

FOREWORD

The circuit diagrams in the following section have been selected to represent satisfactory commercial practice in the application of receiving tube types. None of the circuits represent an actual commercial piece of equipment but rather a composite of several designs of a particular class. This has been necessary in order to illustrate in one diagram many different circuit possibilities which may not necessarily be economical in one commercial model. It is therefore quite feasible to utilize portions of several circuits to arrive at a design for a particular service.

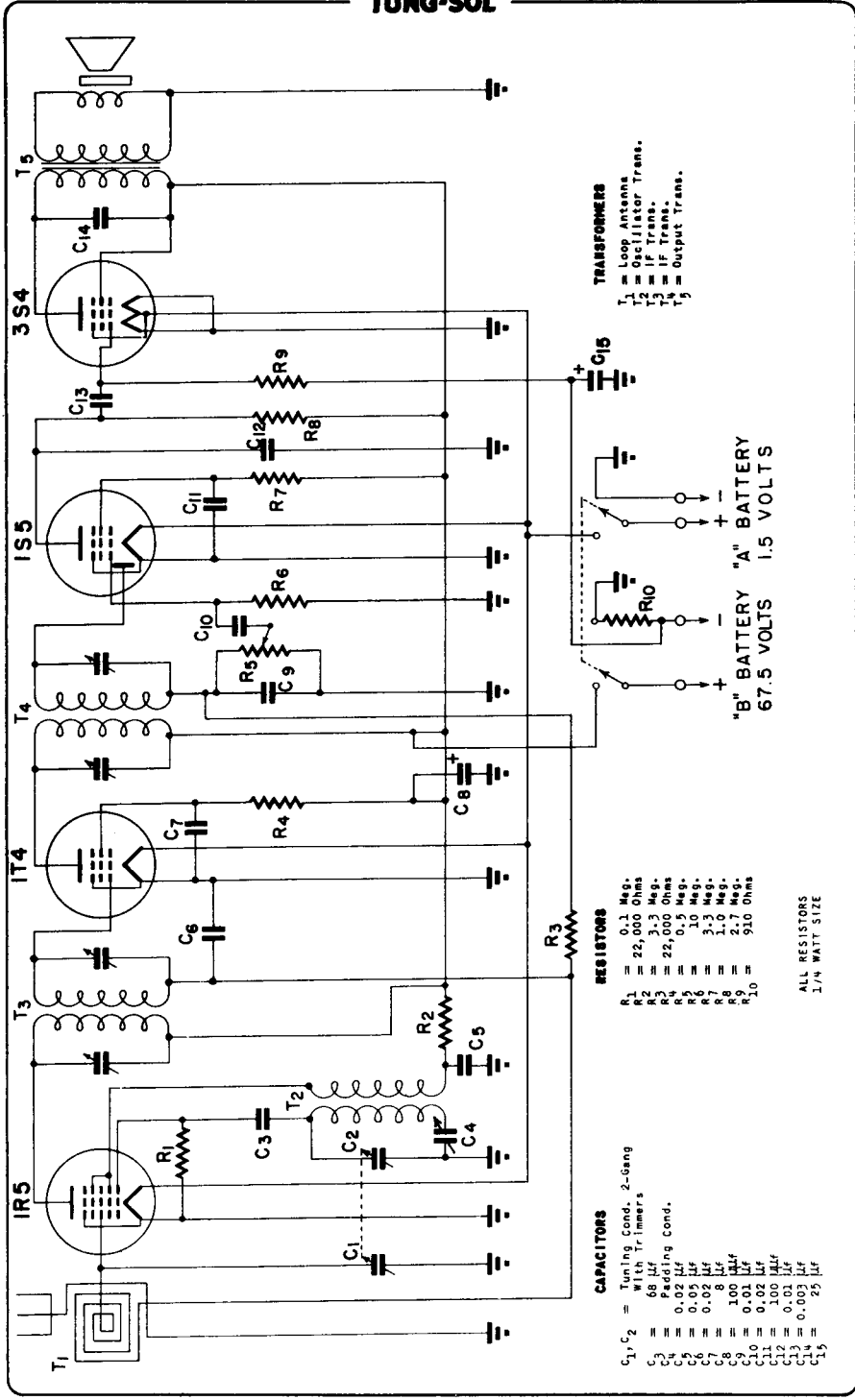
Wherever possible, actual circuit values are shown with the exception of parallel coil and condenser combinations which should be chosen from commercial components for the frequencies desired. While values of resistances, capacitances, and voltages are furnished, it is most important that reference be made to the individual tube rating sheets to ascertain that maximum and minimum ratings are not exceeded when attempting to combine several of these circuits.

