

# PHILCO

REG. U.S. PAT. OFF.

## Essential Service Data on All Models

Model No.	Power Input (Watts)	I.F. (K.C.)	Tubes Used	:Tube Socket Voltages												
				Circuit	R.F.	Det. Osc.	I.F.	A.V.C. 2nd Det.	1st A.F.	Driver (2nd A.F.)	Output (Class "A")	Rectifier				
<b>14</b> (Code 126 & 226) See Model 91				Type Tube	78	6A7	78	37	77	42	42	42	80			
				Filament Volts—F to F	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	5.0			
<b>14</b> (Code 122)	110	175	2-78, 1-6A7, 1-37, 1-77, 3-42, 1-80	Plate Volts—P to K	210	210	220	...	80	205	275	275	340			
				Screen Grid Volts—SG to K (Type 6A7—G3 to K)	90	90	90	...	40	205	280	280	...			
<b>15</b>	115	175	4-37, 3-44, 2-42, 1-80	Tube		Filament Volts F to F	Plate Volts P to K	Screen Grid Volts SG to K	Control Grid Volts CG to K	Cathode Volts K to F						
				Type	Circuit	44	R. F.	6.3	165	55	15	30	44	1st Det.	6.3	250
<b>16</b> (Code 125) 540 K.C.—23 M.C.	130 (Code 122) 120 (Code 121)	460	1-76, 2-77, 3-78, 3-42, 1-37, 1-5Z3 (1-80 replaces 1-5Z3 in Code 121, 16-B)	CODE 122 ONLY												
				Circuit	1st Det.	Osc.	1st I.F.	2nd I.F.	2nd Det.	Inter-Station Noise Supr. Circuit	1st A.F.	2nd A.F. (Driver)	Output	Rectifier		
<b>16</b> (Code 126) 540 K.C.—22.5 M.C.	120	460	3-78, 2-77, 1-76, 1-37, 3-42, 1-80	Tube Function	78 R.F.	77 1st Det.	78 Osc.	78 1st I.F.	78 2nd I.F.	37 2nd Det.	77 1st Aud.	42 Driver	42 Out-put	80 Rect.		
				F to F	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	5.0
<b>17</b>	130 (Code 122) 120 (Code 121)	175	1-6A7, 3-78, 2-37, 1-77, 3-42, 1-5Z3 (1-80 replaces 1-5Z3 in Code 121, 17B)	CODE 122 ONLY												
				Circuit	R.F.	1st Det. Osc.	I.F.	2nd Det.	A. V. C.	Inter-Station Noise Supr. Cr.	1st A.F.	Driver (2nd A.F.)	Output (Class A)	Rectifier		

Line Voltage 120. Readings made direct from tube sockets on underside of chassis, using test prods., and high resistance D. C. voltmeter for D. C. voltages; A. C. voltmeter for A. C. voltages. Volume control of set at maximum.

Model No.	Power Input (Watts)	I.F. (K.C.)	Tubes Used	†Tube Socket Voltages								
				Circuit	R.F.	Det. Osc.	I.F.	2nd Det. & 1st A.F.	Driver (2nd A.F.)	Output (Class "A")		Rectifier
<b>18</b> (Codes 121-2-3-4) (& 503 Phono.)	110	260	1-6A7, 2-78, 1-75, 3-42, 1-80	Type Tube	78	6A7	78	75	42	42	42	80
				Filament Volts—F to F.....	6.3	6.3	6.3	6.3	6.3	6.3	6.3	5.0
				Plate Volts—P to K.....	210	210	210	120	205	280	280	350
				Screen Grid Volts—SG to K (Type 6A7—G3-5 to K).....	80	80	80	...	200	300	300	...
				Control Grid Volts—CG to K (Type 6A7—G4 to K).....	3	15	5.3	3	35	28	28	...
				Cathode Volts—K to F.....	2.8	2.8	5.3	0	0	0	0	...
				Type 6A7—G1 to K.....	...	35	...	...	...	...	...	...
				Type 6A7—G2 to K.....	...	130	...	...	...	...	...	...
