Model 82

Battery Operated Radio Receiver

Specifications

Frequency Range:

Broadcast Band

I.F.:

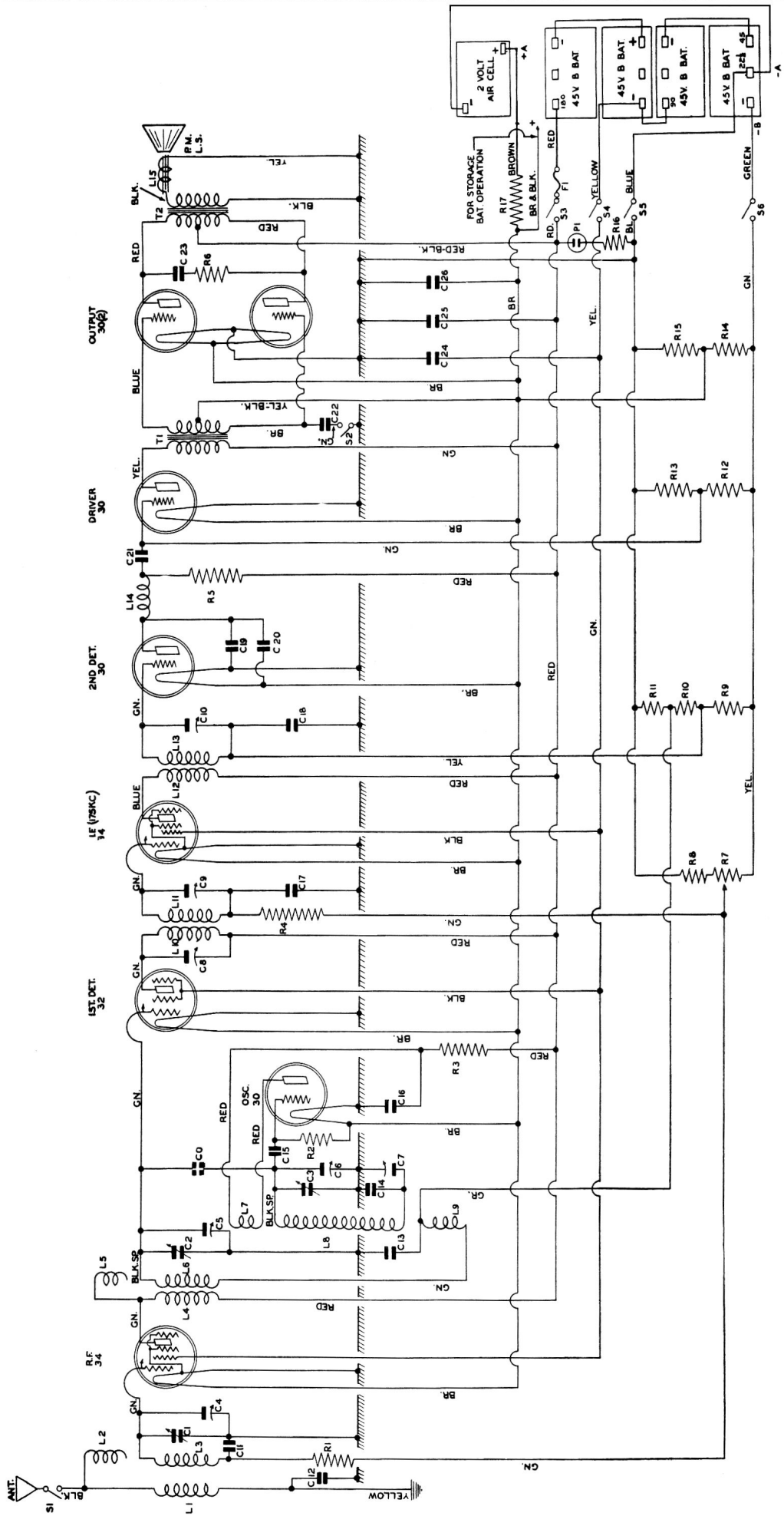
175 K.C.

Tubes:

Type	Position
34	R.F. Amplifier
30	Oscillator
32	1st Detector
34	I.F. Amplifier
30	2nd Detector
30	1st A.F. Amplifier
30)	Class B
30)	Power Amplifier

Controls:

Battery "On-Off" switch; Tone control; Tuning control; "Local-Distance" switch in antenna circuit in rear of cabinet.



Schematic Diagram—Model 82 Receiver

NEON PILOT LIGHT:—When replacing the neon glow lamp used as a dial indicator pilot light, we would recommend that the two screws retaining the lamp bracket to the chassis be removed instead of attempting to force the bulb and holder from the retaining bracket. This will facilitate removal of the old bulb and fitting of the new one.

