

## Volume 3 AMENDMENT No.2

Date of issue: June 2019.

After the publication of 'Wireless for the Warrior' Volume 3 'Reception Sets', a small number of minor (typing) errors and incorrect data was spotted. Corrections, additional photos and newly found items are published in 'Volume 3 Amendments'. If printed on A4 paper, cut away circa 7mm from the bottom and side of the sheet. The prepared sheets will fit snugly between the inside cover and dust cover flap. It is further recommended (if applicable) to amend the text corrections in the book with e.g. a (red) pencil or a fine-liner.



Reception Set  
A.E.W. 1 (NZ)  
Country of origin:  
New Zealand

## DATA SUMMARY

**Design/Manufacturer:** Radio Corporation of NZ.

**Year of Introduction:** Believed 1943

**Purpose:** Entertainment and education.

**Frequency Coverage:** Four ranges: 550-1600kHz, 6-12MHz, 12-17MHz, 16-24MHz.

**Circuit features:** Superheterodyne with an IF of 455kHz; RF stage, mixer/local oscillator, IF stage, detector/AVC/1st AF stage, AF output.

**Sensitivity:** 5-8uV at 550-1600kHz or 15-20uV at 6-24MHz for 500 mW AF output.

**AF output:** 2½ W into 500Ω.

**Valves:** 6U7G (2x), 6K8G, 7Q7G, 6V6G.

**Power Supply:** 6V DC; Internal synchronous vibrator HT power supply unit.

**Size of cabinet (in):** Height 8¾, length 14¼, width 10.

**Weight (lbs):** 34¼.

## References:

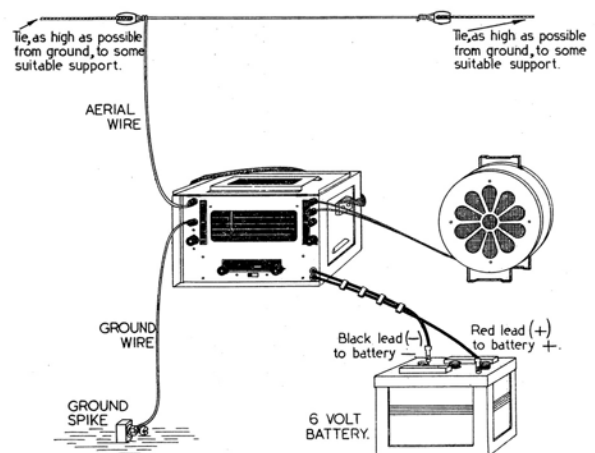
- Working Instructions and Service Bulletin, Reception Set A.E.W.1, (N.Z.). Z1/ZA 30006, Receivers, Broadcast, New Zealand, TYPE B, No. 1. N.d.
- Wireless for the Warrior, Compendium 2, L. Meulstee, 2012, ISBN 978-90-819271-0-9.
- Correspondence with Chris Underwood, New Zealand.