<b>19</b> (Codes 121-126) (& 27 Phono.)	60	260	2-44, 1-36, 1-75, 1-42, 1-80	Circuit	R.F.	Det. Osc.	I.F.	2nd Det.	Output	Rectifier		
				Type Tube	44	38	44	75	42	80		
				Filament Volts—F to F.....	6.3	6.3	6.3	6.3	6.3	5.0		
				Plate Volts—P to K.....	235	230	240	175	235	350/Plate		
				Screen Grid Volts—SG to K.....	90	90	90	...	245	...		
				Control Grid Volts—CG to K.....	3	7.5	3	3	15	...		
				Cathode Volts—K to F.....	3.5	7.8	3.5	...	14	...		
				Diode Plate Volts—K to DP.....	...	...	...	2	...	...		
<b>19</b> (Code 128)	70	260	2-44, 1-36, 1-75, 1-42, 1-80	Circuit	R.F.	Det. Osc.	I.F.	2nd Det.	Output	Rectifier		
				Type Tube	44	38	44	75	42	80		
				Filament Volts—F to F.....	6.3	6.3	6.3	6.3	6.3	5.0		
				Plate Volts—P to K.....	225	225	225	150	270	350/Plate		
				Screen Grid Volts—SG to K.....	100	100	100	...	290	...		
				Control Grid Volts—CG to K.....	3	9.0	3	3	2.2	...		
				Cathode Volts—K to F.....	4.4	9.5	4.4	...	...	...		
				Diode Plate Volts—K to DP.....	...	...	...	2	...	...		
<b>20</b>	75	1400 (Adj. Freq.)	3-24, 1-27, 2-71A, 1-80	Type	Filament Voltage	Plate Voltage	Grid Voltage	Screen Grid Voltage	Cathode Voltage	Plate Milli-amperes		
				Circuit	2.2	225	2.8	82.0	10	3.0		
				24 1st R. F.	2.2	130	2.8	82.0	10	3.0		
				24 2d R. F.	2.2	30	1.0	2.0	8	...		
				27 Detector	2.2	115	...	...	7	3.0		
				71-A 1st Audio	4.8	190	43.0	...	...	18.0		
				71-A 2d Audio	4.8	190	43.0	...	...	18.0		
				80 Push-Pull Rectifier	4.8	190	43.0	...	...	36/Plate		
<b>28</b> A.C.—D.C. Two-band: 540-1720 K.C. 4.2-13. M.C.	50	460	1-6A7, 2-39/44, 1-75, 1-43, 1-25Z5	ON LINE VOLTAGE 120 A.C.								
				Type Tube	6A7	39-44	39-44	75	43	25Z5		
				Plate (P to K).....	100	100	98	45	95	120		
				Screen Grid (SG to K).....	(G1 = 8) (G2 = 80) (G3&5 = 60)	100	100	...	100	...		
				Total Filament Voltage—75.....								
				ON LINE VOLTAGE 120 D.C.								
				Type Tube	6A7	39-44	39-44	75	43	25Z5		
				Plate (P to K).....	95	95	85	40	90	...		
				Screen Grid (SG to K).....	(G1 = 10) (G2 = 80) (G3&5 = 60)	95	95	...	95	...		
				Total Filament Voltage—83.....								
<b>29</b> Two-band: 540-1720 K.C. 4.2-13. M.C.	70	460	1-6A7, 2-39/44, 1-75, 1-42, 1-80	Function	Det. Osc.	1st I.F.	2nd I.F.	2nd Det.	Output	Rectifier		
				Type	6A7	33/44	39/44	75	42	80		
				Filament (F to F).....	6.3	6.3	6.3	6.3	6.3	5.0		
				Plate (P to K).....	210	200	200	200	300	310		
				Screen (SG to K).....	80	80	80	...	315	...		
				Cathode (K to Gnd).....	4.8	4.8	4.8	0	0	...		
				6A7 Grid G1 to K.....	35	...	...	...	...	...		
				6A7 Grid G2 to K.....	170	...	...	...	...	...		
