

**Model R-401
(Colais IV and Dover IV)
Battery Operated**

*Alignment Data, Layouts, Voltages on Data
Sheet-44*

ALL VOLTAGES MEASURED TO CHASSIS USING
90V BATTERY AND NO SIGNAL.

1F7G-GRID DIAS-1.1VOLT MEASURED ACROSS R11
IN SERIES.

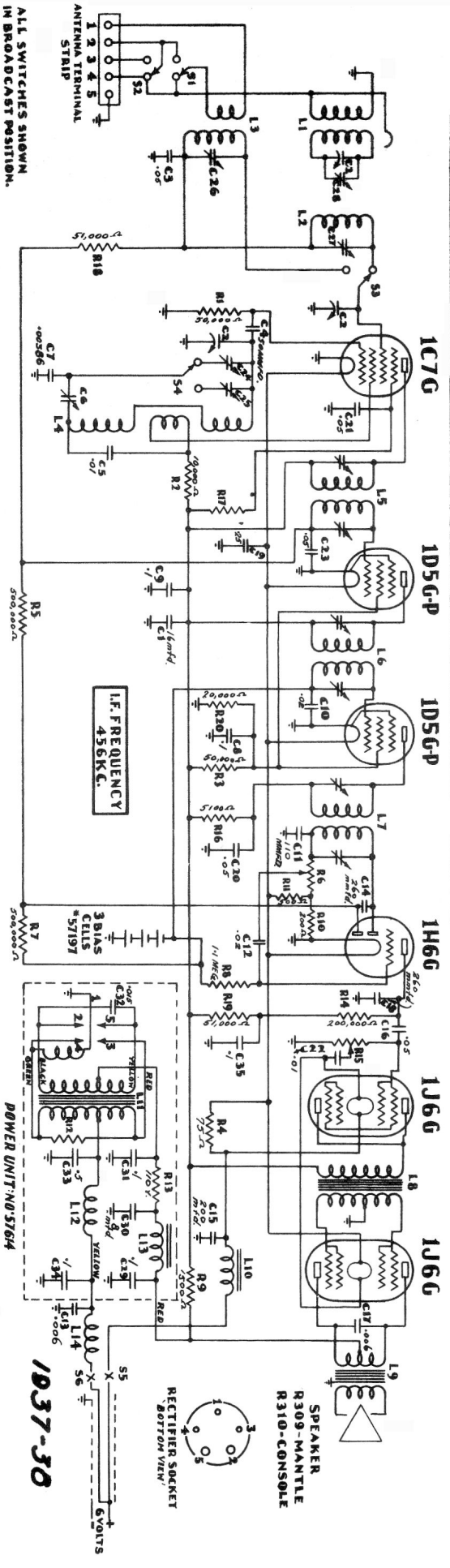
1H4G-GRID DIAS-4.3VOLT MEASURED ACROSS R10
IN SERIES.

1J6G-GRID DIAS-0
A BATTERY DRAIN-600 AMP.
B BATTERY DRAIN-11.2 MA. WITH 90 VOLTS B &
19-3 MA. WITH 135 VOLTS B.

NOTE: UNSHORT THE AIR CELL TERMINALS ON
BACK OF CHASSIS, ONLY WHEN AN AIR
CELL 'A' BATTERY IS USED.

NOTE: IF ONLY TWO 'B' BATTERIES ARE USED,
PLACE THE PLUG MARKED 'B135' IN THE
SOCKET ON BACK OF CHASSIS.

NOTE: A- THIS VOLTAGE IS NOT MEASURABLE WITHAN
ORDINARY METER DUE TO THE HIGH SERIES RESISTANCE
IN THE CIRCUIT.



Model R-402

**(Mountaineer and Westerner)
Vibrator Type Battery Operated**

**Alignment Data, Layout
and Voltages on Data
Sheet-44**

NOTE: ALL VOLTAGES MEASURED TO GROUND
WITH A 1000 OHM PER VOLT VOLT METER

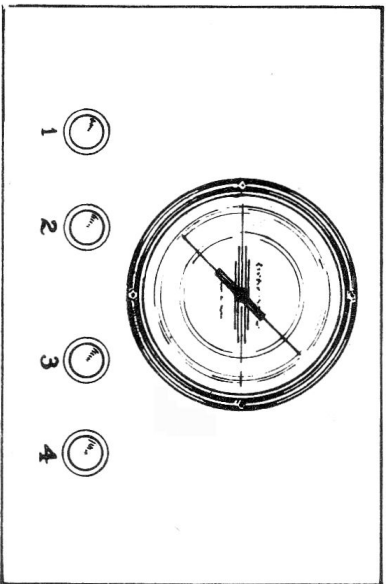
- Ⓐ BATTERY DRAIN 6 VOLTS = 1.4 AMP.
- Ⓑ B DRAIN-20 MA. TOTAL

Alignment Data

Models R-401, R-402

If the receiver lacks sensitivity and the tubes and their voltages have checked O.K. (see voltage chart accompanying circuit diagram) proceed to check the alignment as follows.

Circuits on Data Sheet-43



Front Panel Showing Controls

Aligning Equipment—For proper alignment, an output meter and an accurately calibrated oscillator with a tuning range from 456 K.C. to 15 M.C. are required.