The scope of the diagrams included represents the most popular circuit applications. As a result, a strict adherence to the current "preferred tube types" list has been made wherever possible. In several instances two tube type designations are shown since comparable performance can be expected when interchanging the indicated types.

4 TUBE PORTABLE SUPERHETERODYNE RECEIVER

TUNG-SOL

TYPICAL CIRCUIT



TRANSFORMERS

- T₁ = Loop Antenna
- T₂ = 1st IF Trans.
- T₃ = IF Trans.
- T₄ = Output Trans.
- T₅ =

RESISTORS

- R₁ = 0.1 Meg.
- R₂ = 22,000 Ohms
- R₃ = 3,300 Ohms
- R₄ = 22,000 Ohms
- R₅ = 22,000 Ohms
- R₆ = 10 Meg.
- R₇ = 10 Meg.
- R₈ = 3.3 Meg.
- R₉ = 1.0 Meg.
- R₁₀ = 2.7 Meg.

CAPACITORS

- C₁, C₂ = Tuning Cond. 2-gang
- C₃ = 68 μf Trimmers
- C₄ = 0.02 μf
- C₅ = 0.05 μf
- C₆ = 0.05 μf
- C₇ = 100 μf
- C₈ = 100 μf
- C₉ = 0.02 μf
- C₁₀ = 100 μf
- C₁₁ = 100 μf
- C₁₂ = 0.01 μf
- C₁₃ = 0.003 μf
- C₁₄ = 0.003 μf
- C₁₅ = 0.25 μf