<b>30</b> (Battery Operated)	See Table for Plate Current	Tuned R.F. 1200-1400 Adj. Freq.	3-32, 3-30, 2-31	Tube	Circuit	Filament Volts	Plate Volts	Grid Volts	Plate Current Milliampere	Screen Grid Volts		
				32 1st R.F.	2.0	150	...	.0015	60			
				32 2nd R.F.	2.0	150	...	.0015	58			
				32 3rd R.F.	2.0	150	...	.0015	58			
				30 Detector Rectifier	2.0	...	...	...	...			
				30 Detector Amplifier	2.0	15	...	...	...			
				30 1st Audio	2.0	90	*	.002	...			
				31 2d Audio	2.0	150	24	.008	...			
				31 Push-Pull	2.0	150	24	.008	...			
<b>32</b> (32-volt D.C.)	50-70	260	1-36, 2-44, 1-75, 1-42, 1-84	Circuit	R.F.	Det.-Osc.	I.F.	A.F.	Output	Rect.		
				Type Tube	39/44	38	39/44	75	42	84		
				Filament Volts.....	6.8	6.8	6.8	6.8	6.8	6.8		
				Plate Volts.....	205	200	235	155	220	300		
				Screen Grid Volts (SG to K).....	85	83	85	...	240	...		
				Cathode Volts (K to Gnd).....	4	8.5	4	0	0	...		

†Line Voltage 120. Readings made direct from tube sockets on underside of chassis, using test prods, and high resistance D. C. voltmeter for D. C. voltages; A. C. voltmeter for A. C. voltages. Volume control of set at maximum. \*4 Volts with Volume Control "off".

Model No.	Power Input (Watts)	I.F. (K.C.)	Tubes Used	1 Tube Socket Voltages							
<b>34</b> (Battery Operated) All-Wave 540 K.C.- 23 M.C.	Filament Current 750 M.A. Total Plate Current is from 16-19 M.A.	460	2-34, 2-30, 1-1C6, 1-32, 1-19 (34A uses also 1-1C1)	Circuit	Det.-Osc.	1st I.F.	2nd I.F.	2nd Det.	1st A.F.	Driver	Output
				Type Tubes	1C8	34	34	30	32	30	19
				Filament Volts.....	1.9	1.9	1.9	1.9	1.9	1.9	1.9
				Plate Volts.....	(P-135) 135	135	135	...	40	135	135
Screen Grid Volts.....	(G2-120) 67½	67½	67½	...	35	...	...				
<b>35</b> (Battery Operated)	Plate Current 23 M.A.	260	3-30, 3-32, 1-33	Tubes		Filament Volts	Plate Volts	Grid Volts	Plate Current Milliamperes	Screen Grid Volts	
				Type	Circuit						
				32	R.F.	1.9	133	...	3.0	60	
				32	1st Det.	1.9	133	...	3.0	63	
30	Osc.	1.9	60	...	1.5	...					
32	I.F.	1.9	133	...	3.5	60					
30	2nd Det.	1.9	55	2.5	.05	...					
30	1st Audio	1.9	55	...	.05	...					
33	Output	1.9	125	7	12	135					
<b>37</b> (Battery Operated)	Fil. Current 720 M.A. Plate Current 8-12 M.A.	175	1-15, 2-32, 1-30, 1-19, 1-No. 6 (ballast)	Tubes		Filament Volts F to F	Plate Volts P to K	Screen Grid Volts SG to F	Control Grid Volts CG to F	Cathode Volts K to F	
				Type	Circuit						
				15	Det.-Osc.	1.9	120 (P to K)	60 (SG to K)	2.5 (CG to K)	5.5	
				32	I.F.	1.9	120	50	2.5	...	
32	2nd Det.	1.9	2.0	45	2.5	...					
30	1st Audio	1.9	110	...	4	...					
19	Output	2.0	120/Plate	...	4/Grid	...					
<b>38</b> (Battery Operated)	Fil. Cur. 720 M.A. Plate Cur. 8-12 M.A.	460	1-15, 2-32, 1-30, 1-19 (38A uses also 1-No. 6, ballast)	Circuit	Det.-Osc.	I.F.	2nd Det.	1st A.F.	Output		
				Type Tubes	15	32	32	30	19		
				Filament Volts—F to F.....	1.9	1.9	1.9	1.9	1.9		
				Plate Volts—P to F.....	135	(P to K)	135	40	135		
Screen Grid Volts—SG to F.....	67	(SG to K)	67	25	...						
