

# ALIGNMENT TABLE

**NOTE:** The replacement of any valve in the receiver will not affect the alignment of the tuned circuits in any way providing the recommended Radiotron type is used.

### A. General:

Order	Connect "High" Side of Generator to:	Tune Generator to:	Tune Receiver to:	Adjust for maximum peak output:
1	12-6BE6 Pin 7*	455 Kc/s.	L.F. Limit	T2 Sec. Core (Top)
2	12-6BE6 Pin 7*	455 Kc/s.	L.F. Limit	T2 Pri. Core (Bottom)
3	12-6BE6 Pin 7*	455 Kc/s.	L.F. Limit	T1 Sec. Core (Top)
4	12-6BE6 Pin 7*	455 Kc/s.	L.F. Limit	T1 Pri. Core (Bottom)
Repeat the above adjustments until the maximum output is obtained.				
5	Aerial Terminal via Dummy Aerial.	1650 Kc/s. (accurate)	H.F. Limit	H.F. Osc. Adj. (C10)
6	Aerial Terminal via Dummy Aerial.	1500 Kc/s.	1500 Kc/s.	H.F. R.F. Adj. (C6)
7	Aerial Terminal via Dummy Aerial.	1500 Kc/s.	1500 Kc/s.	H.F. Aer. Adj. (C1)
8	Aerial Terminal via Dummy Aerial.	600 Kc/s.	600 Kc/s.	L.F. Osc. Padder Adj. (L5) §
Repeat adjustments 5, 6, 7 and 8 until no further adjustment is possible.				
9	<b>Calibration Alignment:</b> With the receiver connected to an aerial, the dial scale calibration should now be checked and corrected if necessary. The pointer can be moved relative to the dial scale by turning the eccentric stud located underneath the rear end of the pointer arm.			

\* A 0.01  $\mu$ F capacitor should be connected in series with the high side of the test instrument.

§ Rock the tuning control back and forth through the signal.

### B. Tuner Alignment:

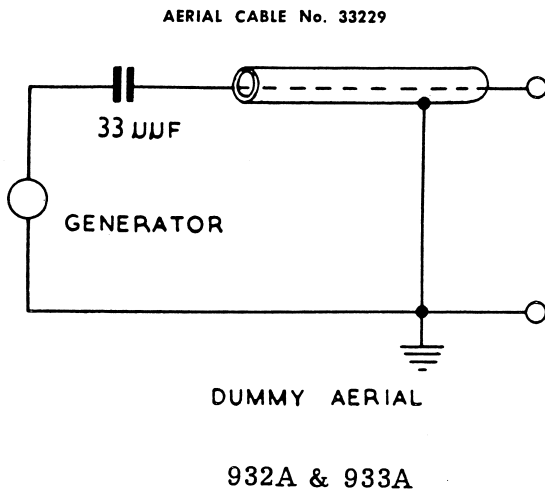
The adjustment of the three tuning cores will be necessary only if a tuning core or coil has been replaced. To make this adjustment proceed as follows:—

- (1) Adjust the manual drive control until a 0.560" gauge can be slipped into the left rear slot in front of the carriage lug. Use the 0.560" gauge in the manner of a feeler gauge.
- (2) Tune the signal generator accurately to 1000 Kc/s. and connect it to the aerial terminal via the dummy aerial.
- (3) Adjust the Oscillator Core followed by the Aerial and R.F. Cores until the maximum output is obtained.
- (4) Proceed with adjustments 5, 6 and 7 in Table "A" and then repeat adjustment 3 above, if necessary.
- (5) Seal the tuning core studs.

