

ESPEY
MODEL 651

TRADE NAME
MANUFACTURER
TYPE SET
TUBES (FIVE)

Espey Models 651, 652, 653, 6511, 6516
Espey Mfg. Co., Inc., 528 E. 72nd St., New York 21, N.Y.
AC - DC Superheterodyne - Self Contained Loop Antenna
Types, 14Q7 Converter, 14A7/12B7, 14B6 Det.-AVC-AF, 50A5 Power Output, 35Y4 Rectifier.

POWER SUPPLY
TUNING RANGE—BROADCAST

105-125 Volts AC-DC
540-1700KC

RATING
.235 Amps. @ 117V AC

ALIGNMENT INSTRUCTIONS

Use isolation transformer if available. If not, connect capacitor in series with the low side of the signal generator and B-. Set volume control at maximum volume and output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

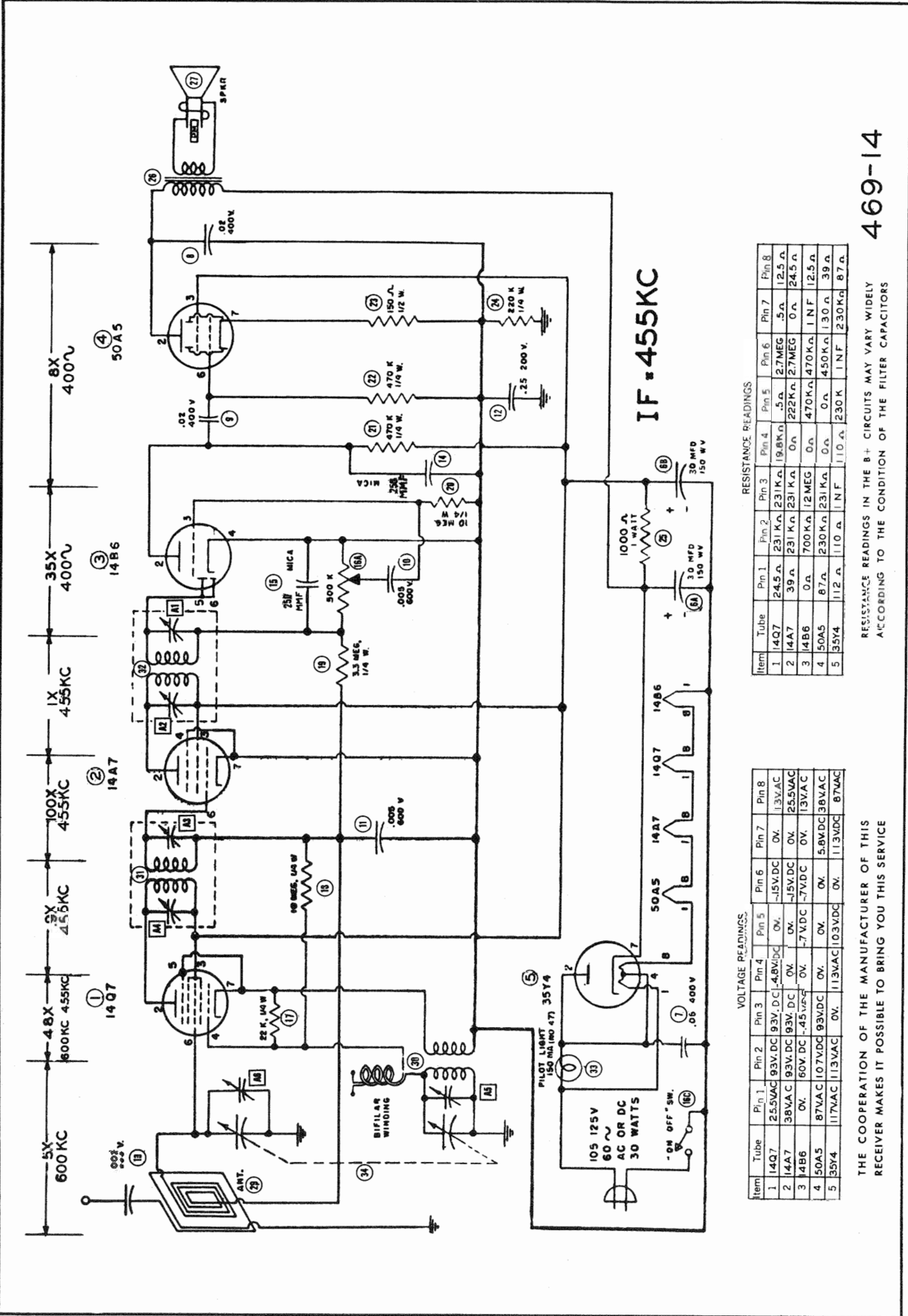
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.01 MFD.	High side to sta- tor of rear sec- tion of variable Low side to B-.	455KC	Quiet point at high freq. end. of dial.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output.
100 MMF.	High side to ant. lead. Low side to chassis.	1720kc	High freq. end. (fully clockwise)	"	A5	" " " "
100 MMF.	High side to ant. lead. Low side to chassis.	1500KC	Tune for maxi- mum output.	"	A6	" " " "