Control Grid Volts—CG to F.....	4	(CG to K)	.15	.15	.15	3 (To Gnd.)					
Cathode Volts—K to F.....	5	...	...	...	...						
<b>38</b> (Code 123)	Fil. Cur. 720 M.A. Plate Cur. 8-12 M.A.	460	1-1A6, 2-32, 1-30, 1-19 (38A uses 1-1A1 ballast)	ALL VOLTAGES MEASURE TO GROUND OR -F							
					1A8	32 (I.F.)	32 (2nd Det.)	30	19		
				Plate.....	127	127	50	126	126		
				Screen Grid.....	(G3-62) (G345-64)	64	22	...	...		
Grid.....	G1-10	...	...	...	(G1-2.9 G2-2.9)						
<b>39</b> (Battery Operated) Two-Band: 550-1720 K.C. 5.5-16.0 M.C.	Fil. Cur. 670 M.A. Plate Cur. 19 M.A.	460	1-1C6, 1-34, 2-30, 1-32, 1-19 (Model 39-A uses also 1 type 6 ballast)	Circuit	Det.-Osc.	I.F.	2nd Det.	1st A.F.	Output		
				Type Tubes	1C8	34	30	32	30	19	
				Plate	130	130	...	45	130	130	
				Screen Grid	66	66	...	30	...	130	
Osc. Plate	112	...	...	...	...	...					
<b>40, 41 &amp; 42</b> (D.C.)	210	Tuned R.F. Adj. Freq. 1200-1400	3-24, 1-27, 2-71A	Tubes		Filament	Plate	Screen Grid	Control Grid		
				Type	Circuit						
				24	1 R.F.	2.1	100	75	.4		
				24	2 R.F.	2.1	100	75	.4		
24	Detector	2.1	45	15	1.8						
27	1 A.F.	2.4	87	...	.2						
71-A	2 A.F.	5	85	...	13						
71-A	2 A.F.	5	85	...	13						
<b>43</b> All-Wave (and 25) Phono.) 550 K.C.- 20 M.C.	Code 121 65 Code 221 88	460	4-44, 2-37, 1-42, 1-80	Tubes		Filament Volts F to F	Plate Volts P to K	Screen Grid Volts SG to K	Control Grid Volts CG to K	Cathode Volts K to F	
				Type	Circuit						
				37	Osc.	6.3	175	...	6	...	
				36	1st Det.	6.3	235	80	3.0	12.0	
44	1st I.F.	6.3	235	80	2	3.0					
44	2nd I.F.	6.3	235	80	3.5	3.5					
37	2nd Det.	6.3	0	0	0	0					
44	1st Audio	6.3	45	45	2	2.0					
42	Output	6.3	215	240	.4	15.0					
80	Rectifier	5.0	350/Plate	...	...	...					
<b>44</b> All-Wave (and 504 Phono.) 530 K.C.- 23 M.C.	65	460	1-6A7, 2-78, 1-75, 1-42, 1-80	Circuit	Det.-Osc.	1st I.F.	2nd I.F.	2nd Det. and 1st A.F.	Output	Rectifier	
				Type	6A7	78	78	75	42	80	
				Filament Volts—F to F.....	6.3	6.3	6.3	6.3	6.3	5.0	
				Plate Volts—P to K.....	260	260	255	165	250	350	
Screen Grid Volts—SG to K.....	50	85	85	...	260	...					
(Type 6A7—G3-5 to K1).....	(G1-K=20) (G2-K=168)	...	...	...	...	...					
Control Grid Volts—CG to K.....	4	.4	.35	.2	.5	...					
(Type 6A7—G4 to K).....	2.2	2.1	1.9	0	0	...					
Cathode Volts—K to F.....	...	...	...	...	...	...					