"B" BATTERY 67.5 VOLTS
 "A" BATTERY 1.5 VOLTS

ALL RESISTORS
 1/4 WATT SIZE

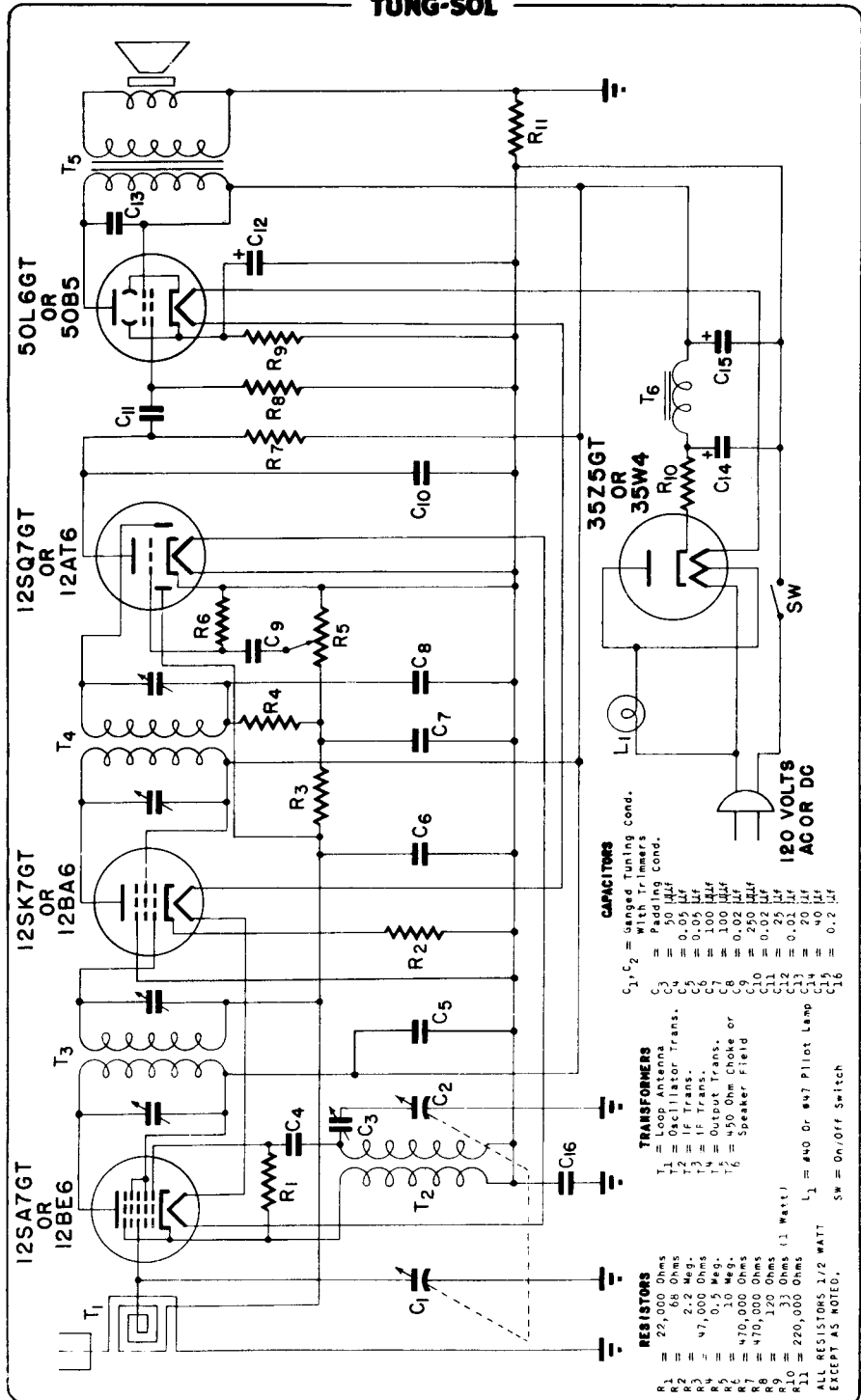
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5 TUBE AC/DC SUPERHETERODYNE RECEIVER

TYPICAL CIRCUIT

TUNG-SOL



CAPACITORS
 C₁, C₂ = Ganged Tuning Cond.
 C₃ = Padded Trimmers
 C₄ = 50 μ F
 C₅ = 0.05 μ F
 C₆ = 0.05 μ F
 C₇ = 100 μ F
 C₈ = 100 μ F
 C₉ = 0.02 μ F
 C₁₀ = 250 μ F
 C₁₁ = 0.02 μ F
 C₁₂ = 0.01 μ F
 C₁₃ = 0.01 μ F
 C₁₄ = 40 μ F
 C₁₅ = 0.2 μ F
 C₁₆ = 0.2 μ F

TRANSFORMERS
 T₁ = Loop Antenna
 T₂ = Oscillator Trans.
 T₃ = 1F Trans.
 T₄ = 1F Trans.
 T₅ = Output Trans.
 T₆ = Speaker Field

RESISTORS
 R₁ = 22,000 Ohms
 R₂ = 22,000 Ohms
 R₃ = 2.2 Meg.
 R₄ = 47,000 Ohms
 R₅ = 0.1 Meg.
 R₆ = 470,000 Ohms
 R₇ = 470,000 Ohms
 R₈ = 120 Ohms
 R₉ = 33 Ohms
 R₁₀ = 220,000 Ohms
 R₁₁ = 440 Ohms
 L₁ = #40 Or #47 Pilot Lamp
 SW = On/Off Switch

ALL RESISTORS 1/2 WATT EXCEPT AS NOTED.