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The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made co-operative and 3-volt battery bias substituted for 10% measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket pin numbers are shown as bottom views.
3. Measured values are at 117V AC, 10% tolerance.
4. Line voltage maintained at 117V AC for voltage readings.
5. Nominal tolerance on component values makes possible a variation of $\pm 10\%$ in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PARTS LIST AND DESCRIPTIONS (Continued)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		ESPEY PART No.	CARD REPLACEMENT		
1	CONVERTOR	1437/1257	1437	9AL	
2	1 st AF AMP.	1437/1257	1437	9AL	
3	Det.-AVC-AP	1438	1438	9A	
4	Power Output	5015	5015	6A1	
5	Rectifier	33Y4	33Y4	5AL	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REPLACEMENT DATA					IDENTIFICATION CODES AND INSTALLATION NOTES		
		CAP.	VOLT	ESPEY PART No.	SOLAR PART No.	SPRAGUE PART No.		AEROVOX PART No.	CORNELL-DUBILIER PART No.
6A	40 150			A-25, 019	M-2X40-150	TA-440	FEA150-40	ME4415	Filter - Red
7B	.05 400				S-4-05	TC-15	484-05	DT485	Line Filter
8	.02 4000				S-4-02	TC-12	484-02	DT485	500K Plate Bypass
9	.02 400				S-4-02	TC-12	484-02	DT485	Audio Coupling
10	.005 600				S-6-005	TC-25	684-005	DT625	AVC Filter
11	.005 600				S-6-005	TC-25	684-005	DT625	Line Isolation
12	.25 200				S-4-25	TC-2	484-25	DT425	ant. Coupling
13	.002 600				S-6-002	TC-22	694-002	DT622	Audio Plate Bypass
14	250 500				M0-8-325	1FM-325	1468-00025	84525	IF Bypass Vol. Cont.
15	250 500				M0-8-325	1FM-325	1468-00025	84525	

CONTROLS

ITEM No.	RATING	REPLACEMENT DATA				INSTALLATION NOTES
		ESPEY PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
16A	500KΩ	A-9, 066	MM43	D13-133	N-80-2	Volume Control
17	500KΩ				A	Attach to low per instructions
18	Switch		Not Req.	Not Req.	SW-A	

RESISTORS

ITEM No.	RATING	REPLACEMENT DATA		IDENTIFICATION CODES
		ESPEY PART No.	IRC PART No.	
17	124K		RTS-22K	Red-Red-OF. Oscillator Grid
18	10K		RTS-10 Meg.	Br.-Blk.-Blu. AVC Network
19	3.3 Meg.		RTS-3.3 Meg.	Or.-OF.-Grn. 1st AF Grid
20	10 Meg.		RTS-10 Meg.	Br.-Blk.-Blu. 1st AF Grid
21	10K		RTS-470K	Yl.-Yl.-Yl. Plate Load
22	10K		RTS-470K	Yl.-Yl.-Yl. Output Grid
23	10K		RTS-470K	Yl.-Grn.-Br. Cathode
24	220K		RTS-22K	Red-Red-Yl. Line Isolation
25	100K		RTA-100K	Br.-Blk.-Red Filter

TRANSFORMER (OUTPUT)

ITEM No.	RATING	REPLACEMENT DATA		INSTALLATION NOTES
		ESPEY PART No.	STANCOR PART No.	
26	170VA 5-00 155V 0.8	Part of B-11, 037	A-3076	T-2234,5

PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS	REPLACEMENT DATA		INSTALLATION NOTES
		ESPEY PART No.	JENSEN PART No.	
27	10 W.P.		ST-105	
28	4-1/8" 9/16"	B-11, 037	Mod. PS-X	NOT READILY REPLACABLE-USE COMPLETE SPEAKER UNIT