## Remarks

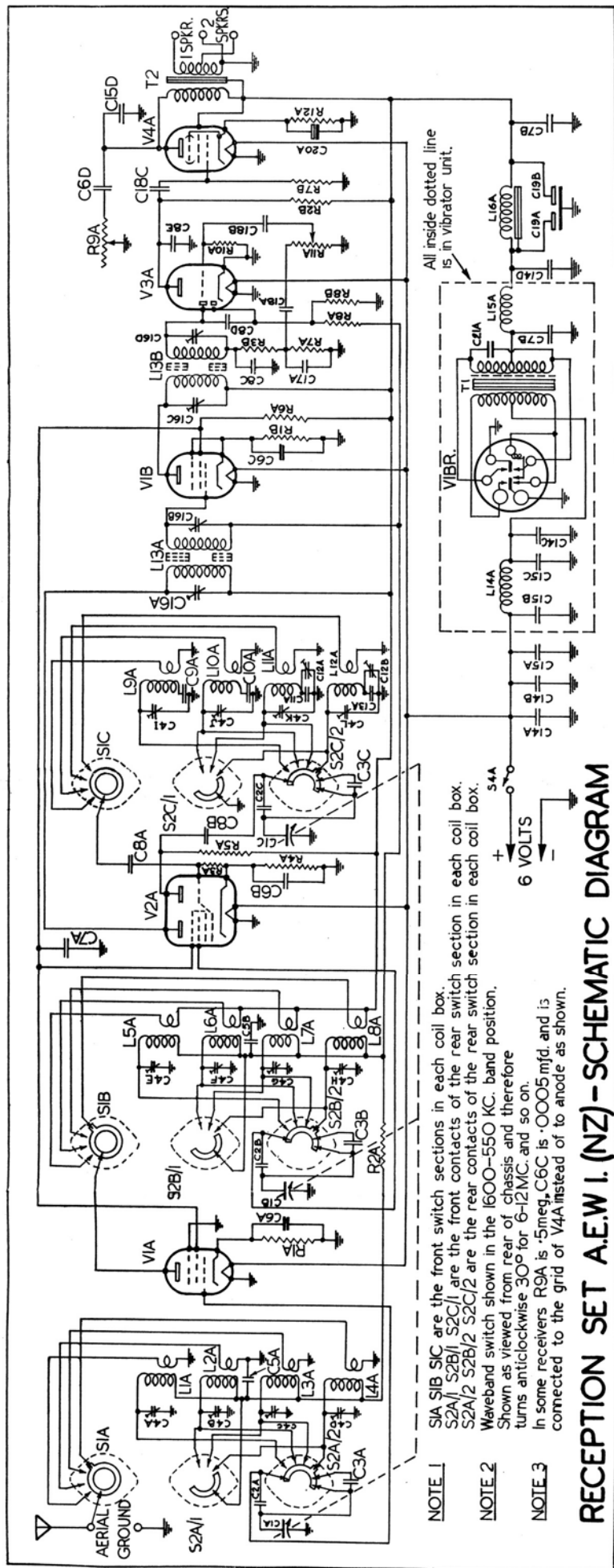
Reception Set A.E.W.\* 1 (N.Z.), also known as Receiver Broadcast New Zealand Type B No. 1, was produced for troop entertainment. The receiver was powered by a 6V accumulator which had the advantage that it could be used at places without mains electricity. Though using standard components and many elements of a civilian broadcast receiver, it was ruggedised and featured an RF stage which provided high sensitivity.

The A.E.W. 1 was built into a steel case with a hinged lid. It was issued as a complete set with two high impedance loudspeakers, aerial and ground wire, and a 6V accumulator.

\*) Believed to be an abbreviation of Army Entertainment Wireless.



Installation of Reception Set A.E.W. 1.



NOTE 1 S1A S1B S1C are the front switch sections in each coil box.  
S2A/1 S2B/1 S2C/1 are the front contacts of the rear switch section in each coil box.  
S2A/2 S2B/2 S2C/2 are the rear contacts of the rear switch section in each coil box.  
NOTE 2 Waveband switch shown in the 1600-550 KC. band position.  
Shown as viewed from rear of chassis and therefore turns anticlockwise 30° for 6-12 MC. and so on.  
NOTE 3 In some receivers R9A is .5meg, C6C is .0005 mfd. and is connected to the grid of V4A instead of to anode as shown.

TABLE OF SWITCHES.

Schematic Reference	Type	Function.
S1A	Rotary, Single Pole 4 way	Aerial Coil Selector
S1B	Rotary, Single Pole 4 way	Detector Coil Primary Selector
S1C	Rotary, Single Pole 4 way	Oscillator Reaction Winding Selector
S2A/1	Rotary, 3 pole shorting	Short Circuit Unused Aerial Coil Secondaries
S2B/1	Rotary, 3 pole shorting	Short Circuit Unused Detector Coil Secondaries
S2C/1	Rotary, 3 pole shorting	Short Circuit Unused Oscillator Coil Secondaries
S2A/2	Rotary, Single Pole 4 way Special Shorting	R. F. Coil Secondary Selector
S2B/2	Rotary, Single Pole 4 way Special Shorting	Detector Coil Secondary Selector
S2C/2	Rotary, Single Pole 4 way Special Shorting	Oscillator Coil Secondary Selector
S4A	10 amp. S.P.S.T.	Battery Switch

TABLE OF VALVES.