## REPLACEMENT PARTS

The following is a list of parts that may require replacement during the life of the receiver:—

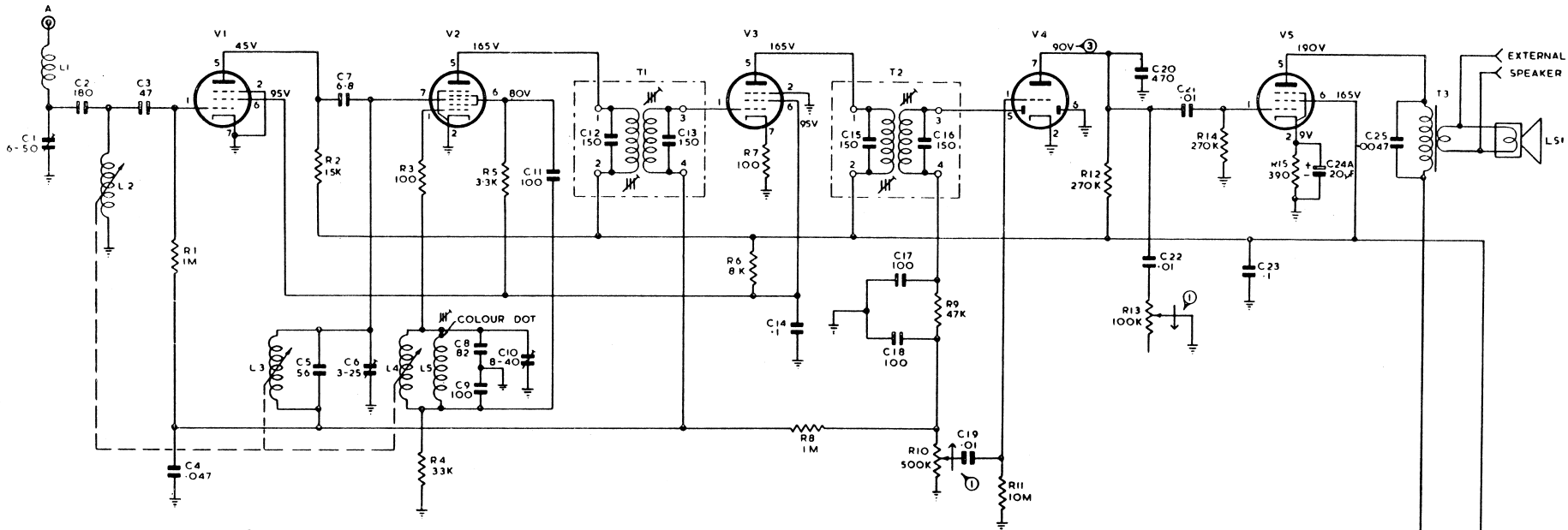
ITEM	PART No.	CODE No.
<b>Tuning Unit</b>		
Crown Gear Bush Assembly .....	34688	
Drive Shaft Bushing .....	34665	
Drive Spindle Assembly .....	36580	
Manual Drive Bracket .....	35106	
Pointer Assembly .....	34689	
Tuning Unit Assembly .....	36561	
Slug, Tuning .....	35102	
<b>Chassis</b>		
Cover, Transformer .....	33220	
Grommet DI .....		389000
Label, Valve Replacement .....	28592	
Lamp Holder Assembly .....	4194	
Mounting Nut .....		492071
Power Cable L.T. Female .....	34356	
Power Cable L.T. Male .....	34355	
Spacer Nut .....	34644	
Socket, 7 pin .....		794568
Socket, Vibrator 4 pin wafer .....		793051
<b>Miscellaneous</b>		
Aerial Cable Assembly (5'6" long) .....	33229	
Cover, Front Trim .....	36566	
Escutcheon Assembly .....	35192B	
Knob Assembly .....	35045	
Knob, Push-button .....	34230	
Mounting Strap .....	35992	
Stud .....	35993	
Tail Strap .....	24571	



