	Fuse Wire, No. 34 SWG, 35-ft.	F1A	Fuse				Tinned Copper Wire 34 SWG.
ZAA 4882	Socket, 2-point	Y1A	Socket Inspection Lamp	A806/405			Radio Corp.
	Hash Plate	HP1A	Hash Plate				Radio Corp.
ZAA 4827	Insulator		Mica Insulator	29/216			Radio Corp.
	Clamp, bakelite		Earth Plate	19A/47			Radio Corp.
ZAA 4828			Bakelite Clamp	19B/47			Radio Corp.

APPENDIX "D"

READINGS OF METER*

FUNCTIONS OF METER FOR POSITIONS OF METER SWITCH

Position	Function	Weekly Aerial Reading			
		1st Freq.	Rdg.	2nd Freq.	Rdg.
AERIAL :	Indicates R.F. current flowing in internal dummy, or external aerials. Scale—approximately 1.5 amps. (Not linear at lower values.)				
A.V.C. :	This indicates screen current of R.F. and 1st IF tubes, which is reduced in proportion to the strength of the received signal.				
L.T. :	This indicates battery voltage. Scale—0-15 volts.				
H.T.R. :	Indicates receiver high tension. Scale—0-600 volts.				
H.T.S. :	Indicates Sender high tension. Scale—0-600 volts.				
DRIVE :	Indicates 807 grid current. Scale—1.5 m/a.				
P/A :	Indicates 807 cathode current. Scale—150 m/a.				

*All readings with Function Switch in the "C.W." position.

APPENDIX "E"

PROTECTION AGAINST GAS

(1) *Protection against Gas Vapour.*

Respirators which facilitate speech are being designed. Meanwhile it should be found possible to speak with the microphone over short lines by holding it against the metal cap of the existing respirator. Should difficulty be experienced, use the key.

(2) *Protection against Gas Spray.*

(a) *Vehicle Stations.*—The rear flaps of the vehicle should be closed when precautions against spray are ordered. Respirators need not be worn unless the gas can be smelt.

(b) *Ground Station.*—When precautions against spray are ordered, improvise covering for the operators and station. Throw a cape, A.G., over the Set and the adjacent Unit, but leave the aerial exposed to spray.

If no cover can be improvised, take the following action. As soon as the fall of spray has been detected, carry out personal decontamination (COE-CDO) in accordance with A.F. A2022, or Section 7 (2) of Pamphlet 8 (*Protection Against Gas*) of the *Field Service Pocket Book*.

Wipe the panel and controls clean with dry swabs, paying particular attention to all parts that are likely to be touched with the fingers. Continue to operate the Set, but carry out decontaminations as soon as an opportunity occurs, and in any case, before moving the station. Keep the fingers well treated with ointment, A.G., No. 3.

In a man-carried ground station, the Set and aerial should be carried outside the Cape, A.G.

(c) *Decontamination.*—As soon as an opportunity occurs, decontaminate the equipment as fully as circumstances permit.

Apply ointment, A.G., No. 3, to the hands.

Clean the aerial and all other metal or painted parts by swabbing with petrol or paraffin.

Treat canvas covers and carrying straps by removing all free liquid with swabs, and applying ointment, A.G., to all surfaces which will come into contact with the hands or body.

If canvas parts have been splashed with liquid blister gas, boil them for an hour, when an opportunity occurs, in soda solution (1 oz. washing soda to every 5 gallons of water). If, however, the canvas parts have been only slightly contaminated, they will decontaminate themselves in the course of a day or two's exposure to the air.

Give the panel and controls a final treatment with petrol or paraffin, and leave them dry and clean.

If the vehicle has been contaminated, the detector paint should be renewed and decontamination should be carried out, so far as may be necessary in accordance with Section 82 of *Protection Against Gas and Air Raids*, Pamphlet No. 1.

Only those contaminated parts which are likely to be touched by personnel need be treated; the remainder can be left to weather. Maintenance must be carried out under precautions; *i.e.*, personnel must wear gloves or use A.G. ointment.