Schematic Reference	Type	Function.
V1A	6U7G	Screen Grid R.F. Amplifier
V2A	6X8GT	Hexode-Triode Mixer Oscillator
V1B	6U7G	Screen Grid I.F. Amplifier
V3A	6Q7GT	Duo-Diode Triode 2nd Detector 1st Audio Amplifier
V4F	6V6GT	Beam Tetrode Power Output

TABLE OF INDUCTANCES, CHOKES AND TRANSFORMERS.

Schematic Reference	Function.
L1A	R.F. Coil, 16 to 24 megacycle Band
L2A	R.F. Coil, 12 to 17 megacycle Band
L3A	R.F. Coil, 6 to 12 megacycle Band
L4A	R.F. Coil, 550 to 1600 kilocycle Band
L5A	Detector Coil, 16 to 24 megacycle Band
L6A	Detector Coil, 12 to 17 megacycle Band
L7A	Detector Coil, 6 to 12 megacycle Band
L8A	Detector Coil, 550 to 1600 kilocycle Band
L9A	Oscillator Coil, 16 to 24 megacycle Band
L10A	Oscillator Coil, 12 to 17 megacycle Band
L11A	Oscillator Coil, 6 to 12 megacycle Band
L12A	Oscillator Coil, 550 to 1600 kilocycle Band
L13A	1st I. F. Transformer
L13B	2nd I.F. Transformer
L14A	Vib. L.T. R.F. Choke
L15A	Vib. H.T. R.F. Choke
L16A	Filter Reactor
T1	Vibrator Power Transformer
T2	Output Transformer

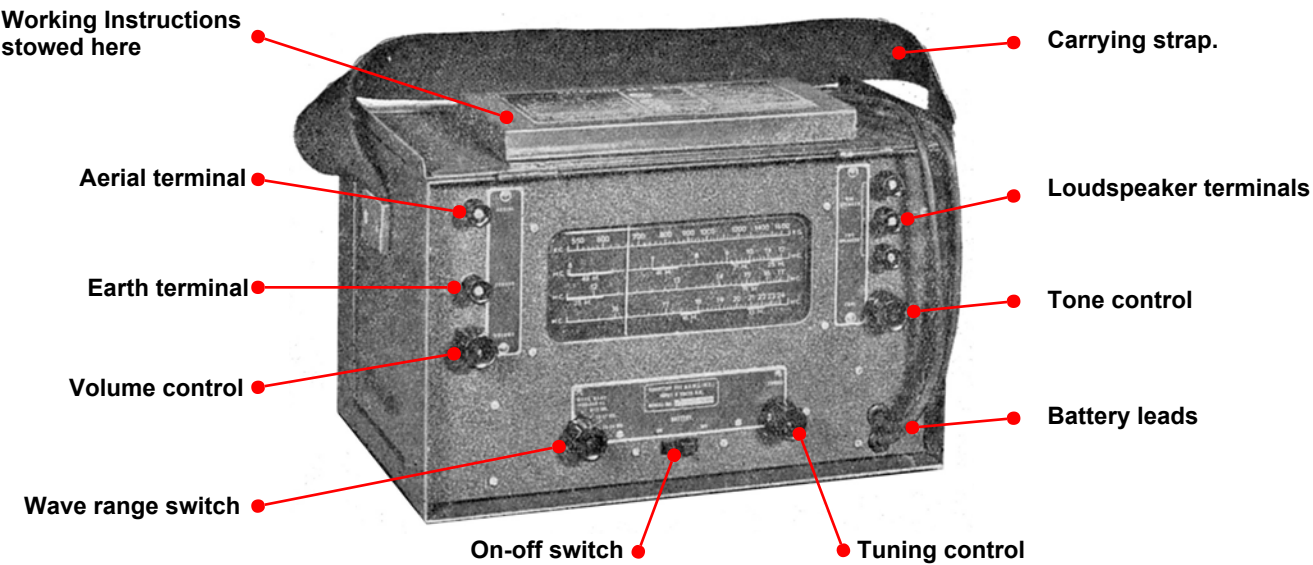
TABLE OF RESISTOR VALUES.