1 Line Voltage 120. Readings made direct from tube sockets on underside of chassis, using test prods, and high resistance D. C. voltmeter for D. C. voltages; A. C. voltmeter for A. C. voltages. Volume control of set at maximum.

Model No.	Power Input (Watts)	I.F. (K.C.)	Tubes Used	Tube Socket Voltages							
				Circuit	Det.-Osc.	1st I.F.	2d I.F.	2d Det.	Output	Rect.	
<b>45</b> Two-band: 540-1720 K.C. 4.2-13 M.C.	65	460	1-6A7, 2-39/44, 1-75, 1-42, 1-80	Type Tube	6A7	39/44	39/44	75	42	80	
				Filament (F to F)	6.3	6.3	6.3	6.3	6.3	5.0	
				Plate (P to K)	260	255	255	175	260	335	
				Screen Grid (SG to K)	(G1-35) (G2-135) (G3&5-85)	75	75	...	260	...	
				Cathode (K to F)	4.2	3.8	3.8	0	0	...	
<b>46</b> D.C.	42	Tuned R.F. Adj. Freq. 1200-1400	3-14, 1-17, 2-71A, 1 No. 2 (ballast)	Tubes							
				Type	Circuit	Filament Volts	Plate Volts	Grid Volts	Screen Grid Volts	Cathode Volts	
				14	R.F.	13.5	100	1.5	60	2.5	
				14	Det.	13.5	100	1.0	25	2.5	
				17	1st A.F.	13.5	100	25	...	4.5	
71-A	Output	4.5	90	15.5	...	...					
2	Ballast	8.0	...	...	...	...					
<b>47</b> (D.C.)	45	260	1-36, 2-44, 3-37, 2-43	Tubes							
				Type	Circuit	Filament Volts F to F	Plate Volts P to K	Screen Grid Volts SG to K	Control Grid Volts CG to K	Cathode Volts K to F	
				36	R.F.	6.3	100	100	4	40	
				36	Det.-Osc.	6.3	100	65	5.0	30	
				44	I.F.	6.3	100	100	...	25	
				37	Det.-Rect.	6.3	0	...	...	22	
				37	1st Audio	6.3	75	...	...	2	
				37	2nd Audio	6.3	90	...	...	10	
				43	Push-Pull (Output)	25	110	112	10	80	
				4	Ballast (121) 230 Volts	110	...	...	...	80	
5	Ballast (221) 230 Volts	110	...	...	...	...					
<b>48</b> (D.C.)	40	175	1-44, 2-36, 1-43, 1-No. 9 (ballast)	Tubes							
				Type	Circuit	Filament Volts F to F	Plate Volts P to K	Screen Grid Volts SG to K	Control Grid Volts CG to K	Cathode Volts K to F	
				36	Det.-Osc.	6.3	100	55	3.0	5	
				44	I.F.	6.3	70	70	4.5	10	
				36	2nd Det.	6.3	37	35	3.0	4	
43	Output	25.0	100	105	...	...					
9	Ballast	50	...	...	...	...					
<b>49</b> (D.C.) Two-band 540-1720 K.C. 4.2-12 M.C.	50	260	1-6A7, 2-78, 1-85, 1-76, 2-43	Tubes							
				Type	Circuit	Filament Volts F to F	Plate Volts P to K	Screen Grid Volts SG to K	Control Grid Volts CG to K	Cathode Volts K to F	
				78	P.F.	5.8	85	100	...	30	
				6A7	Det.-Osc.	5.7	90	(G3&5-K:65) (G2 -K:80) (G1 -K:12)	...	22	
				78	I.F.	6.3	90	100	...	15	
				85	2d Det.—1st A.F.	6.3	40	...	...	15	
				76	Driver	6.3	100	...	...	20	
				43	Output	2.6	100	105	60	60	
43	Rect.	2.6	100	105	...	...					
<b>50</b>	60	Tuned R.F. Adj. Freq. 1400	3-24, 1-47, 1-80	Tubes							
				Type	Circuit	Filament Volts	Plate Volts	Screen Grid Volts	Control Grid Volts	Cathode Volts	
