

HIS MASTER'S VOICE

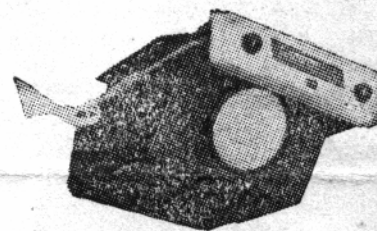


SERVICE SHEET

ISSUED BY SERVICE DIVISION, HIS MASTER'S VOICE (N.Z.) LTD, G.P.O. BOX 108, WELLINGTON

RADIOMOBILE

MODEL 516 A/R



When a radio is installed for the first time almost invariably some additions must be made to the car to reduce the interference caused by its electrical system. Ignition noise caused by spark plug and distributor discharge setting up R.F. oscillations in the H.T. circuit of the car wiring should be damped by a distributor resistor connected in the H.T. lead from the coil close to the distributor. This alteration to the H.T. circuit will usually change its constants sufficiently to reduce the intensity of the noise.

If interference is transferred to the low tension circuit it is necessary to bypass the ammeter or other point at which the L.T. supply is taken to the Radio. The live battery terminal is usually the point of lowest impedance to noise voltages and should be used if it does not require the use of a long battery lead.

These simple methods suffice in most installations but where more is required, bypassing of other L.T. points should be tried as well as a routine check to see if bonding of cables and controls will prevent the interference being transferred through the bulkhead.

Before too much time is spent on the above methods a spark plug suppressor resistor inserted in the spark plug wire at each plug should be tried.

Objections to this method on the grounds of impairment of engine performance are usually unfounded as it was extensively used during the war on military vehicles.

Generator noise is easily located by revving up the engine, then switching off the ignition. This noise is bypassed to earth by connecting the condenser at the generator armature terminal. Do not connect this condenser to the generator field terminal.

See overleaf for technical and service data



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RADIOMOBILE

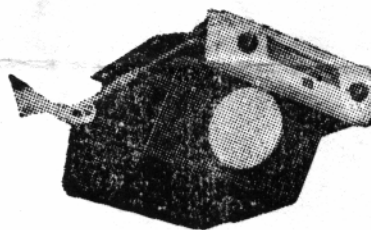
MODEL 516 A/R

This set with its separate power supply is similar in appearance to the earlier Model 496 A/R but neither unit is interchangeable with the corresponding unit of the older model.

VALVE VOLTAGE TABLE

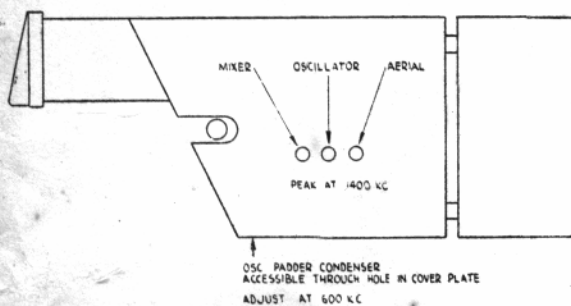
Conditions	No Signal	Volume Control off	
Volt Meter	1000 ohms per volt.	Voltage to Chassis.	
VALVE	PLATE	SCREEN	CATHODE
6SK7 RF	200	55	1.1
6K8 Mixer	200	55	—
6SK7 IF	190	55	—
6SQ7 2nd Det.	75	—	—
6V6 Output	200	230	12.5
Rectifier			255

Tolerance $\pm 10\%$

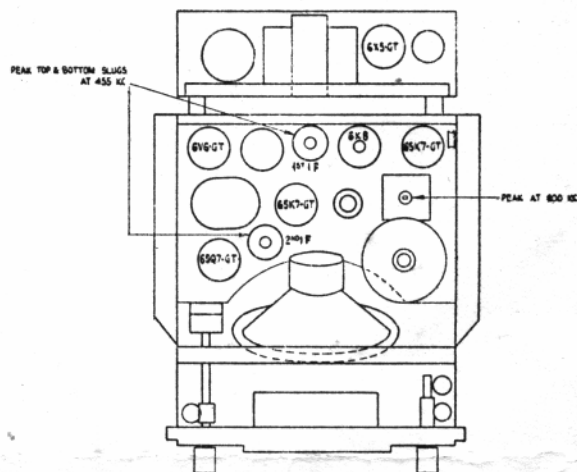


NOTE—Illustration shows Model 496 A/R
New model has metal speaker grill.