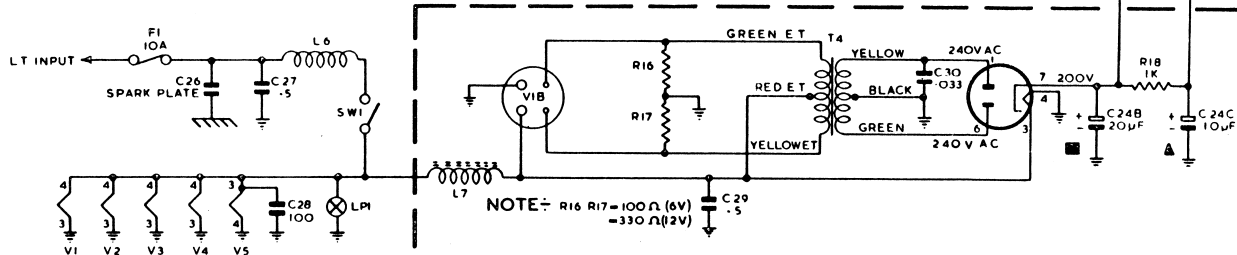
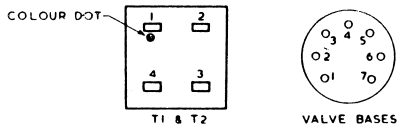
# PUSH BUTTON TUNER ASSEMBLY

Possible faults and adjustment procedure (Refer to Figs. 1 and 2)

Fault	Cause	Remedy
Manual Drive slipping.	1. Lack of clearance between slide (1) and clutch gate (2).	Bend tang (3) of clutch gate outwards to give minimum clearance of .010" on all slides. Avoid bending too far as this will result in clutch not disengaging when button is depressed.
	2. Loose riveting of universal coupling (4) or clutch plate (5) to Pinion shaft.	Replace manual drive shaft assembly. Replace clutch assembly.
Station is detuned when locking button.	Paddle plate (6) loose.	Loosen locknut and tighten adjusting screw (7). Retighten locknut.
Button sticking in.	1. Insufficient clearance of manual drive shaft in forked bracket (8).	Adjust by bending bracket slightly to widen the slot.
Backlash in manual drive.	2. Button or slide touching light shield or front moulding.	Loosen nuts behind the knobs, move the shield or moulding to give clearance and retighten the nuts.
Pointer sticking or jumpy.	Excessive clearance of manual drive shaft in forked bracket.	Bend the bracket to reduce the clearance in the slot.
	1. Pointer arm touching the case.	Adjust by bending the pointer arm slightly.
	2. Pointer touching dial diffusion plate.	
	3. Adjusting stud (9) at rear of pointer arm binding in slot in tuner frame.	
Station setting moves after button is used a few times.	Cam (10) on slide (1) not locking securely.	Replace tuner, It is not possible to repair in the field.



**BASE CONNECTIONS**



**932A 6V MODEL**  
**933A 12V MODEL**

**932A & 933A**

- NOTE:**
- ① ARROW INDICATES DIRECTION OF CLOCKWISE ROTATION
  - ② VOLTAGES MEASURED ON A 20,000 OHM/VOLT METER, WITH VOLUME & TONE CONTROLS MAX. CLOCKWISE AND NO SIGNAL INPUT.
  - ③ VOLTAGE VARIES WITH METER SENSITIVITY

CIRCUIT CODE — RADIOLA CAR RADIO 932-A, 933-A

Code No.	Description	Part No.
<b>INDUCTORS</b>		
L1	Aerial Choke .....	34336
L2	Tuning Coil (Aerial) .....	36562
L3	Tuning Coil (R.F.) .....	
L4	Tuning Coil Osc.) .....	
L5	Oscillator Padder Coil .....	35471
L6	L.T. Choke .....	35472
L7	L.T. Choke .....	36926
<b>TRANSFORMERS</b>		
T1	1st I.F. Transformer .....	35458
T2	2nd I.F. Transformer .....	35458
T3	Audio Output Transformer .....	21455A
T4	Vibrator Transformer (932-A) .....	25863
	(933-A) .....	25865
<b>RESISTORS</b>		
	All resistors $\pm 20\%$ unless otherwise stated.	
R1	1 Megohm $\frac{1}{2}$ watt	
R2	15 K ohms 1 watt	
R3	100 ohms $\frac{1}{2}$ watt	
R4	33 K ohms $\frac{1}{2}$ watt	
R5	3.3 K ohms $\frac{1}{2}$ watt	
R6	8 K ohms 2 watts	
R7	100 ohms $\frac{1}{2}$ watt	
R8	1 Megohm $\frac{1}{2}$ watt	
R9	47 K ohms $\frac{1}{2}$ watt	
R10	500 K ohms Volume Control .....	37202
R11	10 Megohms $\frac{1}{2}$ watt	
R12	270 K ohms 1 watt	
R13	100 K ohms Tone Control (Ganged to R10)	
R14	270 K ohms $\frac{1}{2}$ watt	
R15	390 ohms $\pm 10\%$ 1 watt	
R16	100 ohms $\frac{1}{2}$ watt (932-A)	
	330 ohms 1 watt (933-A)	
R17	100 ohms $\frac{1}{2}$ watt (932-A)	
	330 ohms 1 watt (933-A)	
R18	1 K ohms $\pm 10\%$ 2 watts	
<b>CAPACITORS</b>		
C1	6-50 pf trimmer (Aerial) .....	31954
C2	180 pf $\pm 2\frac{1}{2}\%$ silvered mica	
C3	47 pf $\pm 5\%$ N750 tubular ceramic	
C4	0.047 $\mu$ f 200 volts working paper	
C5	56 pf $\pm 5\%$ N750 tubular ceramic	

