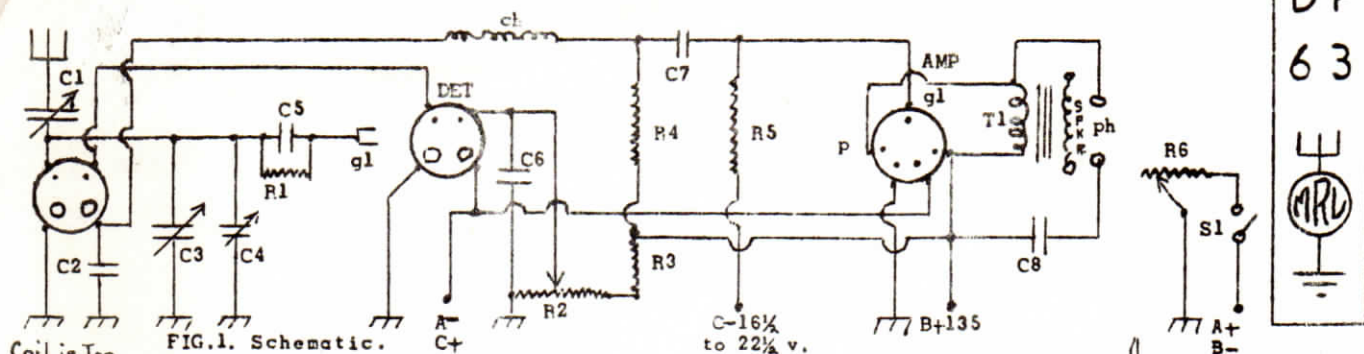


MRL 2-TUBE ALL-WAVE DX RECEIVER. 32, (34), 33 TUBES

DP
63



Coil is Top View

FIG. 1. Schematic.

Scale 1/4" to 1".

Sockets - bottom views.

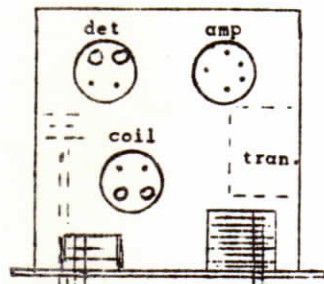


FIG. 2. Base layout.

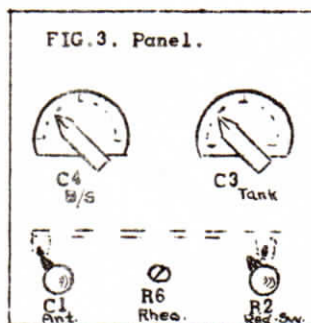


FIG. 3. Panel.

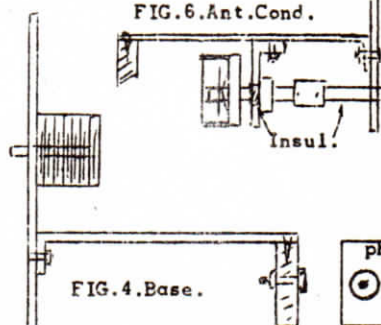


FIG. 4. Base.

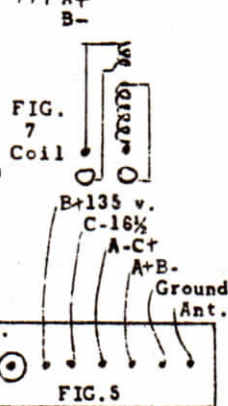


FIG. 5
Coil

FIG. 6. Ant. Cond.

PARTS LIST.