REPLACEMENT PARTS LIST

CAPACITORS:—

C-1	Antenna R.F. Transformer Secondary	Main Tuning gang; Three unit with Trimmers	R-6717
C-2	R.F. Transformer Secondary		
C-3	Oscillator Tuning		
C-4	Trimmer R.F. Transformer Secondary		
C-5	Trimmer Second R.F. Transformer Secondary		
C-6	Trimmer Oscillator Parallel Pad		
C-7	Oscillator Series		R-7062
C-8	Trimmer Primary 1st I.F. Amplifier (140-220 mmf		Part of R-6489
C-9	Trimmer Secondary 1st I.F. Amplifier (140-220 mmf)		
C-10	Trimmer Secondary 2nd I.F. Amplifier (10-70 mmf)		Part of R-6712
C-11	R.F. Coupling, .1 mfd		R-3641
C-12	Bias By-Pass, .02 mfd		R-3639
C-13	R.F. Coupling, .1 mfd		R-3641
C-14	Oscillator Series, 745 mmf		R-2734
C-15	Oscillator Grid, 80 mmf		R-3711
C-16	Oscillator Plate By-Pass, .1 mfd		R-3641
C-17	Bias By-Pass, .1 mfd		R-3641
C-18	Bias By-Pass, .1 mfd		R-3641
C-19	2nd Det. Plate By-Pass, 1200 mmf		RS-1366
C-20	2nd Det. Plate By-Pass, 1200 mmf		RS-1366
C-21	D.C. Blocking, 2400 mmf		R-3472
C-22	Tone Control, .025 mfd		RS-1357
C-23	Output Stage Plate By-Pass, .005 mfd		R-3617
C-24	Screen By-Pass, .25 mfd		R-3702
C-25	Plate By-Pass, 8 mfd		R-6548
C-26	Filament By-Pass, .5 mfd		R-6604

RESISTORS:—

R-1	R.F. Grid Filter—500,000 ohms, ½ watt.	K-2226-3
R-2	Oscillator Grid Leak—40,000 ohms, ½ watt	K-2226-34
R-3	Oscillator Plate—28,000 ohms, 1 watt	RS-1178
R-4	I.F. Grid Filter—500,000 ohms, ½ watt	K-2226-3
R-5	2nd Det. Plate—90,000 ohms, ½ watt	R-3912
R-6	Output Stage Plate Filter—20,000 ohms, ½ watt	K-2226-8
R-7	Volume Control—0-50,000 ohms	R-6714
R-8	R.F. and 1st I.F. Bias—7,500 ohms, ½ watt	K-2226-11
R-9	Divider—350,000 ohms, ½ watt	K-2226-53
R-10	Second Det. bias—390,000 ohms, ½ watt.	R-3947
R-11	First Detector bias—230,000 ohms, ½ watt	R-3946
R-12	Divider, driver bias—1 meg. ½ watt	K-2226-3
R-13	Divider, driver bias—1 meg. ½ watt	K-2226-3
R-14	Divider, output stage bias—600 ohms, ½ watt	K-2226-56
R-15	Divider, output stage bias—1000 ohms, ½ watt	K-2226-16
R-16	Pilot Light (Neon Lamp) Resistor—50,000 ohms, ½ watt	K-2226-6
R-17	Ballast Resistor (air cell operation only) —.62 ohm (wirewound)	R-6737

COILS:—

L-1	Antenna R.F. Transformer Primary	R-6489
L-2	Antenna R.F. Transformer Primary Coupling	
L-3	Antenna R.F. Transformer Secondary	
L-4	Second R.F. Transformer Primary	R-6719
L-5	Second R.F. Transformer Primary Coupling	
L-6	Second R.F. Transformer Secondary	
L-7	Oscillator Plate Coil	R-6720
L-8	Oscillator Grid Coil	
L-9	Oscillator Pick-up Coil	
L-10	1st I.F. Transformer Primary	R-6712
L-11	1st I.F. Transformer Secondary	
L-12	2nd I.F. Transformer Primary	R-6713
L-13	2nd I.F. Transformer Secondary	
L-14	Choke Coil (I.F.)	R-6711
L-15	Voice Coil (and diaphragm assembly)	R-9432

TRANSFORMERS:—

T-1	Driver Transformer	R-6710
T-2	Output Transformer	R-6709

SWITCHES:—

S-1	Local Distance Switch	R-3909
S-2	Tone Control	R-6716
S-3	Battery "On-Off" Switch	R-3913
S-4		
S-5		
S-6		

MISCELLANEOUS:—

P-1	Neon Dial Lamp	K-1148
F-1	Fuse, ½ amp	R-3748

REALIGNING DETAILS

I.F. ADJUSTMENTS:—Two transformers comprising three tuned circuits and one untuned circuit are used in the intermediate amplifier. The tuned circuits are peaked at 175 K.C. The screws are accessible from the rear of the chassis. Proceed as follows:—

(a) Procure a modulated oscillator giving a signal at 175 K.C., a non-metallic screw driver, and an output meter.