Code No.	Description	Part No.
C6	3-25 pf trimmer (R.F.)	33304
C7	6.8 pf $\pm 20\%$ N750 bead ceramic	
C8	82 pf $\pm 5\%$ N750 tubular ceramic	
C9	100 pf $\pm 5\%$ NPO tubular ceramic	
C10	8-40 pf spiral trimmer .....	231185
C11	100 pf $\pm 10\%$ silvered mica	
C12	150 pf $\pm 5\%$ silvered mica (in 1st I.F.)	
C13	150 pf $\pm 5\%$ silvered mica (in 1st I.F.)	
C14	0.1 $\mu$ f 400 volt working paper	
C15	150 pf $\pm 5\%$ silvered mica (in 2nd I.F.)	
C16	150 pf $\pm 5\%$ silvered mica (in 2nd I.F.)	
C17	100 pf $\pm 100\%$ $-0\%$ K5000 ceramic	
C18	100 pf $\pm 100\%$ $-0\%$ K5000 ceramic	
C19	0.01 $\mu$ f 200 volt working paper	
C20	470 pf $\pm 20\%$ K1200 ceramic	
C21	0.01 $\mu$ f 400 volt working paper	
C22	0.01 $\mu$ f 400 volt working paper	
C23	0.1 $\mu$ f 400 volt working paper	
C24A	20 $\mu$ f 25 volt working Electrolytic	
C24B	20 $\mu$ f 450 volt working Electrolytic	
C24C	10 $\mu$ f 350 volt working Electrolytic	
C25	0.0047 $\mu$ f 600 volt working paper	
C26	Spark plate	
C27	0.5 $\mu$ f 200 volt Hunt W48	
C28	100 pf $\pm 10\%$ silvered mica	
C29	0.5 $\mu$ f 200 volt Hunt W48	
C30	0.033 $\mu$ f $\pm 10\%$ 600 volt working paper	
<b>VALVES</b>		
	(932-A)	(933-A)
V1	6BA6	12BA6
V2	6BE6	12BE6
V3	6BA6	12BA6
V4	6AV6	12AV6
V5	6AQ5	12AQ5
V6	6X4	12X4
<b>MISCELLANEOUS</b>		
LS1	5" Permanent Magnet Loudspeaker .....	21162
SW1	Power ON/OFF Switch (incl. on R10)	
LPI	Dial Lamp 6.3V, .35 amp. M.E.S. (932-A)	
	12V, 2.2 watt M.E.S. (933-A)	
VIB	Vibrator Cartridge V5105 (6 volt)	
	V5123 (12 volt)	
FI	10 amp. Fuse	

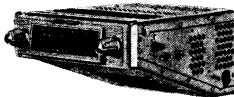
# TECHNICAL INFORMATION AND SERVICE DATA



A63

## A.W.A. Transistor Car Radios

### Models 934-A and 935-A



ISSUED BY  
AMALGAMATED WIRELESS (AUSTRALASIA) LTD.

