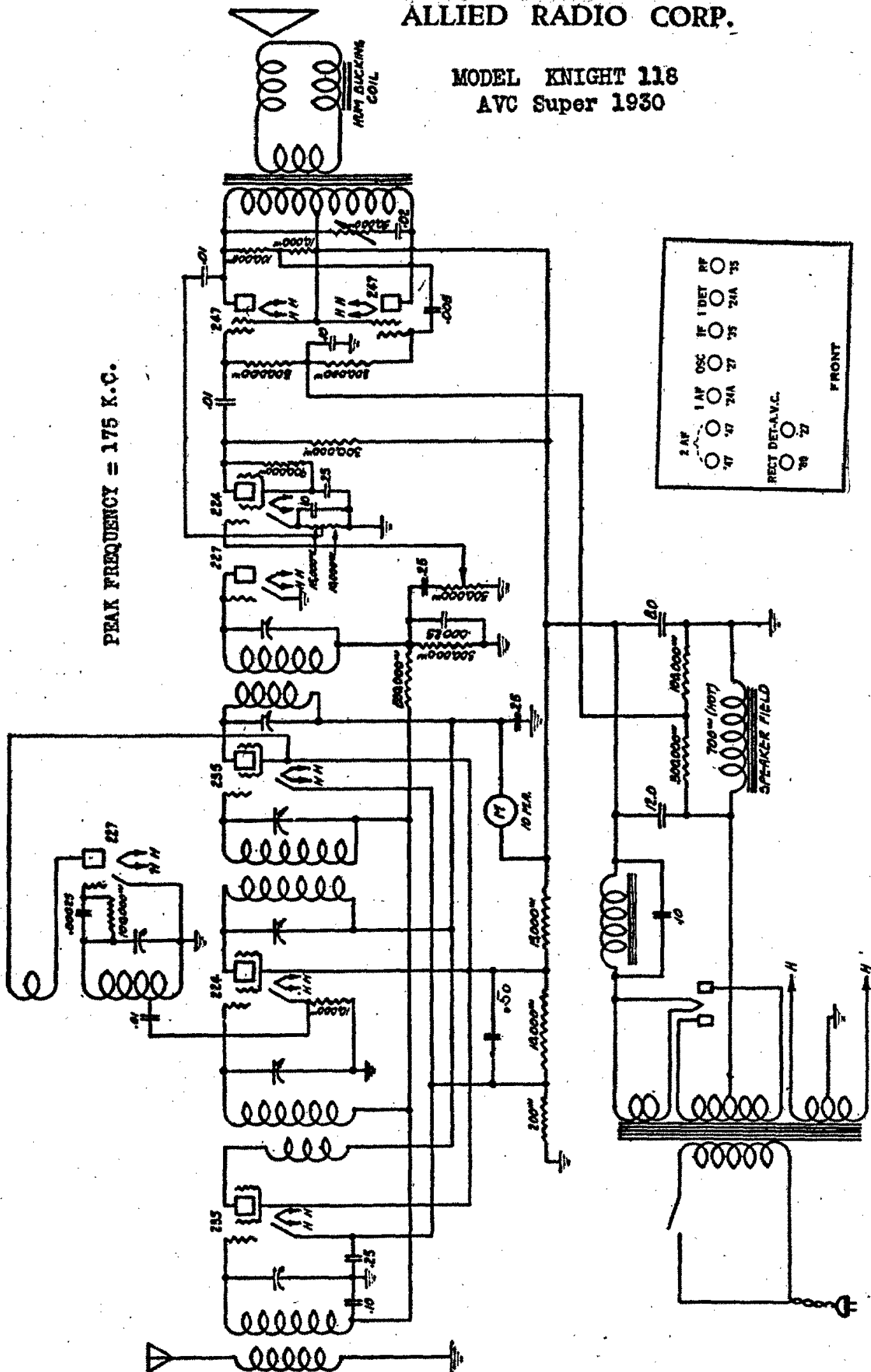


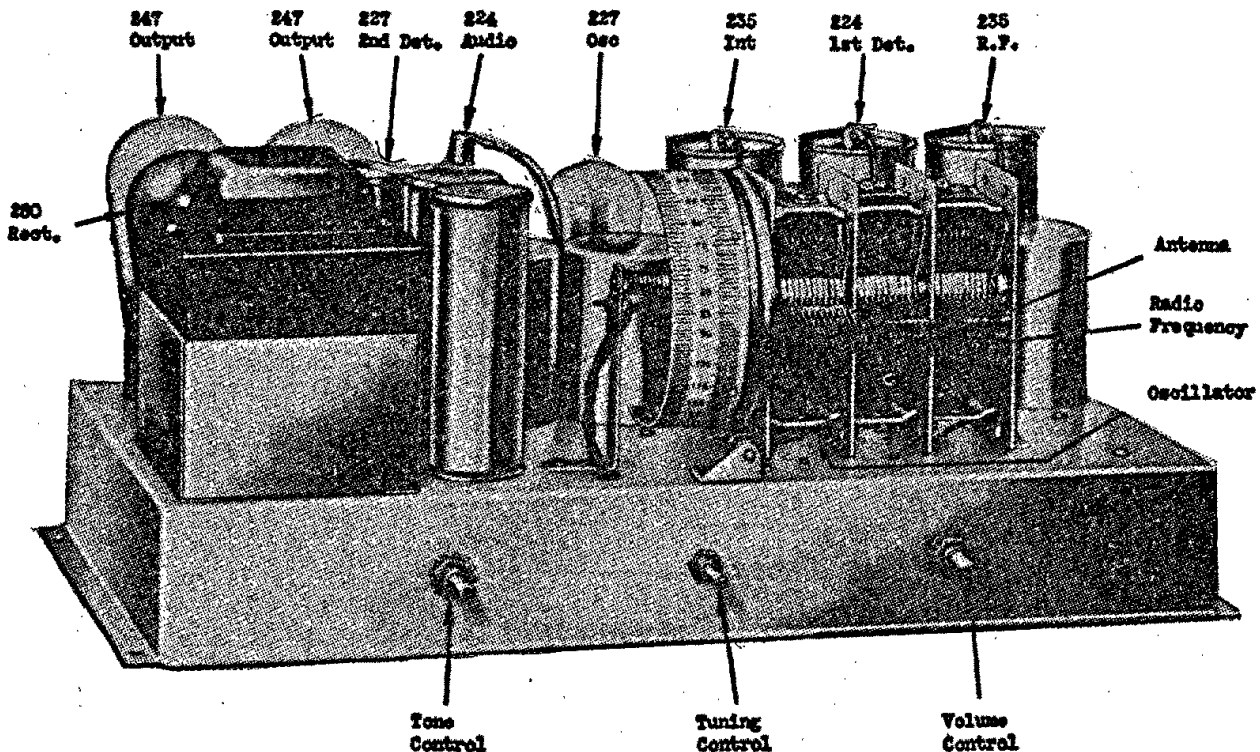
ALLIED RADIO CORP.

MODEL KNIGHT 118
AVC Super 1930

PEAK FREQUENCY = 175 K.C.



ELECTRO DYNAMIC SPEAKER:
The electro dynamic speaker field winding, which is 700 ohms, is utilized as an additional choke in the filter circuit. The correct bias for the two 247 output tubes is obtained from the voltage drop across the speaker field shunt resistors.