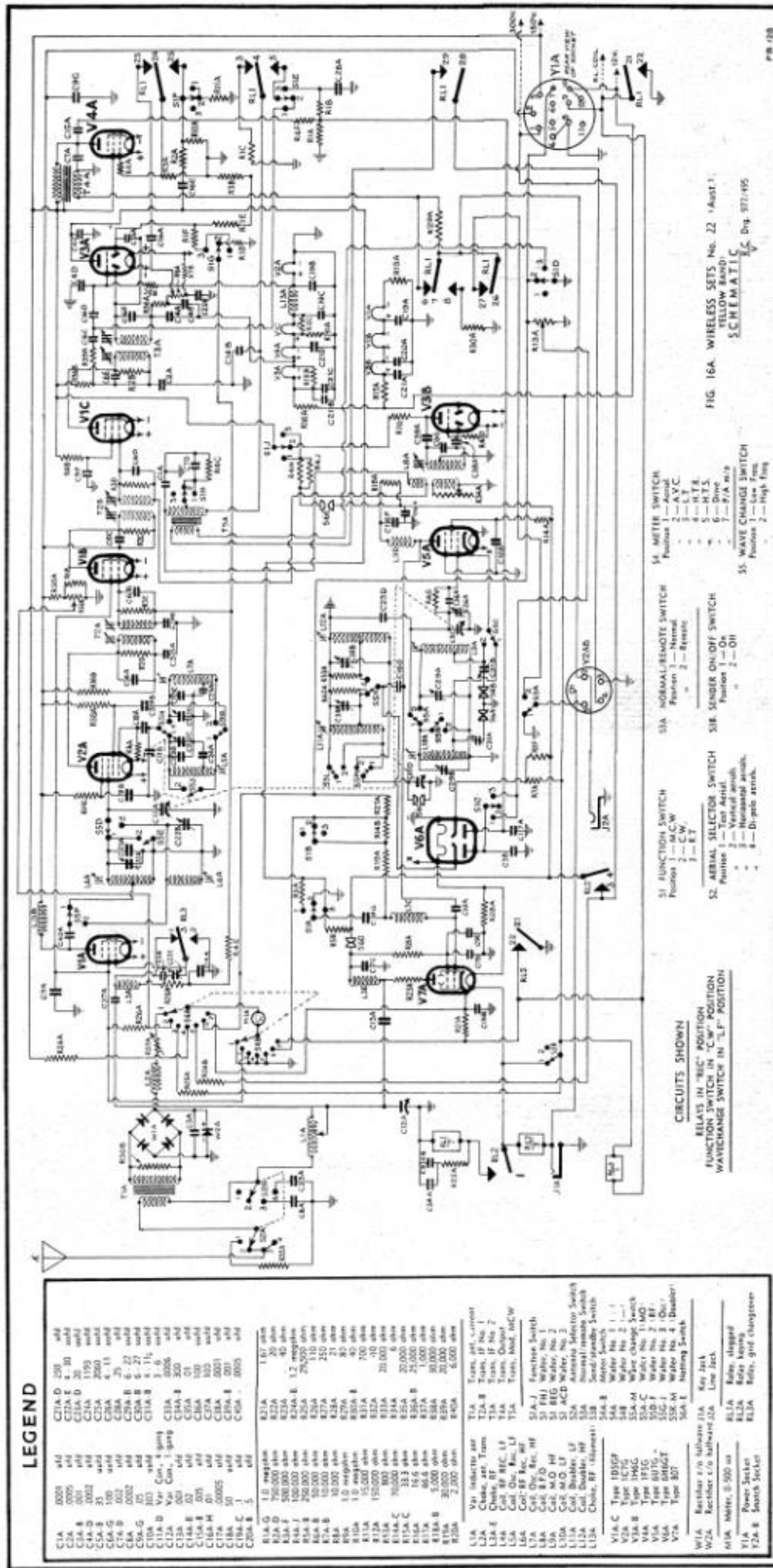


FIG. 16A. WIRELESS SETS No. 22 - Aust.
S.C.H.E.M.A.T.I.C. No. 977-495

LEGEND

C1A	0005	4M	4M
C1B	0005	4-30	airfd
C1C	001	100	airfd
C1D	001	100	airfd
C1E	001	100	airfd
C1F	001	100	airfd
C1G	001	100	airfd
C1H	001	100	airfd
C1I	001	100	airfd
C1J	001	100	airfd
C1K	001	100	airfd
C1L	001	100	airfd
C1M	001	100	airfd
C1N	001	100	airfd
C1O	001	100	airfd
C1P	001	100	airfd
C1Q	001	100	airfd
C1R	001	100	airfd
C1S	001	100	airfd
C1T	001	100	airfd
C1U	001	100	airfd
C1V	001	100	airfd
C1W	001	100	airfd
C1X	001	100	airfd
C1Y	001	100	airfd
C1Z	001	100	airfd
C2A	0005	4M	4M
C2B	0005	4-30	airfd
C2C	001	100	airfd
C2D	001	100	airfd
C2E	001	100	airfd
C2F	001	100	airfd
C2G	001	100	airfd
C2H	001	100	airfd
C2I	001	100	airfd
C2J	001	100	airfd
C2K	001	100	airfd
C2L	001	100	airfd
C2M	001	100	airfd
C2N	001	100	airfd
C2O	001	100	airfd
C2P	001	100	airfd
C2Q	001	100	airfd
C2R	001	100	airfd
C2S	001	100	airfd
C2T	001	100	airfd
C2U	001	100	airfd
C2V	001	100	airfd
C2W	001	100	airfd
C2X	001	100	airfd
C2Y	001	100	airfd
C2Z	001	100	airfd
C3A	0005	4M	4M
C3B	0005	4-30	airfd
C3C	001	100	airfd
C3D	001	100	airfd
C3E	001	100	airfd
C3F	001	100	airfd
C3G	001	100	airfd
C3H	001	100	airfd
C3I	001	100	airfd
C3J	001	100	airfd
C3K	001	100	airfd
C3L	001	100	airfd
C3M	001	100	airfd
C3N	001	100	airfd
C3O	001	100	airfd
C3P	001	100	airfd
C3Q	001	100	airfd
C3R	001	100	airfd
C3S	001	100	airfd
C3T	001	100	airfd
C3U	001	100	airfd
C3V	001	100	airfd
C3W	001	100	airfd
C3X	001	100	airfd
C3Y	001	100	airfd
C3Z	001	100	airfd
C4A	0005	4M	4M
C4B	0005	4-30	airfd
C4C	001	100	airfd
C4D	001	100	airfd
C4E	001	100	airfd