### GENERAL DESCRIPTION

Models 934-A and 935-A are respectively negative and positive earthed, five-valve and one transistor, permeability-tuned superheterodyne car radios designed for the reception of the Medium Wave Band.

These receivers operate directly from a 12 volt battery without a vibrator high voltage supply.

Features of design include: High gain I.F. transformers; permeability-tuning unit with high degree of electrical and mechanical stability; low drift oscillator circuit, high sensitivity 5 inch speaker and provision for external speaker; transistor output stage.

### ELECTRICAL AND MECHANICAL SPECIFICATIONS

Frequency Range .....	530-1650 Kc/s (566-182 Metres)
Intermediate Frequency .....	455 Kc/s
Battery Voltage .....	12 volts
Battery Consumption .....	1.3/4 amps.
Loudspeaker 5in. Permanent Magnet .....	21606
Loudspeaker Transformer .....	38127A
V.C. Impedance .....	15 ohms at 400 c.p.s.
Undistorted Power Output .....	2 watts

Controls: Manual Tuning, Volume, Tone, Power Switch.

**Valve Complement:**

Radiotron 12BL6	R.F. Amplifier
Radiotron 12AD6	Converter
Radiotron 12BL6	I.F. Amplifier
Radiotron 12F8	Detector, A.V.C., A.F. Amplifier
Radiotron 12K5	Audio Amplifier
AWV 2N301	Audio Output Power Transistor

The aerial assemblies designed for use with these models are as follows:—

- No. 38218—Top Cowl/Fender (4')
- No. 27649—Top Cowl/Fender (6')
- No. 34860—Side Cowl

### TWO SPEAKER OPERATION

The common practice of connecting a second speaker in parallel with the existing one can be tolerated in a receiver having a valve output stage.

Impedance matching is more important in a receiver having a transistor output stage and, in this case, any reduction in the correct loading of 15 ohms will result in considerable distortion.

If a second speaker is desired, it can be connected as shown in fig. 1, utilising a fader control.

For this purpose a special kit No. 34787 is available comprising a 6 inch 15 ohm speaker, baffle and fader control unit.

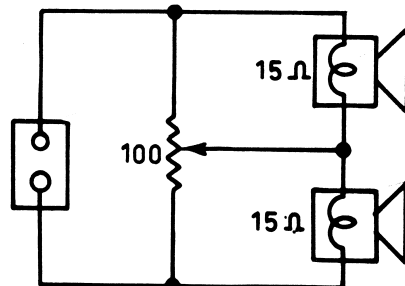
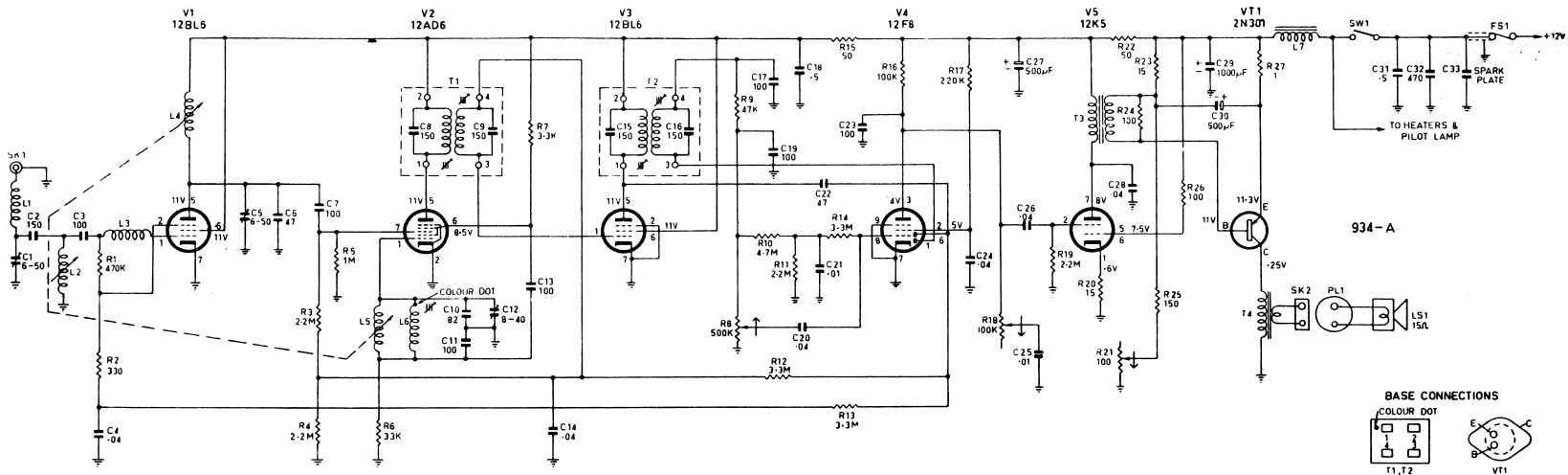
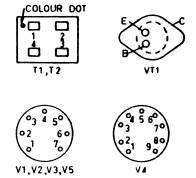