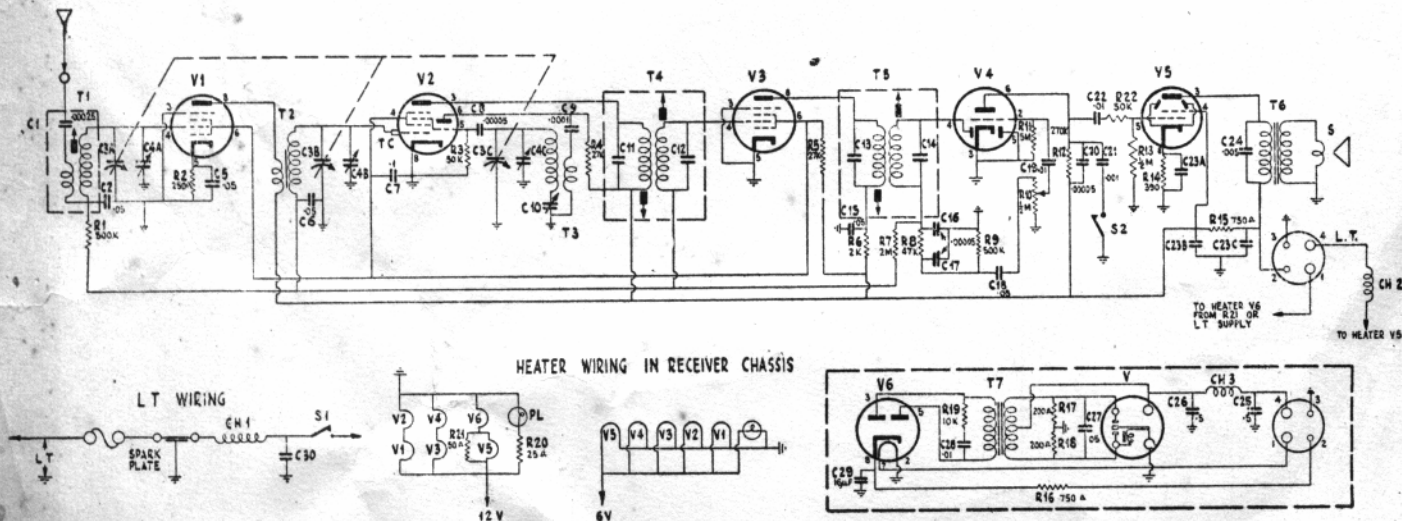
In the 6 volt model the voltages are 5% lower.
The battery current drain is subject to the same tolerance.



TRIMMER LOCATION CHART



TUBE LOCATION CHART



GENERAL SPECIFICATIONS

Low Tension Supply: 12 volt or 6 volt. No voltage changeover is provided in the new model.

Polarity of Supply: This model may be used with either positive earthed or negative earthed car systems.

High Tension Supply: Non synchronous vibrator with hard valve rectifier.

Power Consumption: 12 Volt—3.3 amps; 6 Volt—6 amps.

Frequency Coverage: Broadcast Band 550 Kc/s to 1500 Kc/s.

Intermediate Frequency: 455 Kc/s.

Speaker: Contained in receiver chassis. A high quality 5 inch permanent magnet type.

Two Unit Construction: Power Supply a separate unit which may be bolted to the back of the receiver case or mounted separately and connected to the receiver by means of a flexible shielded cable.

Controls: Tuning; Volume and on-off switch; Tone control—A two position slide type switch is provided on the speaker panel below the tuning control knob.

Aerial: The set is designed for use with the whip aerial and shielded aerial lead supplied. Use of an aerial lead cable of different length or different capacity may cause considerable deterioration in the set's performance.

I.F. ALIGNMENT

1.—By means of a shorting strap short oscillator gang stator to earth. The oscillator section of the 3 gang condenser is the centre one.

2.—Inject a modulated signal of 455 K/c between 6K8 grid and earth.

3.—Adjust the four threaded slugs of T4 and T5 for maximum output as indicated by an output meter connected to the speaker voice coil terminals. Top slugs resonate secondaries, bottom slugs under the chassis resonate primaries. Repeat the procedure until no further increase in output can be made.

4.—Remove oscillator shorting strap.

1. Connect a whip aerial to the receiver by means of a cable of normal length and supply it with a modulated signal from the signal generator by means of a coupling loop. This can be a loop aerial from a personal portable battery receiver or even a number of turns loosely coupled to the whip.

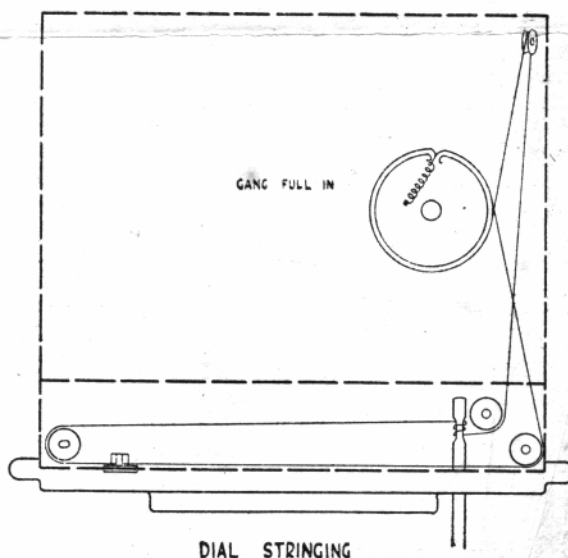
2. Check the dial pointer travel for equal displacement from either end of the scale.