C4F	001	100	airfd
C4G	001	100	airfd
C4H	001	100	airfd
C4I	001	100	airfd
C4J	001	100	airfd
C4K	001	100	airfd
C4L	001	100	airfd
C4M	001	100	airfd
C4N	001	100	airfd
C4O	001	100	airfd
C4P	001	100	airfd
C4Q	001	100	airfd
C4R	001	100	airfd
C4S	001	100	airfd
C4T	001	100	airfd
C4U	001	100	airfd
C4V	001	100	airfd
C4W	001	100	airfd
C4X	001	100	airfd
C4Y	001	100	airfd
C4Z	001	100	airfd
C5A	0005	4M	4M
C5B	0005	4-30	airfd
C5C	001	100	airfd
C5D	001	100	airfd
C5E	001	100	airfd
C5F	001	100	airfd
C5G	001	100	airfd
C5H	001	100	airfd
C5I	001	100	airfd
C5J	001	100	airfd
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C5M	001	100	airfd
C5N	001	100	airfd
C5O	001	100	airfd
C5P	001	100	airfd
C5Q	001	100	airfd
C5R	001	100	airfd
C5S	001	100	airfd
C5T	001	100	airfd
C5U	001	100	airfd
C5V	001	100	airfd
C5W	001	100	airfd
C5X	001	100	airfd
C5Y	001	100	airfd
C5Z	001	100	airfd
C6A	0005	4M	4M
C6B	0005	4-30	airfd
C6C	001	100	airfd
C6D	001	100	airfd
C6E	001	100	airfd
C6F	001	100	airfd
C6G	001	100	airfd
C6H	001	100	airfd
C6I	001	100	airfd
C6J	001	100	airfd
C6K	001	100	airfd
C6L	001	100	airfd
C6M	001	100	airfd
C6N	001	100	airfd
C6O	001	100	airfd
C6P	001	100	airfd
C6Q	001	100	airfd
C6R	001	100	airfd
C6S	001	100	airfd
C6T	001	100	airfd
C6U	001	100	airfd
C6V	001	100	airfd
C6W	001	100	airfd
C6X	001	100	airfd
C6Y	001	100	airfd
C6Z	001	100	airfd
C7A	0005	4M	4M
C7B	0005	4-30	airfd
C7C	001	100	airfd
C7D	001	100	airfd
C7E	001	100	airfd
C7F	001	100	airfd
C7G	001	100	airfd
C7H	001	100	airfd
C7I	001	100	airfd
C7J	001	100	airfd
C7K	001	100	airfd
C7L	001	100	airfd
C7M	001	100	airfd
C7N	001	100	airfd
C7O	001	100	airfd