- 1 16 gauge Aluminum Panel, 6 1/2 x 6 1/2.
- 1 do Base, 5 1/2 x 6 (including 1/2" Brack)
- 1 3/8 Plywood back strip, 5 1/2 x 1-15/16.
- 1/4 " ends, if desired.
- 2 1-1/4 Bar Knobs and scales to match.
- 2 Small Pointer Knobs for 1/4" shaft.
- 2 4 prong Wafer Sockets.
- 1 5 do
- C1 3 pl. Midget Var. cond.; Bracket with insulated shoulder bushings; insulated extender to panel.
- C2 .00025 mfd. Mica Fixed condenser.
- C3 .00014 " (19 plate) Midget Variable Condenser
- C4 2 plate Midget Variable Cond. for Vernier tuning.
- C5 .0001 mfd. Mica Fixed Grid Condenser.
- C6 .25 " x 600 volt tubular Bypass Condenser.
- C7 .01 " " " do
- C8 .1 " " " do
- R1 2 meg. x 1/4 watt grid leak resistor.
- R2 50,000 ohm Volume Control with Switch (S1).
- R3 50,000 " x 1/2 watt Carbon Resistor.
- R4 100,000 do
- R5 75,000 do
- R6 6 ohm Rheostat, with slot adjustment.
- ch 2 1/2 mhy Radio Frequency Choke. (or larger)
- S1 SPST switch on back of Volume Control.
- T1 7000 ohms Impedance Output Transformer.
- DET 32 or 34 tube and large grid cap.
- AMP 33 Power Tube.
- ph 2 phone tip jacks at rear, in back strip.
- #18 solid Hookup wire or busbar for R.F. Circuit.
- #22 stranded Hookup wire for balance of set.
- Hardware, lugs, solder, lockwashers, etc.
- 1 PM Speaker, if desired, to match T1.
- 2 #6 Dry Batteries in series for filament.
- 135 Volts B-Batteries or Power Supply. (DP-49).
- 1 22 1/2 volt C-Battery or approximate.
- 1 set MRL Celluloid Coils type A. 4 prong.
- 1 2000 ohm Headset, or better.

GENERAL. The Ant. Cond. (C1) used to tune Aerial for SW stns. is the secret of DX, instead of the trimmer Cond. mounted at rear by most designers. Rheostat (R6) used to reduce volt. of new Batts. Vernier dial in left hand; regeneration in right. Phones come out behind to prevent shocks. When (S1) is off; all Batts. are off. Reports of many European and other Foreign stations received.

CHASSIS. Cut Panel and Base to approx. sizes given. Alum. sheet may be scored heavily on both sides and broken; smoothed with file. Bend 3/8" bracket on front of Base and fit to Panel with PH

screws, countersunk. Make top of Base 2" up. Cut back strip of 3/8" plywood and drill. Fasten on with #2 PH wood screws. 1/4" plywood ends may be used but not required. Place parts as shown for best results. Scale is 1/4" to 1". Punch or drill holes for Coil and Sockets. Mount Socket holes as shown for short leads.

ASSEMBLING. Mount Chassis, Sockets and all the parts. Be sure Trans. (T1) base clears 33 socket. Cut Rheostat (R6) shaft off and slot with hacksaw for screwdriver adjustment. Cut shaft of Volume Control to take pointer knob. Cut Dial Scales and mount under washer and nut. Glue or rivet on.

CONDENSERS. For Vern. Cond. (C4) use a 4 plate Midget Var. but take off #2-3 plates, so rotor & stator are far apart. Very essential for 20 meter band. For Ant. Cond. (C1) make an Alum. bracket. Drill hole large enough to take a shoulder insulated washer to prevent grounding. Use an insulated shaft extender to front of panel. Test with an Ohmmeter or Batt. and Phone for short to chassis.

WIRING. Use colored pencil to check off circuits on plan as they are wired. Use soldering lugs and lockwashers. Make all joints tight as U go along. Use heavy hookup wire up to Grid Cond. (C5) and small hookup wire from there on. Ground all chassis connections direct as possible with a lug and lockwasher. Note that plan shows all bottom views for sockets, except Coil.

COILS. Using 1 1/2" forms, all windings closewound except 20-40 m. secondaries. Other kinds and sizes of wire may be substituted. Cover windings with a good Light Coil Cement. Clean prongs well.

Band	Up	To	Secondary	Tickler, Close
20 m.	1"	1-1/4"	4 T 24 Enamel	5 T 28 Enam.
40	1"	1 1/2"	10 "	6 "
80	1"	end	22 "	6 "
160	7/8	"	65 "	12 "
HFBC	5/8	"	84 T 28 Enamel	20 T 32 Enam.
BC	5/8	"	120 T 32 "	20 "
LFBC	5/8	"	170 T 34 "	25 T 34 Enam.
Long	3/4	"	350 "	30 "

OPERATION. Set Rheo. (R6) to lowest voltage; in set tubes and coil; turn on (S1). Set Ant. Cond. (C1) at zero for 20-40 m.; 25 for 80 m.; 50 for 160 and up. Raise vol. control until you get a rush or whistle. Adjust Vernier (C4) for 20-40 m. stations. Not used on BC bands. Readjustment of (C1) may be necessary later for more sensitivity. As A-Batt. runs down, advance (R6). 50 ft. Aerial and ground. **Modern Radio Laboratories.**