				24	1st R.F.	2.4	245	90	2.5	3.0	
				24	2nd R.F.	2.4	250	90	2.5	3.0	
				24	Det.	2.4	100	42	8.0	8.0	
47	Output	2.4	175	190	1.0	...					
80	Rect.	5.0	...	...	...	...					
<b>51 &amp; 52</b> (& 24 Phono.)	60	175	2-24, 1-35, 1-47, 1-80	Tubes							
				Type	Circuit	Filament Volts	Plate Volts	Screen Grid Volts	Control Grid Volts	Cathode Volts	
				24	Osc. & 1st Det.	2.2	220	85	9.0	9.0	
				35	I.F.	2.2	210	85	3.0	3.0	
				24	2nd Det.	2.2	75	54	5.2	5.2	
47	Output	2.2	210	240	0.2	...					
80	Rect.	5.0	240/Plate	...	...	...					
<b>53</b> A.C.-D.C.	45	460	2-77, 1-43, 1-12Z3	115 VOLTS A.C.							
				Circuit	Det. Osc.	2nd Det.	Output	Rectifier			
				Type Tube	77	77	43	12Z3			
				Filament—Total 49.9 Volts A. C. ...	...	...	...	...			
				Plate Volts—P to K	65	15	94	112			
				Screen Grid Volts—SG to K	94	34	102	...			
				Control Grid Volts—CG to K	7	4	4	...			
				Cathode Volts—K to F	18	12	10	112			
				120 VOLTS D.C.							
				Circuit	Det. Osc.	2nd Det.	Output	Rectifier			
Type Tube	77	77	43	12Z3							
Filament—Total 51 Volts D. C. ...	...	...	...	...							
Plate Volts—P to K	95	14	94	10							
Screen Grid Volts—SG to K	93	34	100	...							
Control Grid Volts—CG to K	8	3	4	...							
Cathode Volts—K to F	7-14	6-12	3-26	68-73							

Model No.	Power Input (Watts)	I.F. (K.C.)	Tubes Used	Tube Socket Voltages										
				115 VOLTS A.C.										
				Circuit	Det. Osc.	I.F.	2nd Det.	Output	Rectifier					
				Type Tube	6A7	78	75	43	25Z5					
<b>54</b> A.C.-D.C.	50	460	1-6A7, 1-78, 1-75, 1-43, 1-25Z-5	Filament—Total 68	84	84	38	84	146					
				Plate Volts—P to K	K to G 3/5		68	68	90	...				
				Screen Grid Volts—SG to K	15	15	25	5	...					
				Control Grid Volts—CG to K	12	12	10	10	...					
				Cathode Volts—K to F	...	...	...	...	...					
								120 VOLTS D.C.						
								Circuit	Det. Osc.	I.F.	2nd Det.	Output	Rectifier	
								Type Tube	6A7	78	75	43	25Z5	
								Filament—Total 70	90	90	40	90	...	
								Plate Volts—P to K	70	70	92	...		
				Screen Grid Volts—SG to K	15	15	25	5	...					
				Control Grid Volts—CG to K	12	12	10	10	...					
				Cathode Volts—K to F	7.5	7.5	10	10	...					
<b>57, 58 &amp; 59</b>	57 & 58: 46 59: 52	460	2-77, 1-42, 1-80	Circuit										
				Type Tube	77	77	42	80						
				Filament Volts—F to F	6.3	6.3	6.3	6.3	4.8					
				Plate Volts—P to K	235	45	235	300						
				Screen Grid Volts—SG to K	110	35	250	...						
				Control Grid Volts—CG to K	10.5	25	25	...						
				Cathode Volts—K to F	25	15	15	...						
<b>60</b> (and 505 Phono.)	60	460	1-6A7, 1-78, 1-75, 1-42, 1-80	Circuit										
				Type Tube	6A7	78	75	42	80					
				Filament Volts—F to F	6.3	6.3	6.3	6.3	4.4					
				Plate Volts—P to K	250	250	170	240	350					
				Screen Grid Volts—SG to K (6A7-G3-5 to K)	85	120	...	245	...					
				Control Grid Volts—CG to K (6A7-G4 to K)	18	18	15	15	...					