FIG. 1



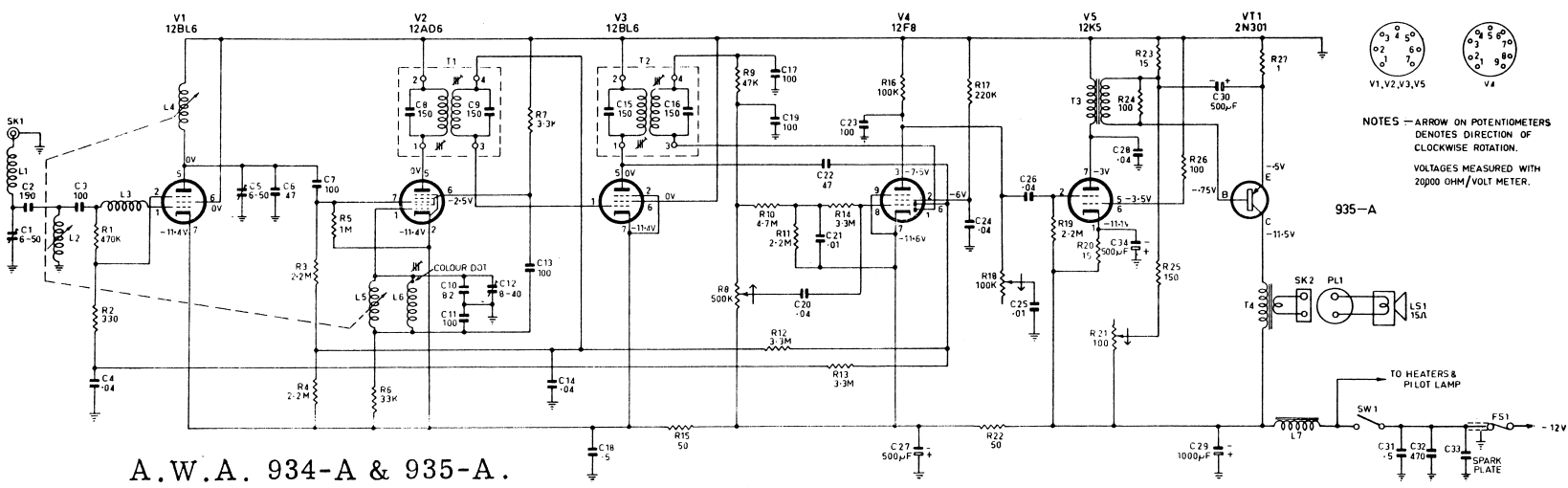
934-A

BASE CONNECTIONS



NOTES — ARROW ON POTENTIOMETERS DENOTES DIRECTION OF CLOCKWISE ROTATION.  
VOLTAGES MEASURED WITH 20000 OHM/VOLT METER.

935-A



A.W.A. 934-A & 935-A.

Note: The following changes to above circuit were incorporated in chassis with Serial Nos. between 57492 and 57791, and from Serial No. 62597 onwards:—  
R2 deleted; R3 became 4.7 Megohms; R12 became 1.5 Megohms; Pin 2 of V1 now connected to junction of R3 and R4.