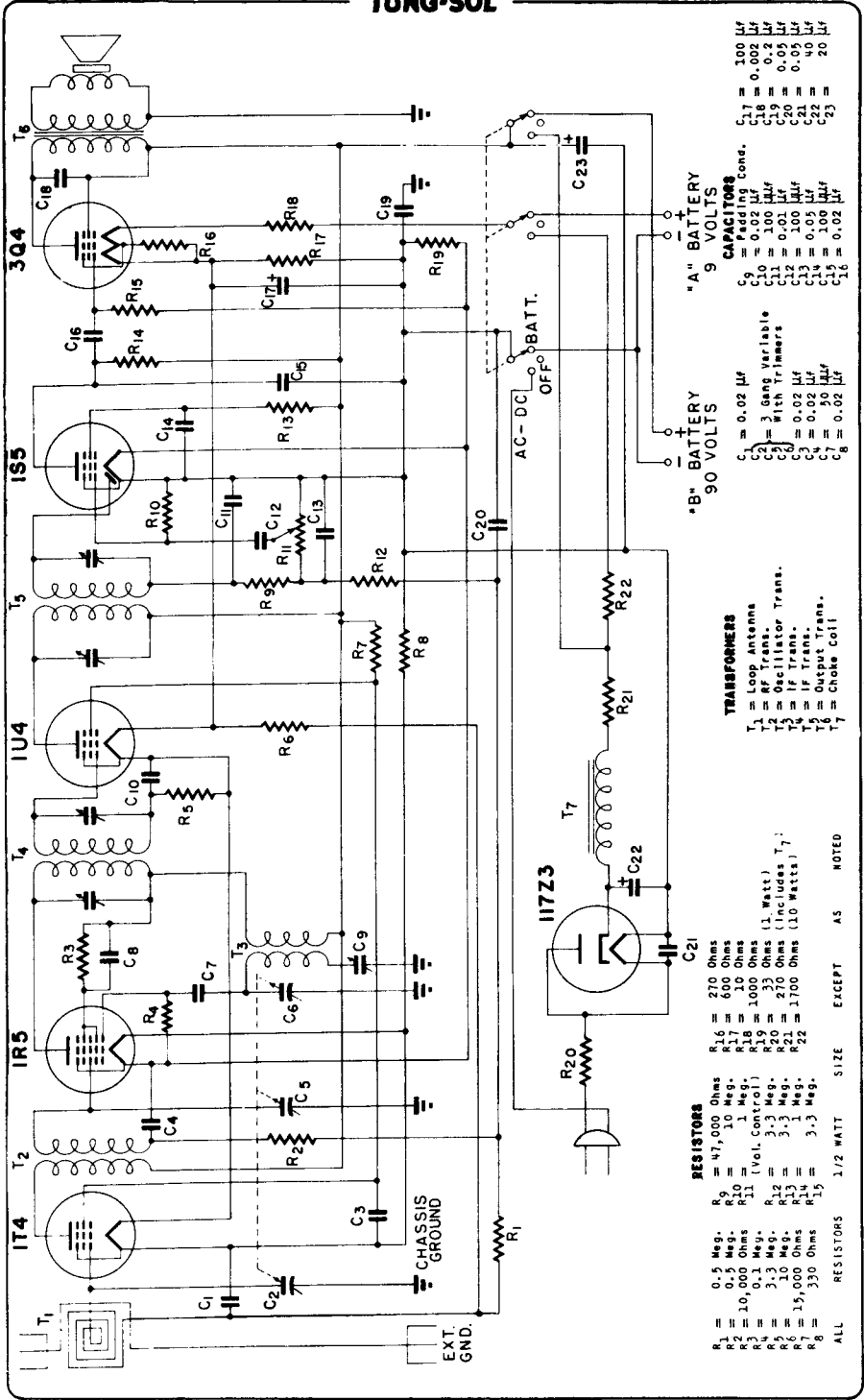
**180 VOLTS
AC OR DC**

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6 TUBE AC/DC BATTERY PORTABLE RECEIVER