				Cathode Volts—K to F	3	3	0	0	...					
				6A7-G1 to K=1.4 volts.										
				6A7-G2 to K=180 volts.										
				<b>65</b>	95	Tuned R.F. Adj. Freq. 1400	2-24, 1-27, 2-45, 1-80	Tube						
Type	Circuit	Filament Volts	Plate Volts					Grid Volts	Cathode Volts					
24	R.F.	2.5	150					1.5	1.5					
27	Det.	2.5	250					28	28					
45	Output	2.5	250					50	...					
80	Rect.	5.0	350 A.C.					...	...					
<b>66</b> (Two-band) 540-1720 K.C. 5.5-15.5 M.C.	60	460	1-6A7, 1-78, 1-75, 1-42, 1-80	Tube										
				Type	Circuit	Filament Volts	Plate Volts	Control Grid Volts	Screen Grid Volts	Cathode Volts				
				6A7	78	75	42	80						
				Filament (F-F)	6.3	6.3	6.3	6.3	5.0					
				Plate (P-K)	260	260	160	250	340					
				Screen (SG-K)	85	85	260	260	...					
Cathode (K-F)	2.1	2.2	0	0	...									
6A7-G1-K:20; 6A7-G2-K:130.														
<b>70</b>	80	260	4-24, 1-27, 1-47, 1-80	Tube										
				Type	Circuit	Filament Volts	Plate Volts	Screen Grid Volts	Control Grid Volts	Cathode Volts				
				24	1st R.F.	2.25	250	85	3	19.5				
				24	1st Det.	2.25	250	87	5.5	21.5				
				27	Osc.	2.25	85	...	2	19.5				
				24	1st I.F.	2.25	250	87	3	19.5				
				24	2nd Det.	2.25	105	75	6	22				
				47	Audio	2.25	245	255	1	...				
				80	Rectifier	4.7	...	...	...	...				
				<b>70</b> (A.V.C.)	80	260	3-35, 1-24, 1-27, 1-47, 1-80	Tube						
								Type	Circuit	Filament Volts	Plate Volts	Control Grid Volts	Screen Grid Volts	Cathode Volts
								35	R.F.	2.25	250	5	70	6
								24	Osc. & 1st Det.	2.25	250	8	12	8
								35	I.F.	2.25	250	20	70	0
27	Rectifier Detector	2.25	50					0	0	0				
35	Audio Amplifier	2.25	50					0	60	0				
47	Output	2.25	240					4	255	...				
80	Rectifier	4.70	260/Plate	...	...	...								
<b>71</b> (and 22 Phono.)	Code 121: 63 Code 221: 80	260	3-44, 1-36, 1-37, 1-42, 1-80	Tube										
				Type	Circuit	Filament Volts F to F	Plate Volts P to K	Screen Grid Volts SG to K	Control Grid Volts CG to K	Cathode Volts K to F				
				44	R.F.	6.3	245	90	4	20				
				36	Det. Osc.	6.3	235	90	2.3	20				
				44	I.F.	6.3	255	90	2	15				
				37	Det. Rect.	6.3	0	...	...	20				
				44	Audio	6.3	50	50	3	20				
				42	Output	6.3	250	260	2	15				
80	Rectifier	5.0	365/Plate	...	...	...								

Line Voltage 120. Readings made direct from tube sockets on underside of chassis, using te- prods, and high resistance D. C. voltmeter for D. C. voltages; A. C. voltmeter for A. C. voltages. Volume control of set at maximum.

Model No.	Power Input (Watts)	I. F. (K.C.)	Tubes Used	†Tube Socket Voltages						
				Tube		Filament Volts	Plate Volts	Screen Grid Volts	Control Grid Volts	Cathode Volts
Type	Circuit									
<b>76</b> <b>77</b>	105	Tuned R.F. Adj. Freq. 1400	3-24, 1-27, 2-45, 1-80	24	1st R.F.	2.3	145	90	3	13
				24	2d R.F.	2.3	146	90	3	13
				24	Detector	2.3	36	30	1.4	12
				27	1st A.F.	2.3	140	..	1	10
				45	2d A.F.	2.2	230	..	46	..