C7P	001	100	airfd
C7Q	001	100	airfd
C7R	001	100	airfd
C7S	001	100	airfd
C7T	001	100	airfd
C7U	001	100	airfd
C7V	001	100	airfd
C7W	001	100	airfd
C7X	001	100	airfd
C7Y	001	100	airfd
C7Z	001	100	airfd
C8A	0005	4M	4M
C8B	0005	4-30	airfd
C8C	001	100	airfd
C8D	001	100	airfd
C8E	001	100	airfd
C8F	001	100	airfd
C8G	001	100	airfd
C8H	001	100	airfd
C8I	001	100	airfd
C8J	001	100	airfd
C8K	001	100	airfd
C8L	001	100	airfd
C8M	001	100	airfd
C8N	001	100	airfd
C8O	001	100	airfd
C8P	001	100	airfd
C8Q	001	100	airfd
C8R	001	100	airfd
C8S	001	100	airfd
C8T	001	100	airfd
C8U	001	100	airfd
C8V	001	100	airfd
C8W	001	100	airfd
C8X	001	100	airfd
C8Y	001	100	airfd
C8Z	001	100	airfd
C9A	0005	4M	4M
C9B	0005	4-30	airfd
C9C	001	100	airfd
C9D	001	100	airfd
C9E	001	100	airfd
C9F	001	100	airfd
C9G	001	100	airfd
C9H	001	100	airfd
C9I	001	100	airfd
C9J	001	100	airfd
C9K	001	100	airfd
C9L	001	100	airfd
C9M	001	100	airfd
C9N	001	100	airfd
C9O	001	100	airfd
C9P	001	100	airfd
C9Q	001	100	airfd
C9R	001	100	airfd
C9S	001	100	airfd
C9T	001	100	airfd
C9U	001	100	airfd
C9V	001	100	airfd
C9W	001	100	airfd
C9X	001	100	airfd
C9Y	001	100	airfd
C9Z	001	100	airfd
C0A	0005	4M	4M
C0B	0005	4-30	airfd
C0C	001	100	airfd
C0D	001	100	airfd
C0E	001	100	airfd
C0F	001	100	airfd
C0G	001	100	airfd
C0H	001	100	airfd
C0I	001	100	airfd
C0J	001	100	airfd
C0K	001	100	airfd
C0L	001	100	airfd
C0M	001	100	airfd
C0N	001	100	airfd
C0O	001	100	airfd
C0P	001	100	airfd
C0Q	001	100	airfd
C0R	001	100	airfd
C0S	001	100	airfd
C0T	001	100	airfd
C0U	001	100	airfd
C0V	001	100	airfd
C0W	001	100	airfd
C0X	001	100	airfd
C0Y	001	100	airfd
C0Z	001	100	airfd