TYPICAL CIRCUIT

TUNG-SOL



- "A" BATTERY 9 VOLTS**
- CAPACITORS**
- C₉ = Padding Cond. = 100 μf
 - C₁₇ = 0.002 μf
 - C₁₈ = 0.02 μf
 - C₁₉ = 0.05 μf
 - C₂₀ = 0.05 μf
 - C₂₁ = 40 μf
 - C₂₂ = 20 μf
 - C₂₃ = 20 μf

- "B" BATTERY 90 VOLTS**
- C₁ = 0.02 μf
 - C₂ = 3 Gang Variable
 - C₃ = With Trimmers
 - C₄ = 0.01 μf
 - C₅ = 100 μf
 - C₆ = 0.02 μf
 - C₇ = 0.05 μf
 - C₈ = 100 μf
 - C₁₀ = 0.02 μf
 - C₁₁ = 0.02 μf
 - C₁₂ = 50 μf
 - C₁₃ = 0.02 μf
 - C₁₄ = 0.02 μf
 - C₁₅ = 0.02 μf

- TRANSFORMERS**
- T₁ = Loop Antenna
 - T₂ = IF Trans.
 - T₃ = Oscillator Trans.
 - T₄ = IF Trans.
 - T₅ = 10 Watt
 - T₆ = Output Trans.
 - T₇ = Choke Coil

- RESISTORS**
- R₁ = 0.5 Meg.
 - R₂ = 10,000 Ohms
 - R₃ = 47,000 Ohms
 - R₄ = 0.5 Meg.
 - R₅ = 10,000 Ohms
 - R₆ = 10 Ohms
 - R₇ = 10 Ohms
 - R₈ = 10 Ohms
 - R₉ = 1 Meg.
 - R₁₀ = 10 Ohms
 - R₁₁ = 10 Ohms
 - R₁₂ = 10 Ohms (1.1 Watt)
 - R₁₃ = 3.3 Meg.
 - R₁₄ = 3.3 Meg.
 - R₁₅ = 1,700 Ohms (10 Watts)
 - R₁₆ = 270 Ohms
 - R₁₇ = 600 Ohms
 - R₁₈ = 10 Ohms
 - R₁₉ = 10 Ohms
 - R₂₀ = 30 Ohms
 - R₂₁ = 1,700 Ohms
 - R₂₂ = 10 Ohms

- RESISTORS**
- 1/2 WATT SIZE EXCEPT AS NOTED
- R₁ = 0.5 Meg.
 - R₂ = 10,000 Ohms
 - R₃ = 47,000 Ohms
 - R₄ = 0.5 Meg.
 - R₅ = 10,000 Ohms
 - R₆ = 10 Ohms
 - R₇ = 10 Ohms
 - R₈ = 10 Ohms
 - R₉ = 1 Meg.
 - R₁₀ = 10 Ohms
 - R₁₁ = 10 Ohms
 - R₁₂ = 10 Ohms (1.1 Watt)
 - R₁₃ = 3.3 Meg.
 - R₁₄ = 3.3 Meg.
 - R₁₅ = 1,700 Ohms (10 Watts)
 - R₁₆ = 270 Ohms
 - R₁₇ = 600 Ohms
 - R₁₈ = 10 Ohms
 - R₁₉ = 10 Ohms
 - R₂₀ = 30 Ohms
 - R₂₁ = 1,700 Ohms
 - R₂₂ = 10 Ohms