Alignment—The alignment operation can all be performed without removing the chassis from the cabinet.

- (a) Connect an output meter across the voice coil terminals of the speaker.
- (b) Connect a 456 K.C. oscillator between the grid cap of the 1C7G first detector and ground. Make sure that there is a condenser (approximately .02 MFD.) in the oscillator leads so that the 1C7G grid is not shorted to the ground and the bias upset.

(c) With the volume control full on, align the I.F. stages beginning with the last and working forward, keeping the input signal low enough so that the lowest practical output reading is obtained. Particular care must be taken in aligning the I.F. because these circuits are very selective.

If the alignment was very far out repeat the above operation. This alignment should be carried out with the range switch in the "Broadcast band" position and the gang condenser set about 1400 K.C.

(d) With the range switch in the Broadcast position (to the left) set the gang at the minimum capacity end and apply an 1800 K.C. signal to the Antenna Terminal (1) through a standard dummy antenna.

Then adjust C24 only for maximum output on the output meter.

(e) Adjust the test oscillator to 1400 K.C. and tune this signal on the set. Then adjust C27 and C28 for maximum output. Then move the pointer to 1400 on the dial, holding the gang condenser in tune at 1400 K.C.

(f) Adjust the receiver and oscillator in tune at 600 K.C. and align C6 for maximum output, rocking the tuning condenser back and forth slightly while aligning.

(g) If an appreciable change in C6 was necessary operation (e) should be repeated.

(h) Turn the range switch to the short wave position and adjust the test oscillator to 15 megacycles (20 meters). A fairly strong signal will be received at two points on the dial; set the dial pointer at 15 M.C. and adjust C25 to receive the lower wave length signal.

(j) Adjust C26 for maximum output while rocking the gang condenser.

NOTE:—A bakelite screw driver must be used for adjusting C24 and C25. It may have a small metal tip.

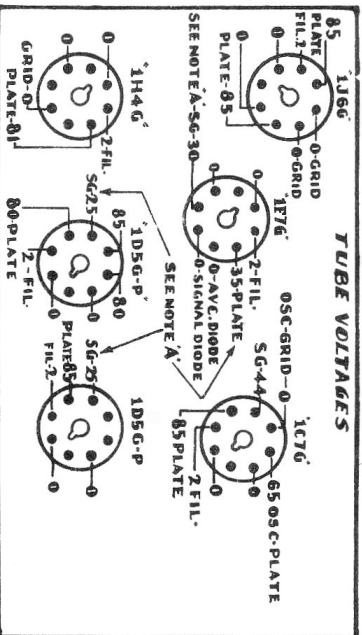
CONTROLS

- 1—Volume Control and On-Off Switch.
- 2—Tone Control.
- 3—Tuning Control.
- 4—Range Switch. Turn left for broadcast; right short waves.

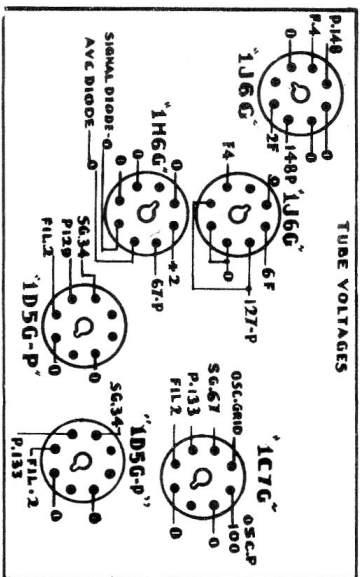
DUMMY ANTENNAE

1. On broadcast use a 200 mmfd. mica condenser or equivalent.
2. On short waves use a 400 ohm carbon resistor.

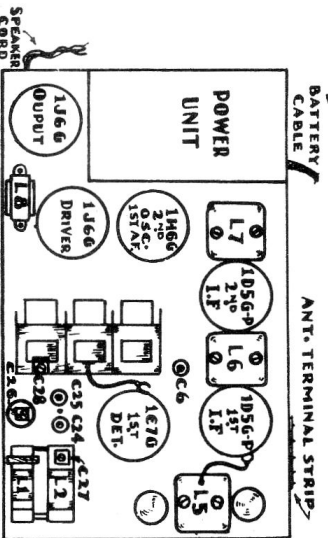
FRONT OF SET BOTTOM VIEW



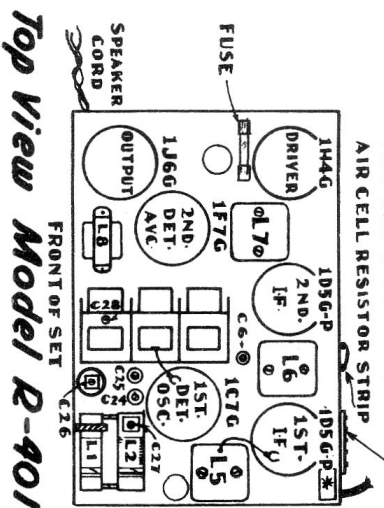
Voltages Model R-401



Voltages - Model R-402



Top View Model R-402



Top View Model R-401