3. Set the signal generator to 600 Kc. and adjust the padder C10 and the screw slug of T1 for maximum output.

4. Set signal generator to 1400 Kc and adjust trimmers, C4C, oscillator, C4B, mixer, and C4A aerial for maximum output. These condensers are shown on the trimmer location chart.

5. Repeat these adjustments at both I.F. and H.F. ends of the scale until no increase in output can be obtained.

6. When the set is installed in the car re-adjust the aerial trimmer C4A for maximum sensitivity at the H.F. end of the band. It will be noticed during alignment that the adjustment of C4B is much sharper than C4A. This is in order. For all adjustments, both IF and RF, the volume control should be full on and the signal generator output at the lowest setting necessary for indication of resonance.



C1	.00025 μ F MICA	R1	500 K $\frac{1}{2}$ W	T1	AERIAL COIL # C0 347
C2	.05 μ F 350 V TCC TYPE 346	R2	250 Ω $\frac{1}{2}$ W	T2	RF COIL # C0 368
C3	PLESSEY 3 GANG TYPE R	R3	50 K $\frac{1}{2}$ W	T3	OSCILLATOR COIL # C0 361
C4	3 TRIMMER ASSEMBLY	R4	27 K 1 W	T4	IF TRANSFORMER # TR 27
C5	.05 μ F 350 V TCC TYPE 346	R5	27 K 2 W	T5	IF TRANSFORMER # TR 27
C6	.05 μ F 350 V TCC TYPE 346	R6	2 K $\frac{1}{2}$ W	T6	SPEAKER TRANSFORMER ROLA SIC
C7	.1 μ F 350 V P.I.	R7	2 M Ω $\frac{1}{2}$ W	T7	VIBRATOR TRANSFORMER TR 704 (12 V) AND TR 702 (6 V) MODIFIED
C8	.00005 μ F MICA	R8	50 K $\frac{1}{4}$ W		
C9	.0001 μ F MICA	R9	500 K $\frac{1}{4}$ W		
C10	HUNTS PADDER TP 10	R10	$\frac{1}{2}$ M V C WITH SWITCH (CTS)		
C11	.0001 μ F 5M	R11	4.7 M Ω $\frac{1}{4}$ W	CH 1	LT CHOKE 15 \pm $\frac{1}{4}$ " I.D.
C12	" " "	R12	270 K $\frac{1}{3}$ W	CH 2	HEATER CHOKE 10 \pm $\frac{1}{4}$ " I.D.
C13	" " "	R13	500 K $\frac{1}{2}$ W	CH 3	PRIMARY CT CHOKE # CH 548
C14	" " "	R14	390 Ω 1 W		
C15	.05 μ F 350 V TCC TYPE 346	R15	750 Ω 5 W W W		
C16	.00005 μ F MICA	R16	750 Ω 5 W W W		
C17	.00005 μ F MICA	R17	200 Ω 1 W 2x390 Ω 1 WATT IN 12V	V 1	6SK7 GT
C18	.05 μ F 350 V TCC TYPE 346	R18	200 Ω 1 W 2x390 Ω 1 WATT IN 12V	V 2	6K8
C19	.01 μ F 750 V TCC	R19	15 K $\frac{1}{4}$ W IN 6V, 10 K $\frac{1}{4}$ W IN 12V	V 3	6SK7 GT
C20	.00005 μ F MICA	R20	25 Ω 2 WATT 2x50 Ω 1 WATT	V 4	6SQ7 GT
C21	.001 μ F MICA		(NOT USED IN 6 V)	V 5	6V6 GT
C22	.01 μ F 750 V TCC	R21	50 Ω 2 WATT 2x100 Ω 1 WATT	V 6	6X5 GT
C23	AEROVOX 40-40-20 400 V ELECTRO		(NOT USED IN 6 V)		
C24	.005 μ F 500 V OJ	R22	50 K $\frac{1}{4}$ W		
C25	.5 μ F 100 V DUCON			S	SPEAKER ROLA 5H LESS TRANSFORMER
C26	.5 μ F 100 V DUCON				
C27	.05 μ F 350 V HUNTS (12 VOLT ONLY)			V	VIBRATOR PLESSEY 614A OR 1214
C28	.01 μ F 800 V A.C. IN 12V .008 1600V D.C. IN 6V				
C29	16 μ F 525 V DUCON ELECTRO			S 1	PART OF R 10
C30	.5 μ F 100 V DUCON			S 2	TONE SWITCH SLIDE TYPE