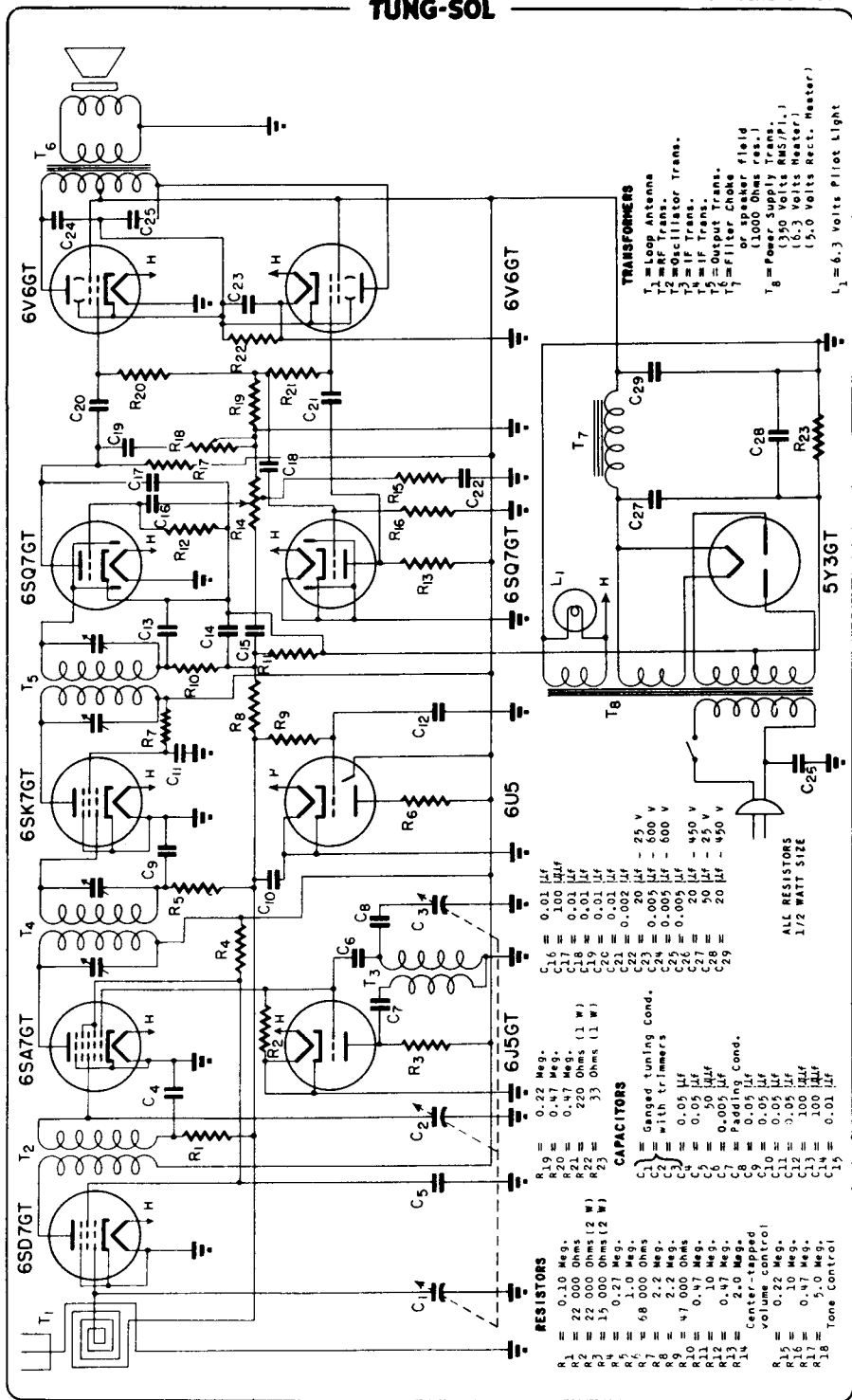
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10 TUBE AC SUPERHETERODYNE RECEIVER