R F COILS

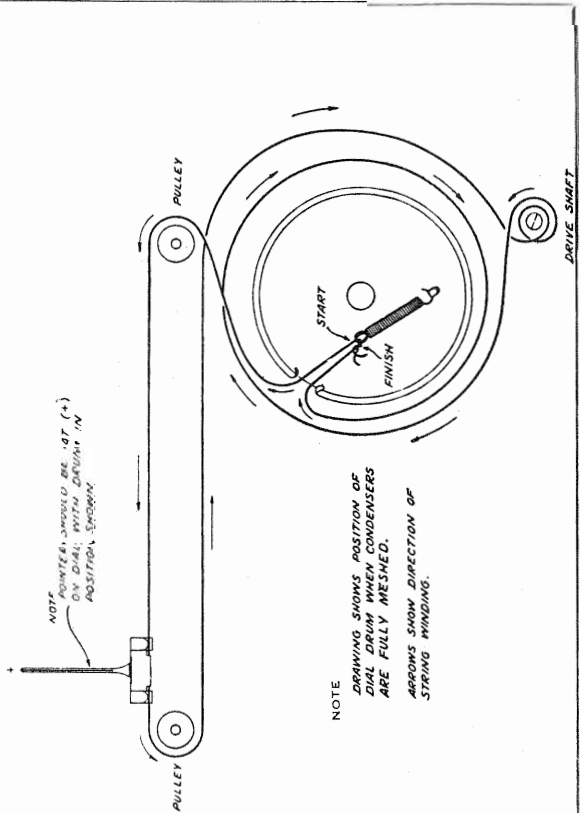
ITEM No.	USE	REPLACEMENT DATA		INSTALLATION NOTES
		DC RES. PRI. SEC.	ESPEY PART No.	
29	Loop Ant.	1-20	80-006	
30	Osc. Coil	8-20	82-162	* Add 50 MFD Cap. from grid to high side tuning cap.
31	Input IF	21-52 215	22-191-1	
32	Output IF	14-22 14.5	22-191-2	

DIAL LIGHT

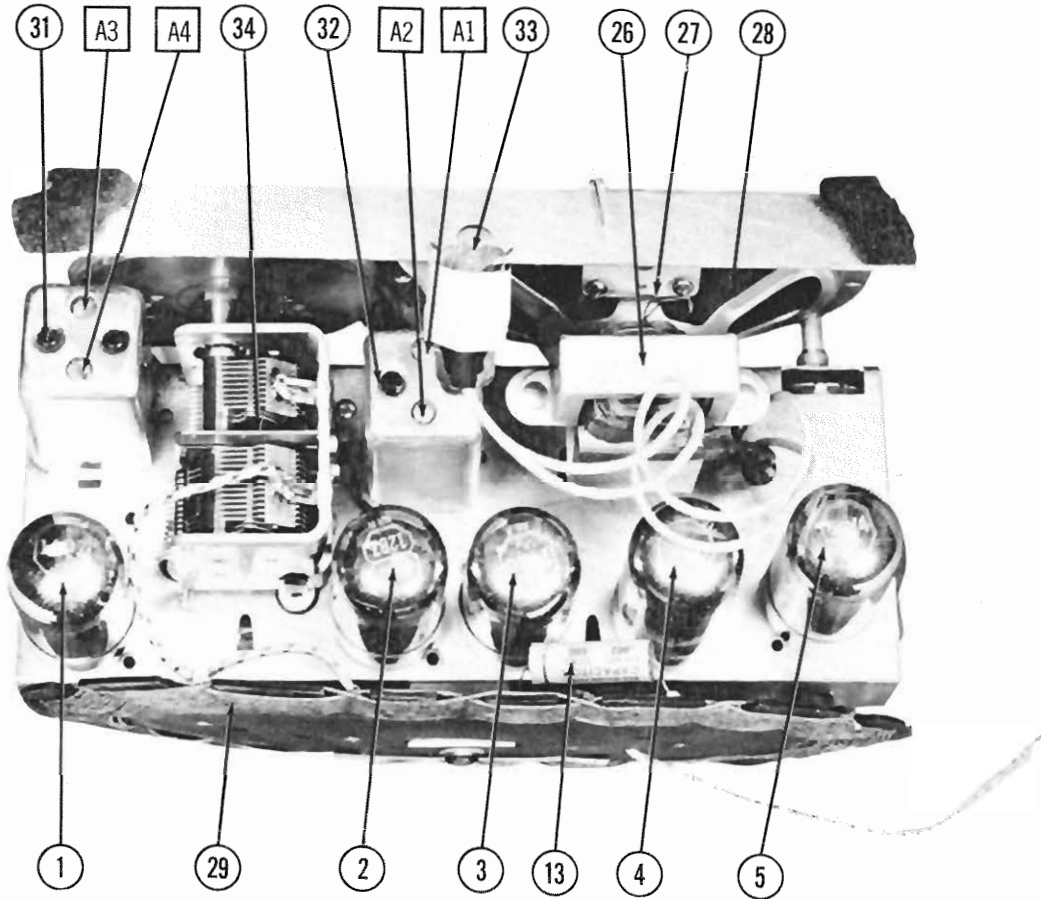
ITEM No.	BASE TYPE	VOLTS	AMPS.	REPLACEMENT DATA		INSTALLATION NOTES
				ESPEY PART No.	BEAD COLOR	
33	400082	5-15	0.15		BROWN	Type 47

MISCELLANEOUS

ITEM No.	PART NAME	ESPEY PART No.	NOTES
34	Tuning Cap.	06, 002	2 lang Variable Cap.



CHASSIS—BOTTOM VIEW



CHASSIS—BOTTOM VIEW