Schem. Ref.	Type	Value	Tolerance	Wattage	Function.
R1A	Carbon, Fixed	300 ohms	± 20%	1/3	Cathode Resistor, V1A
R1B	" "	300 ohms	± 20%	1/3	Cathode Resistor, V1B
R2A	" "	200,000 ohms	± 20%	1/3	AVC Decoupling, R.F. Stage
R2B	" "	200,000 ohms	± 20%	1/3	Anode Load, V3A
R3A	" "	50,000 ohms	± 20%	1/3	Grid Leak, Oscillator
R3B	" "	50,000 ohms	± 20%	1/3	R.F. Filter, Diode Load
R4A	" "	200 ohms	± 20%	1/3	Cathode Resistor, V2A
R5A	" "	25,000 ohms	± 20%	1/3	Anode Feed, Oscillator
R6A	" "	15,000 ohms	± 20%	1½	Screen Dropper, V1A, V2A, V1B
R7A	" "	.5 megohm	± 20%	1/3	Diode Load
R7B	" "	.5 megohm	± 20%	1/3	Grid Leak, V4A
R8A	" "	1 megohm	± 20%	1/3	AVC Feed
R8B	" "	1 megohm	± 20%	1/3	AVC Diode Load
R9A	Carbon Potentiometer	10,000 ohms	—	—	Tone Control
R10A	Carbon, Fixed	5-10 megohms	± 20%	1/3	Grid Leak, V3A
R11A	Carbon Potentiometer	½ megohm	—	—	Volume Control
R12A	Carbon, Fixed	400 ohms	± 20%	½ to 1	Cathode Resistor, V4A

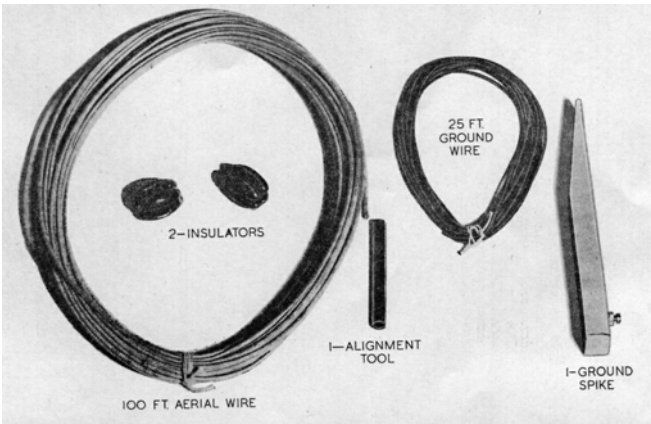
TABLE OF CONDENSER VALUES.