TUNG-SOL

TYPICAL CIRCUIT



FREQUENCY MODULATION TUNER

TYPICAL CIRCUIT

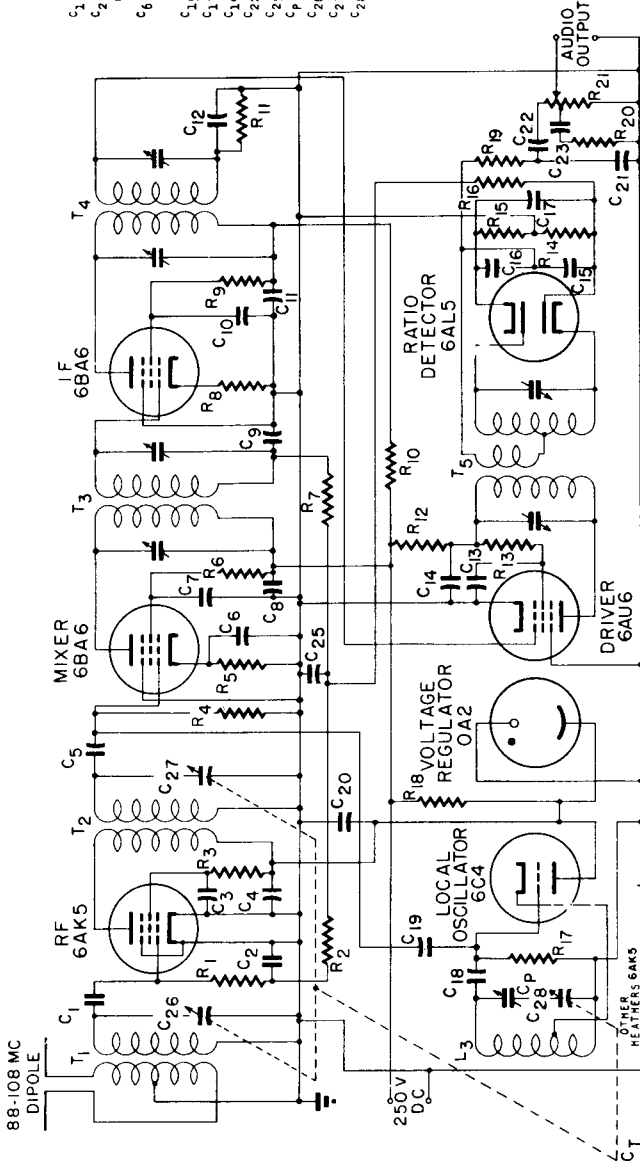
TUNG-SOL

CAPACITORS

- C₁, C₃, C₁₈' = 50 μLF
- C₂, C₃, C₄' = 500 μLF
- C₂₀, C₂₄ = 500 μLF
- C₆ To C₁₄ inclusive, C₂₁ = 0.003 μF
- C₁₅, C₁₆ = 250 μLF
- C₁₇ = 5 μF 50 V
- C₁₈' = 1 μF
- C₁₉ = 0.02 μF
- C₂₂, C₂₃ = 0.006 μF
- C₂₅ = OSCILLATOR PADDER
- C₂₆ } = 3 GANG TUNING CONDENSER
- C₂₇ }
- C₂₈ }

TRANSFORMERS

- T₁ = Antenna Transformer
- T₂ = RF Transformer
- T₃, T₄ = 10.7 MC IF Transformer
- T₅ = 10.7 MC Ratio Detector Transformer
- L₁, L₂ = 100 MC RF Chokes
- L₃ = Oscillator Coil



RESISTORS

- R₁₄, R₁₅ = 15 000 Ohms
- R₁₇ = 22 000 Ohms
- R₁₈ = 2 500 Ohms (10 watt)
- R₁₉ = 22 000 Ohms
- R₂₀ = 10 000 Ohms
- R₂₁ = 0.5 Meg. Volume Control Tapped at 0.2 Meg.
- R₁, R₄, R₁₆' = 1 Meg.
- R₂, R₆, R₇ = 0.12 Meg.
- R₃ = 15 000 Ohms (1 watt)
- R₅ = 220 Ohms
- R₈ = 68 Ohms
- R₉, R₁₃ = 33 000 Ohms (1 watt)
- R₁₀, R₁₂ = 1 000 Ohms (1 watt)
- R₁₁ = 0.47 Meg.

RESISTORS

- R₁₄, R₁₅ = 15 000 Ohms
- R₁₇ = 22 000 Ohms
- R₁₈ = 2 500 Ohms (10 watt)
- R₁₉ = 22 000 Ohms
- R₂₀ = 10 000 Ohms
- R₂₁ = 0.5 Meg. Volume Control Tapped at 0.2 Meg.

ALL RESISTORS 1/2 WATT SIZE EXCEPT AS NOTED