**ALIGNMENT OF RECEIVER:**

Because of the construction and thorough impregnation of the intermediate coils, the intermediate stages should rarely need retracking. Only when an intermediate coil has become defective due to an open or burned out winding, should it be necessary to readjust the intermediate trimmers. Should this occur, it is necessary that an oscillator be used and the intermediate trimmers be adjusted at 175 kilocycles. To align the intermediate stages, connect the high side of the oscillator output to the grid circuit of the first detector, which is done by disconnecting the grid cap of the 224 first detector and connecting the high side of the test oscillator to the control grid of this tube. The ground side of the test oscillator should be connected to the ground post on the chassis. Set the oscillator at 175 kilocycles and adjust the output of the oscillator so that a convenient reading is obtained on the output meter. Be sure that the output from the oscillator is not so large that it will overload the second detector. If during the alignment the meter goes off scale, reduce the output of the test oscillator or adjust the receiver volume control.

The trimmers of the intermediate coils are accessible through the small holes in the bottom of the chassis. There are two trimmers to each intermediate coil. Align the grid trimmer of the first intermediate coil. After a maximum reading is obtained by adjusting the grid trimmer on the first intermediate, adjust the primary for maximum reading and then recheck the grid side to make certain the alignment of the secondary has not been changed by the adjustment of the primary. The same procedure is followed in aligning the second intermediate coils. After both intermediate coils are properly aligned the adjustment of the intermediate stage is complete and they should not be further disturbed.

Replace the grid cap on the first detector and connect the oscillator output leads to the antenna and ground posts of the receiver and set the oscillator at 1435 kilocycles. Then tune the receiver to 1435 kilocycles on the dial. It is important that the receiver be tuned to this point. If the receiver is out of the cabinet it will be necessary to use some temporary indicator so that the position 1435 kilocycles on the dial may be accurately located. (This indicator should be set so that when the variable condensers are at the maximum capacity stop the indicator points to the last line on the dial at the low frequency end.) Then track the variable condensers by adjusting the trimmer condensers in the following order: Oscillator, antenna and radio frequency - (reading from the front of the receiver toward the back, the variable condenser sections are: Oscillator, antenna and radio frequency). After the variable condensers have been properly tracked at 1435 kilocycles, adjust the oscillator to 1295 kilocycles. Tune the receiver to this frequency. Check alignment of the condensers at this point by bending the end plate of the rotors in and out, noting the change in reading on the output meter. If when the plates are bent in the reading is increased, it is an indication that that particular section requires more capacity and the end plate should be permanently bent in at this point; or, if when the end plate is bent away the reading is increased, the end plate should be bent away permanently, as it is an indication that that particular section requires less capacity at that particular point. The variable condensers should be checked in this manner at 1895, 880, 650 and 550 kilocycles. These points have been chosen so as to take advantage of the slots in the end plates of the variable condensers. This procedure of bending plates should rarely be necessary on the oscillator section, as the plates of the oscillator section are especially designed to properly track over the broadcast spectrum, providing the antenna and radio frequency stages are correctly aligned.

Tube Voltages

| Type of tube | Position of Tube | Filament Volts | B Volts | C Volts | Normal Plate M.A. | Screen Volts |
|--------------|------------------|----------------|---------|---------|-------------------|--------------|
| 227 | Oscillator | 2.4 | 62.5 | | 4.75 | |
| 235 | Radio Frequency | 2.4 | 240 | 2.15 | 2.75 | 27 |
| 224 | 1st Detector | 2.4 | 230 | 4.35 | .5 | 65 |
| 235 | Intermediate | 2.4 | 237 | 2.15 | 2.75 | 72 |
| 227 | 2nd Detector | 2.4 | | | | |
| 247 | Pentode | 2.4 | 220 | 8.** | 32.5 | 250 |
| 247 | Pentode | 2.4 | 220 | 8.** | 32.5 | 250 |
| 280 | Rectifier | 4.9 | | | 47.5 ea. plate | |
| 224 | 1st Audio | 2.4 | 100 | 2.1* | .5 | 35* |

115 V. line Volume Control Full On

**To read the 247 bias, read between 247 grid and ground.

*These readings are only comparative and are not true voltages applied. The volt meter, when the readings are taken at these points, is in series with a very high resistance.