Schem. Ref.	Type	Value	Voltage	Tolerance	Function.
C1A ) C1B ) C1C )	Variable	.00044 mfd.	—	—	Ganged Tuning Condenser
C2A	Silvered Mica	100 mmfd.	—	± 2%	Band-Spread Condenser Aerial Stages, SW2 and SW3
C2B	" "	100 mmfd.	—	± 2%	Band-Spread Condenser Detector Stage, SW2 SW3
C2C	" "	100 mmfd.	—	± 2%	Band-Spread Condenser Oscillator Stage, SW2 and SW3
C3A	" "	200 mmfd.	—	± 2%	Band-Spread Condenser Aerial Stage, SW1
C3B	" "	200 mmfd.	—	± 2%	Band-Spread Condenser Detector Stage, SW1
C3C	" "	200 mmfd.	—	± 2%	Band-Spread Condenser Oscillator Stage, SW1
C4A	Semi Fixed	3-30 mmfd.	—	—	R.F. Trimmer, SW3
C4B	" "	3-30 mmfd.	—	—	R.F. Trimmer, SW2
C4C	" "	3-30 mmfd.	—	—	R.F. Trimmer, SW1
C4D	" "	3-30 mmfd.	—	—	R.F. Trimmer, B.C.
C4E	" "	3-30 mmfd.	—	—	Detector Trimmer, SW3
C4F	" "	3-30 mmfd.	—	—	Detector Trimmer, SW2
C4G	" "	3-30 mmfd.	—	—	Detector Trimmer, SW1
C4H	" "	3-30 mmfd.	—	—	Detector Trimmer, B.C.
C4I	" "	3-30 mmfd.	—	—	Oscillator Trimmer, SW3
C4J	" "	3-30 mmfd.	—	—	Oscillator Trimmer, SW2
C4K	" "	3-30 mmfd.	—	—	Oscillator Trimmer, SW1
C4L	" "	3-30 mmfd.	—	—	Oscillator Trimmer, B.C.
C5A	Tubular Paper	.05 mfd.	400v.	± 20%	AVC R.F. Bypass, R.F. Stage
C5B	" "	.05 mfd.	400v.	± 20%	AVC R.F. Bypass, Detector, and I.F. Stage
C6A	" "	.05 mfd.	600v.	± 20%	R.F. Bypass, Cathode V1A
C6B	" "	.05 mfd.	600v.	± 20%	R.F. Bypass, Cathode V2A
C6C	" "	.05 mfd.	600v.	± 20%	R.F. Bypass, Cathode V1B
C6D	" "	.05 mfd.	600v.	± 20%	Tone Control Condenser
C7A	" "	.1 mfd.	600v.	± 20%	Screen Bypass, V1A, V2A, V1B
C7B	" "	.1 mfd.	600v.	± 20%	H.T. R.F. Bypass
C8A	Mica	.0001 mfd.	400v.	± 20%	Grid Condenser, Triode Section V2A
C8B	" "	.00005 mfd.	400v.	± 20%	Anode Coupling Condenser Triode Section V2A
C8C	" "	.0001 mfd.	400v.	± 20%	R.F. Filter, Diode Load
C8D	" "	.0001 mfd.	400v.	± 20%	AVC Diode Coupling
C8E	" "	.0001 mfd.	400v.	± 20%	2nd Detector Anode, R.F. Bypass
C9A	" "	.006 mfd.	400v.	± 10%	Padder, 16 to 24 M.C. Band
C10A	" "	.0035 mfd.	400v.	± 10%	Padder, 12 to 17 M.C. Band
C11A	" "	.003 mfd.	400v.	± 10%	Padder, 6 to 12 M.C. Band
C12A ) C12B )	Semi Fixed	220 mmfd. max	—	—	Padder, 6 to 12 M.C. Band
C12B )	" "	220 mmfd. max	—	—	Padder, 550 to 1600 K.C. Band
C13A	Mica	.0003 mfd.	400v.	± 10%	Padder, 550 to 1600 K.C. Band
C14A	Tubular Paper	.25 mfd.	400v.	± 30%	L.T. R.F. Bypass
C14B	" "	.25 mfd.	400v.	± 30%	L.T. R.F. Bypass
C14C	" "	.25 mfd.	400v.	± 30%	VIB. L.T. R.F. Bypass
C14D	" "	.25 mfd.	400v.	± 30%	H.T. R.F. Bypass
C15A	Mica	.004 mfd.	400v.	-20% +50%	L.T. R.F. Bypass
C15B	" "	.004 mfd.	400v.	-20% +50%	L.T. R.F. Bypass
C15C	" "	.004 mfd.	400v.	-20% +50%	VIB. L.T. R.F. Bypass
C15D	" "	.004 mfd.	400v.	-20% +50%	R.F. Bypass Anode V4A
C16A ) C16B ) C16C ) C16D )	Semi Fixed	140 mmfd. max.	—	—	Trimmer, Primary 1st I.F. Transformer
C16B )	" "	140 mmfd. max.	—	—	Trimmer, Secondary 1st I.F. Transformer
C16C )	" "	140 mmfd. max.	—	—	Trimmer, Primary 2nd I.F. Transformer
C16D )	" "	140 mmfd. max.	—	—	Trimmer, Secondary 2nd I.F. Transformer
C17A	Mica	.00005 mfd.	400v.	± 20% +50%	R.F. Bypass, Diode Load
C18A	Tubular Paper	.02 mfd.	600v.	± 20%	Diode Load, Audio Coupling
C18B	" "	.02 mfd.	600v.	± 20%	Coupling, Grid V3A
C18C	" "	.02 mfd.	600v.	± 20%	Coupling, Grid V4A
C19A ) C19B )	Electrolytic	10+10 mfd.	450v.	—	H.T. L.F. Filtering
C19B )	" "	10+10 mfd.	450v.	—	H.T. L.F. Filtering
C20A	" "	25 mfd.	25v.	—	Audio Bypass, Cathode V4A
C21A	Mica	.01 mfd.	1800v.	± 20%	Buffer Condenser