(b) Remove the oscillator tube and connect a ground to the chassis.

(c) Connect the oscillator output between the first detector control grid and ground. Connect the output meter across the voice coil of the loudspeaker and adjust the oscillator output so that a slight deflection is obtained in the output meter.

(d) Adjust the secondary of the second and then the primary and secondary of the first I.F. transformers until a maximum deflection is obtained. Go over these adjustments a second time as there is a slight interlocking of adjustments. This completes the I.F. adjustments.

R.F. AND OSCILLATOR ADJUSTMENTS:—The three gang capacitor screws and 600 K.C. oscillator trimmer are accessible from beneath the receiver chassis. Proceed as follows:

(a) Procure a modulated oscillator giving a signal at 1400 K.C. and 600 K.C., a non-metallic screw driver and an output meter.

(b) Connect the output of the oscillator to the antenna and ground lead of the receiver. Check the dial at the extreme maximum position of the tuning capacitor. The indicator should point toward the small arrow at the edge of the dial. Set the dial at 1400 K.C., the oscillator at 1400 K.C., and connect the output meter across the voice coil. Adjust the oscillator output so that a slight deflection is obtained.

(c) With a non-metallic screwdriver, adjust the three line-up capacitors accessible at the bottom of the receiver until maximum deflection is obtained in the output meter.

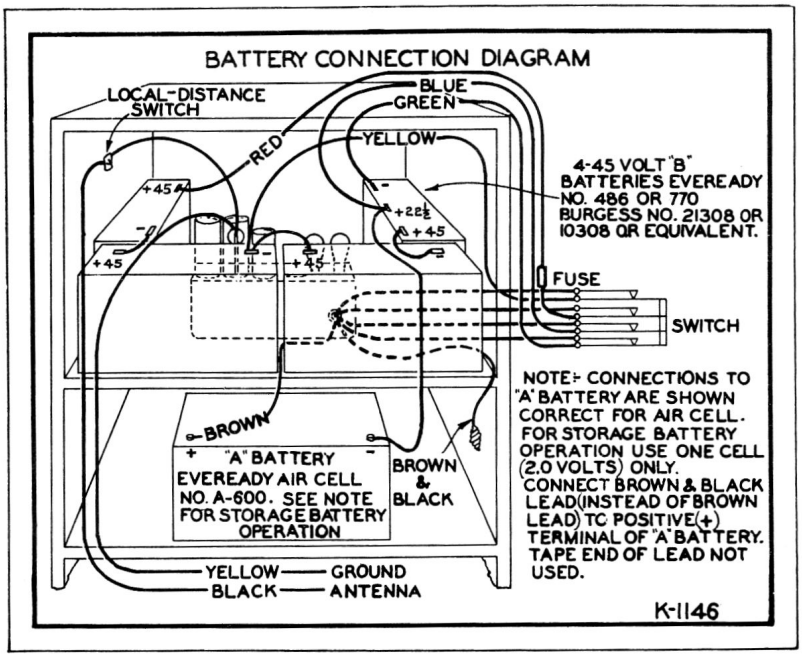
(d) Shift the oscillator frequency to 600 K.C. and tune the signal. Then adjust the 600 K.C. capacitor, until maximum deflection is obtained. The main tuning capacitor must be rocked back and forth while making this adjustment.

(e) Realign at 1400 K.C. This completes the adjustments.

SOCKET VOLTAGE AND CURRENT READINGS

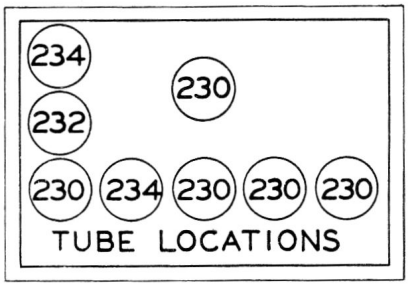
Tube	R.F. Position	Filament	Plate	Screen	Control Grid or "C" Bias	Plate Current
34	1st R.F.	2.0	155	65	* 3.0	2.5
30	Oscillator	2.0	55	..	..	4.0
32	1st Detector	2.0	155	65	* 4.0	0.5
34	I.F.	2.0	155	65	* 3.0	2.5
30	2nd Detector	2.0	*130	..	*10.0	0.25
30	Driver	2.0	150	..	* 7.0	2.5
30	Output	2.0	155	..	*14.0	2.0 Total
30	Output	2.0	155	..	*14.0	

*Voltages are obtained by means of high resistance dividers and it is not possible to accurately measure them with ordinary equipment.



Battery Connections—Model 82 Receiver.

NOTE:—On the instruction folder which accompanies this Model the colour of the ground wire was given as white; this should be corrected to read yellow. The colour of the antenna wire has already been changed from red to the correct black on this same folder.



View of Model 82 Chassis looking from rear and showing tube locations.