- 51 FUNCTION SWITCH**
Position 1 - M.C.W.
Position 2 - F.T.
- 52 AIRIAL SELECTOR SWITCH**
Position 1 - Normal
Position 2 - On
- 53A NORMAL/REMOTE SWITCH**
Position 1 - Normal
Position 2 - Remote
- 54 METER SWITCH**
Position 1 - A.C.
Position 2 - D.C.
- 55 WAVE CHANGE SWITCH**
Position 1 - Low Freq.
Position 2 - High Freq.

CIRCUITS SHOWN
RELAYS IN "REC" POSITION
FUNCTION SWITCH IN "M.C.W." POSITION
WAVECHANGE SWITCH IN "L.F." POSITION

V1A	Rectifier 6X4	Key Jack
V2A	Rectifier 6AR5	Line Jack
V3A	6AV6	Relay, stagger
V4A	6BE6	Relay, stagger
V5A	6AV6	Relay, stagger
V6A	6BE6	Relay, stagger
V7A	6AV6	Relay, stagger
V8A	6BE6	Relay, stagger
V9A	Rectifier 6X4	Relay, stagger

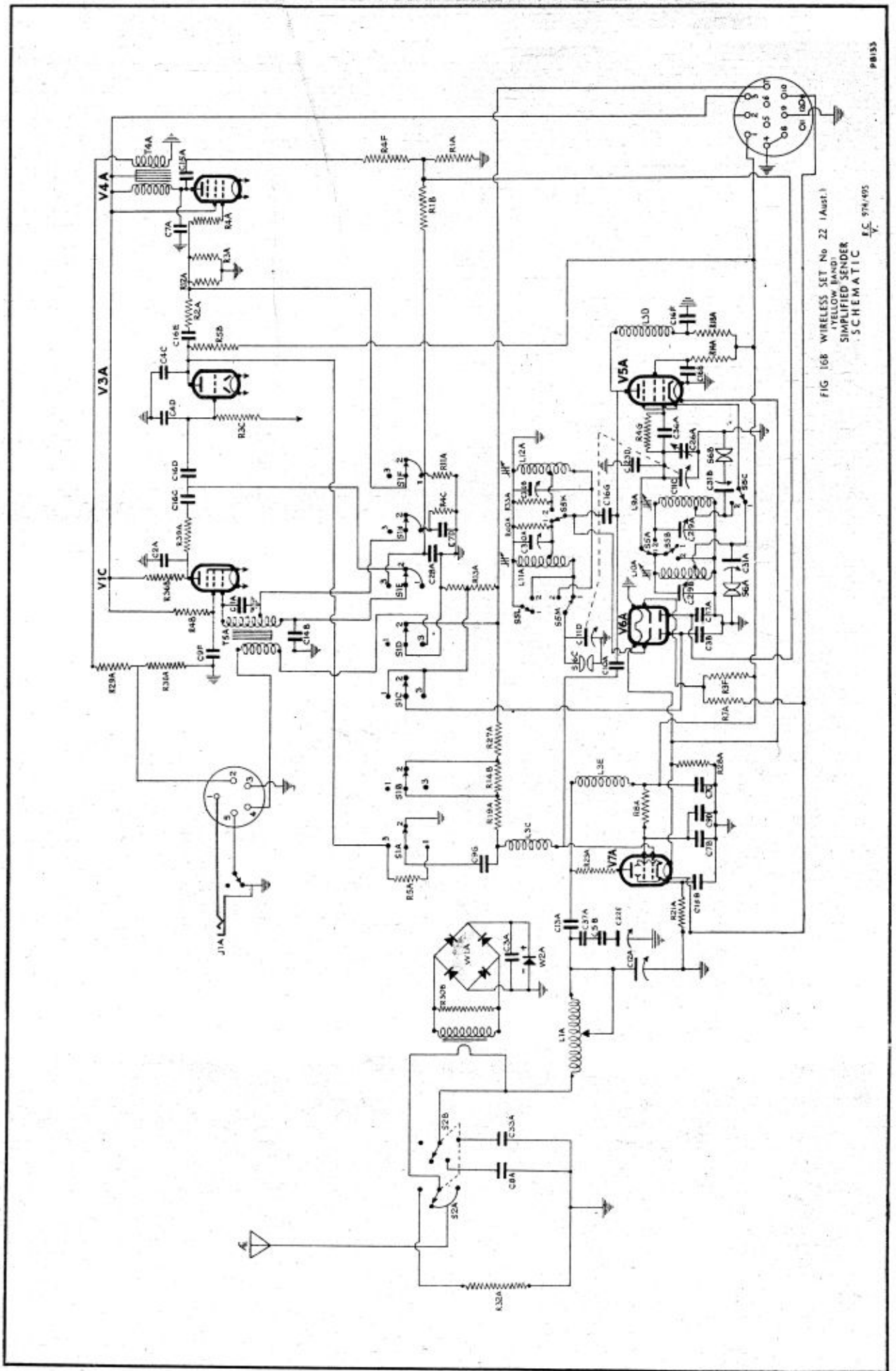


FIG 16B WIRELESS SET No. 22 (Aust.)
 YELLOW BAND
 SIMPLIFIED SENDER
 SCHEMATIC

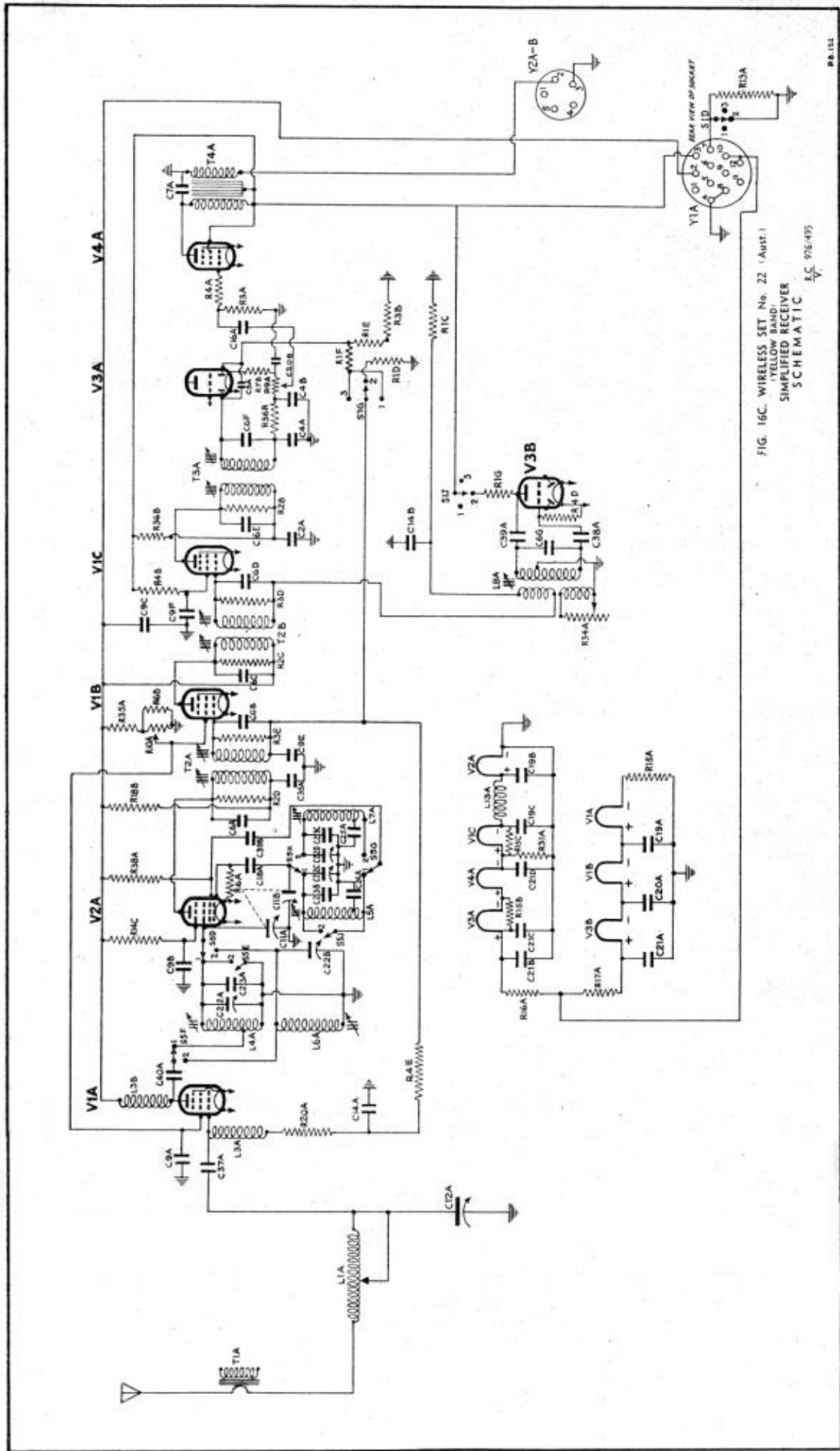


FIG. 16C. WIRELESS SET No. 22 (AUST.)
 'YELLOW BAND'
 SIMPLIFIED RECEIVER
 SCHEMATIC

R.C. 975,495

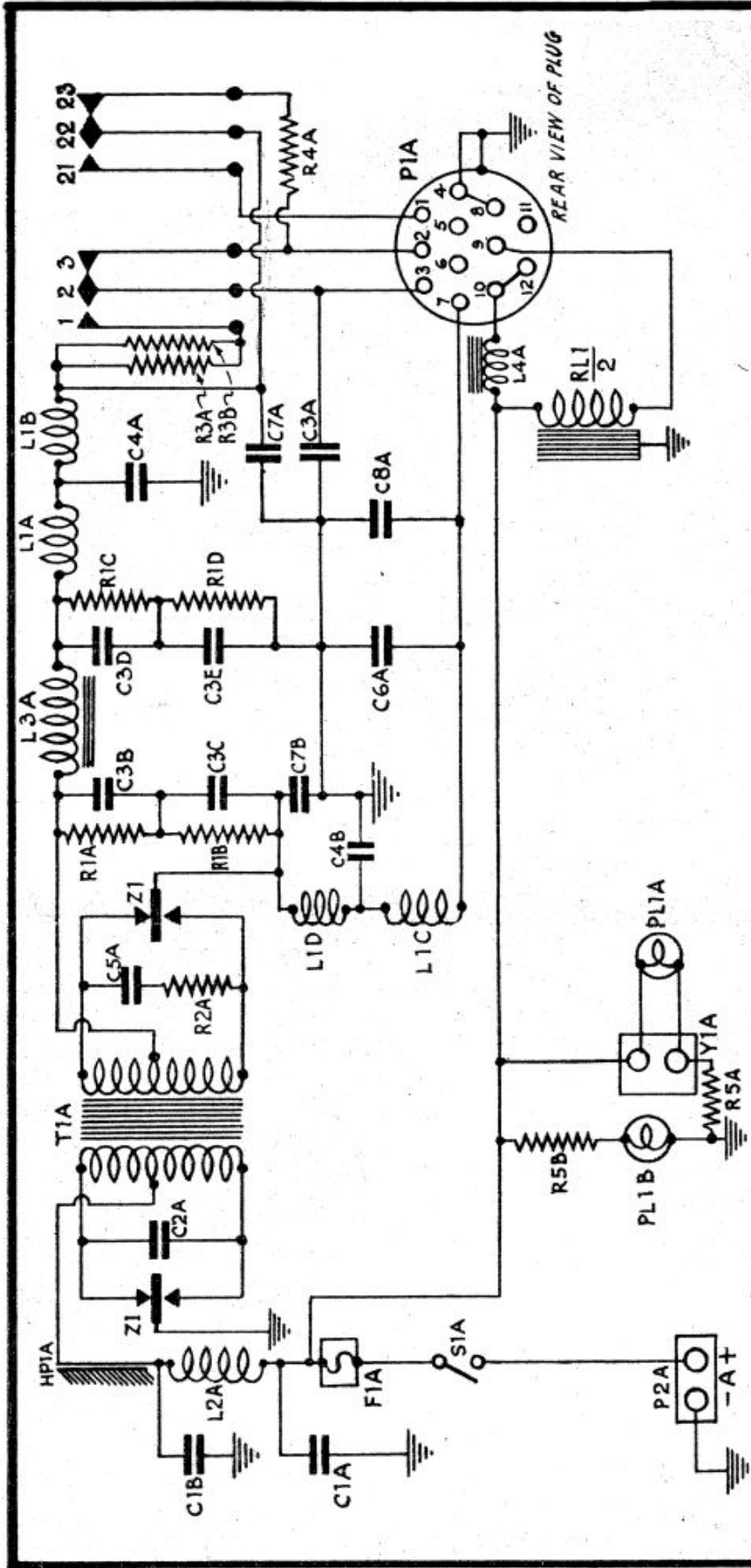


FIG 17
WIRELESS SETS NO:22
(Aust.)
SUPPLY UNIT NO.2
SCHEMATIC

RC DRG. 975/495

SUPPLY UNIT NO.2. LEGEND

C1A-B	1 μ f	R1A-D	100,000 ohm	T1A	POWER TRANSFORMER
C2A	.05 μ f	R2A	30,000 ohm	S1A	SWITCH ON/OFF
C3A-E	16 μ f	R3A-B	50,000 ohm	RL1	RELAY, SEND/RECEIVE
C4A-B	.0003 μ f	R4A	8,330 ohm	Z1	VIBRATOR
C5A	.008 μ f	R5A-B	24 ohm	PIA	CABLE PLUG
C6A	.05 μ f	L1A-D	CHOKES R.F.	P2A	BATTERY PLUG
C7A-B	.1 μ f	L2A	CHOKES R.F.	PL1A-B	PILOT LAMP
C8A	.5 μ f	L3A	CHOKES FILTER	F1A	FUSE
		L4A	CHOKES FILTER	Y1A	LAMP SOCKET
				HP1A	HASH PLATE