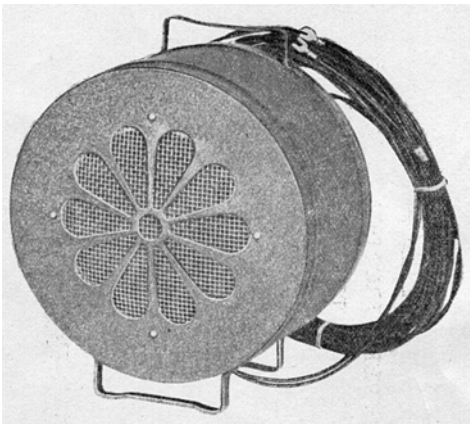




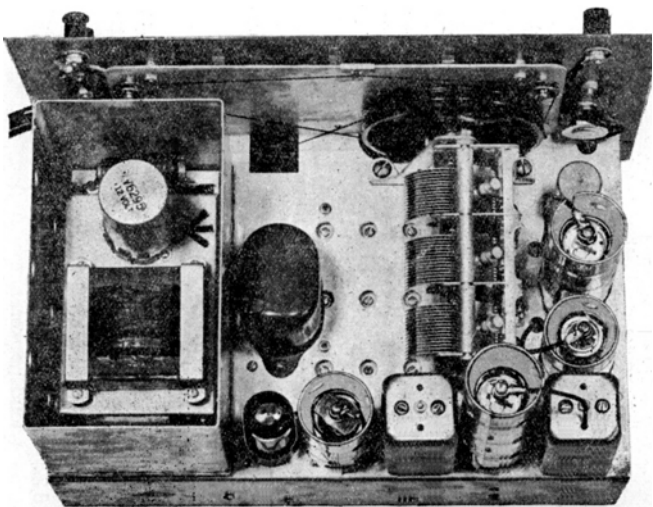
Overview of features and functions of controls A.E.W. 1 receiver.



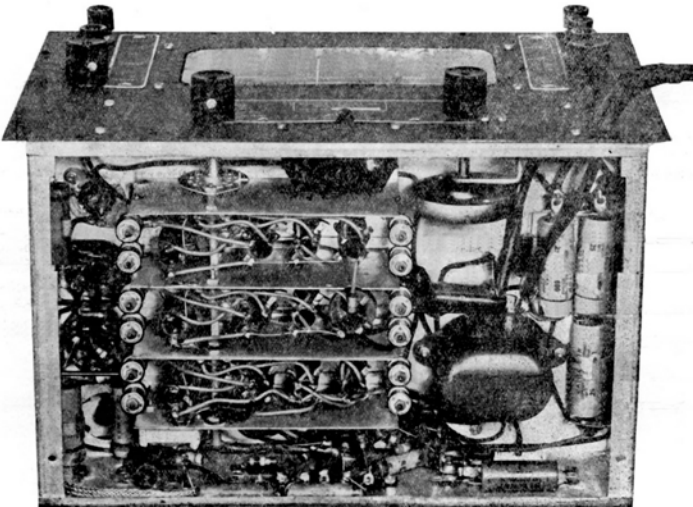
A.E.W. 1 aerial and earth installation kit.



High impedance loudspeaker as issued with the A.E.W. 1.



Top chassis view showing screened vibrator power pack at the left hand side of the chassis.



Bottom view with cover detached.