

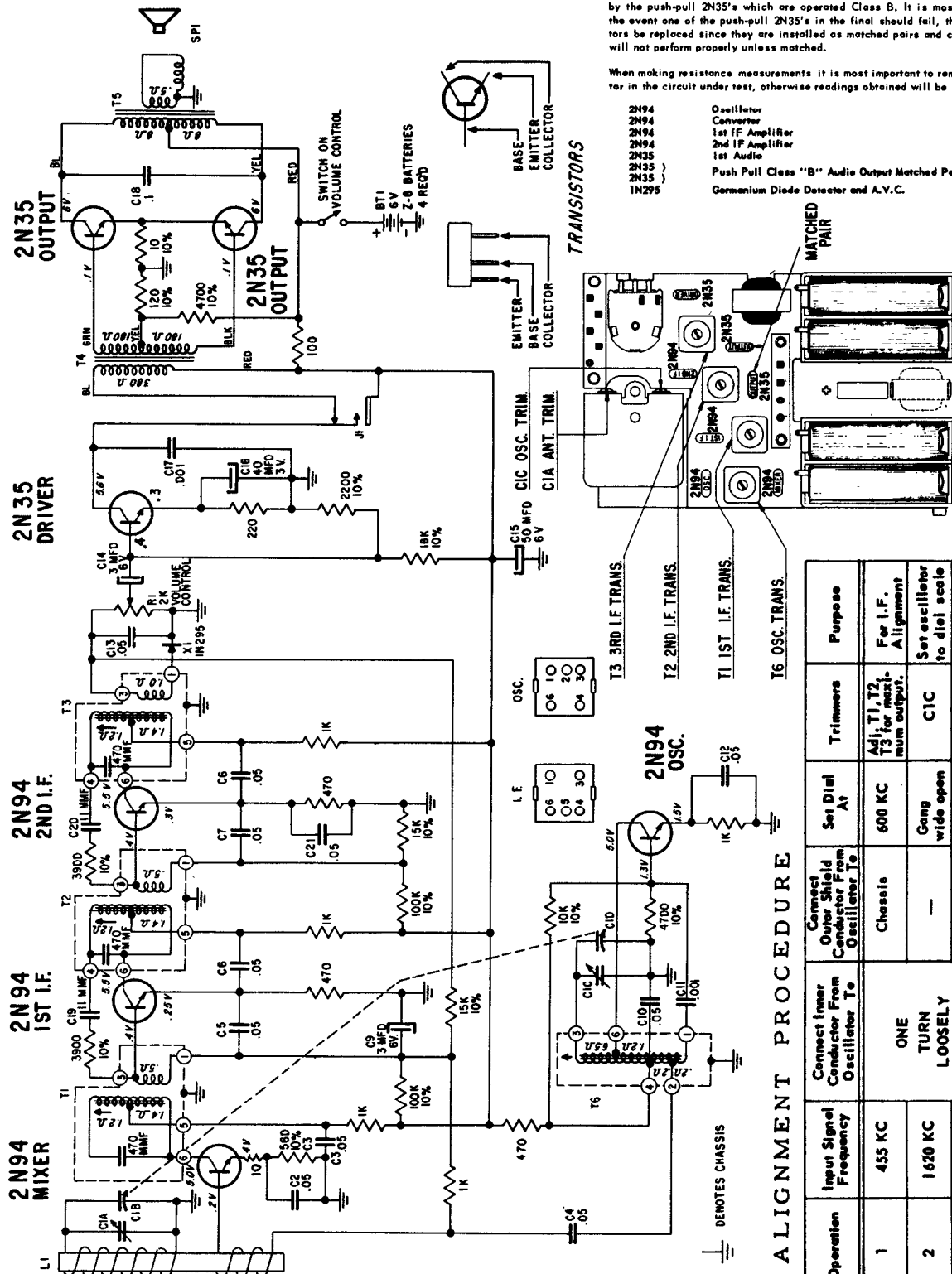
# ZENITH RADIO CORPORATION

## MODEL ROYAL 500 CHASSIS 7XT40

The "Royal 500" Seven Transistor Portable using Chassis 7XT40 is a conventional superheterodyne. One 2N94 is a mixer and another 2N94 is an oscillator to produce the 455 K.C. intermediate frequency. The first and second intermediate frequency amplifiers are relatively conventional, however, as in tubes when using a triode, it is necessary to neutralize them. On both the first and second I.F. we use a 3900 ohm resistor plus a 11 mmf capacitor for neutralization. The 1N295 Germanium Diode is used as a diode detector and the A.V.C. voltage source.

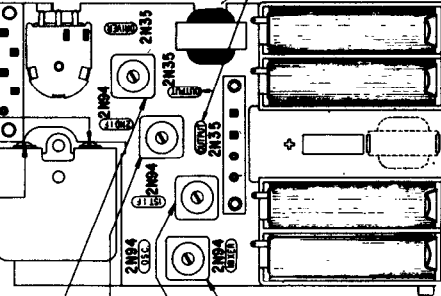
Through the use of a high impedance earphone of approximately 2000 ohms one can obtain audio directly from 2N35 driver, thus a considerable saving can be effected in batteries since this creates a situation of practically no current drain by the push-pull 2N35's which are operated Class B. It is most imperative, in the event one of the push-pull 2N35's in the final should fail, that both transistors be replaced since they are installed as matched pairs and chances are they will not perform properly unless matched.

When making resistance measurements it is most important to remove the transistor in the circuit under test, otherwise readings obtained will be incorrect.



- 2N94 Oscillator
- 2N94 Converter
- 2N94 1st I.F. Amplifier
- 2N94 2nd I.F. Amplifier
- 2N35 1st Audio
- 2N35 Push Pull Class "B" Audio Output Matched Pair
- 2N35 Germanium Diode Detector and A.V.C.
- 1N295

### TRANSISTORS



ALL RESISTORS 1/3 WATT, CARBON 20% UNLESS OTHERWISE SPECIFIED.  
 ALL VOLTAGES ARE D.C. UNLESS OTHERWISE SPECIFIED.  
 ALL CONDENSERS ARE IN MICROFARADS UNLESS OTHERWISE SPECIFIED.  
 D.C. VOLTAGES SHOWN ARE MEASURED WITH NO SIGNAL USING A A.C.-D.C. OR VACUUM TUBE VOLTMETER.

### ALIGNMENT PROCEDURE

Operation	Input Signal Frequency	Connect Inner Conductor From Oscillator To	Connect Outer Shield Conductor From Oscillator To	Set Dial At	Trimmers	Purpose
1	455 KC	ONE TURN LOOSELY COUPLED TO WAVEMAGNET	Chassis	600 KC	Adj. T1, T2, T3 for maximum output.	For I.F. Alignment
2	1620 KC	—	—	Gang wide open	C1C	Set oscillator to dial scale
3	1260 KC	—	—	1260 KC	C1A	Align loop antenna
4	535 KC	—	—	Gang closed	Adjust slug in T6	Set oscillator to dial scale
5	REPEAT STEPS 2, 3 AND 4					