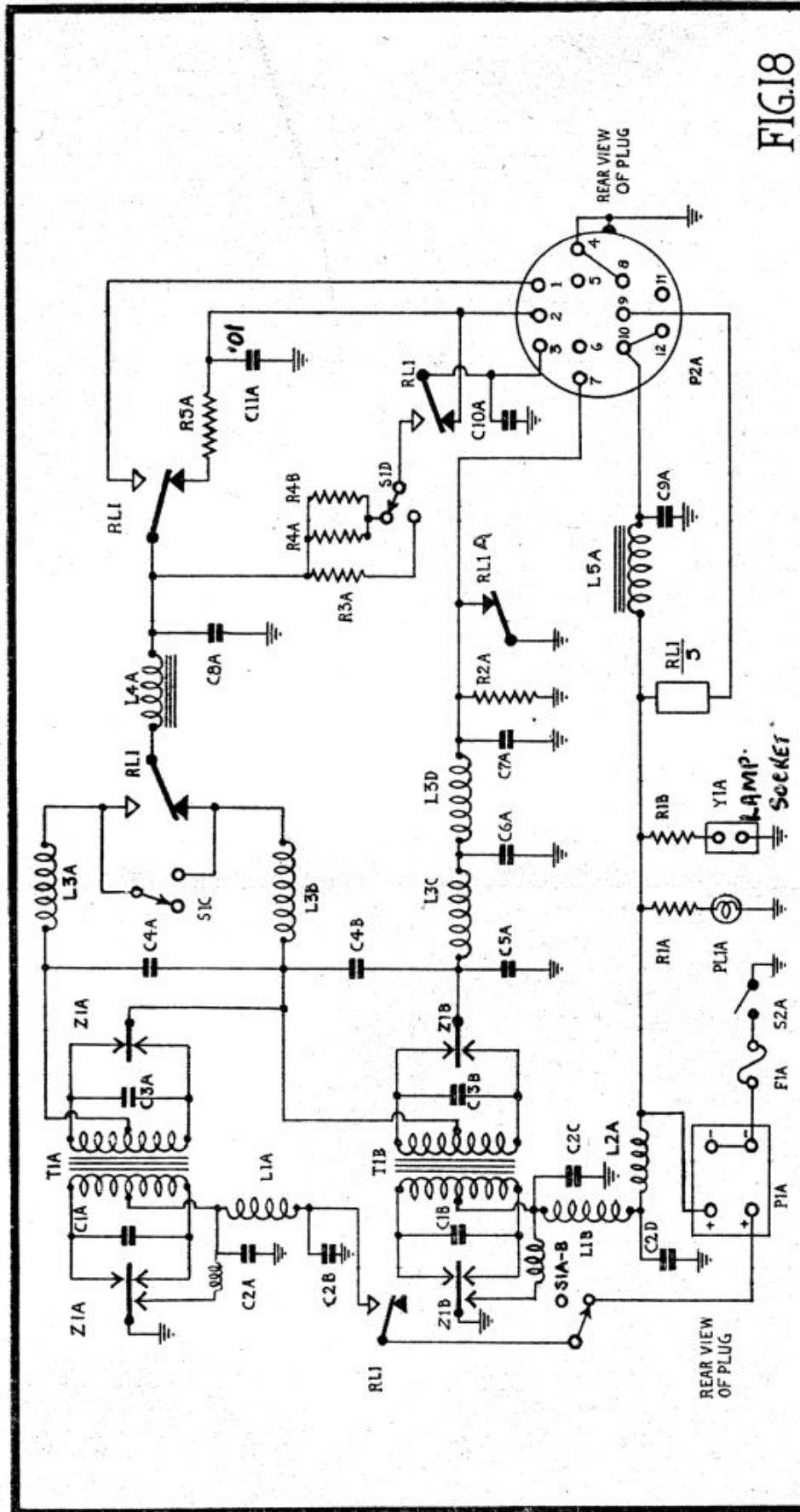


FIG. 18

WIRELESS SET NO. 22
(Aust.) YELLOW BAND
SUPPLY UNIT NO. 1
 SCHEMATIC



SUPPLY UNIT NO. 1 LEGEND

C1A-B	.05 UF	C11A	.01 UF	RL1	SEND/RECEIVE RELAY
C2A-D	1 UF	R1A-B	200 OHM	P1A	BATTERY PLUG
C3A-B	.02 UF	R2A	50,000 OHM	P2A	CABLE PLUG
C4A-B	16 UF	R3A	5,000 OHM	Y1A	LAMP'S OPERATOR SOCKET
C5A	.1 UF	R4A-B	60,000 OHM	S1A-D	HIGH/LOW SWITCH
C6A	.1 UF	R5A	2,000 OHM	S2A	ON/OFF SWITCH
C7A	.0003 UF	T1A-B	POWER TRANSFORMER	F1A	PILOT LAMP
C8A	.5 UF	L1A-B	L.T. FILTER CHOKE	PL1A	VIBRATOR
C9A	16 UF	L2A	L.T. R.F. FILTER CHOKE	Z1A-B	
C10A	.5 UF	L3A-D	H.T. FILTER CHOKE		
	8 UF	L4A	H.T. FILTER CHOKE		
		L5A	L.T. A.F. CHOKE		