				45	2d A.F.	2.2	230	..	46	..
				80	Rectifier	4.5	..	..	..	..
<b>80</b>	46	460	2-36, 1-42, 1-80	Tube		Filament Volts F to F	Plate Volts P to K	Screen Grid Volts SG to K	Control Grid Volts CG to K	Cathode Volts K to F
				Type	Circuit					
				36	Det.-Osc.	6.3	245	165	6.4	8.4
				36	2nd Det.	6.3	40	15	4	0
				80	Output Rectifier	5.0	340/Plate	..	..	..
<b>81</b>	46	460	2-77, 1-42, 1-80	Circuit		Det. Osc.	2nd Det.	Output	Rectifier	
				Type Tube		77	77	42	80	
				Filament Volts—F to K		6.3	6.3	6.3	5.0	
				Plate Volts—P to K		240	75	240	425	
				Screen Grid Volts—SG to K		85	40	250	..	
				Control Grid Volts—CG to K		5.6	6	2.3	..	
<b>84</b>	43	460	2-77, 1-42, 1-80	Circuit		Det. Osc.	2nd Det.	2nd A.F. (Output)	Rectifier	
				Type Tube		77	77	42	80	
				Filament Volts—F to F		6.3	6.3	6.3	5.0	
				Plate Volts—P to K		240	70	225	340	
<b>86</b>	70	"Neutrodyne Plus" Adj. Freq. 1200-1400	4-26, 1-27, 2-71A, 1-80	Tube		Filament Volts	Plate Volts	Grid Volts		
				Type	Circuit					
				26	R.F. & 1st A.F.	1.4	85	5.5		
				27	Det.	2.2	30	..		
				71-A	2d A.F.	4.6	172	41		
<b>87</b>	95	"Neutrodyne Plus" Adj. Freq. 1200-1400	4-26, 1-27, 2-45, 1-80	Tube		Filament Volts	Plate Volts	Grid Volts		
				Type	Circuit					
				26	R.F. & 1st A.F.	1.5	90	6.0		
				27	Det.	2.5	30	..		
				45	2d A.F.	2.5	245	45		
<b>89</b> (and 26 Phono.)	60	260	1-36, 2-44, 1-75, 1-42, 1-80	Same as Model 19 (First Type)						
				<b>89</b> (Code 123)	60	260	2-44, 1-77, 1-75, 1-42, 1-80	Tube	44 R.F.	77 Det. Osc.
Point P	235	230	240					175	235	350 A.C.
SG	90	90	90					..	245	..
K	3.5	7.8	3.5					0	0	..
<b>90</b> (1st type)	95	175	4-24, 2-27, 2-45, 1-80	Tube		Filament Volts	Plate Volts	Grid Volts	Screen Grid Volts	Cathode Volts
				Type	Circuit					
				24	1st R.F.	2.1	250	3.3	83	16
				27	Osc.	2.1	90	1	..	16
				24	1st Det.	2.1	250	5.5	23	15
				24	1st I.F.	2.1	250	3.8	80	15
				24	2nd Det.	2.1	48	3.7	42	15
				27	1st Audio	2.1	140	..	25	..
				45	Audio	2.2	243	46	..	..
				45	Audio	2.2	243	46	..	..
				80	Rect.	4.5	..	..	..	..
<b>90</b> Above Serial No. 237,001	95	175	3-24, 4-27, 1-47, 1-80	Tube		Filament Volts	Plate Volts	Screen Grid Volts	Control Grid Volts	Cathode Volts
				Type	Circuit					
				24	R.F.	2.0	255	60	.25	20
				27	Osc.	2.0	65	..	6	20
				24	1st Det.	2.0	250	64	6.0	24
				24	I.F.	2.0	270	76	.25	18
				27	Det. Rect.	2.0	0	..	0	17
				27	Det. Amp.	2.0	140	..	.4	18
				27	1st A.F.	2.0	45	..	.4	20
				47	Output Rectifier	2.0	220	240	1.0	..
				80	Rectifier	4.5	..	..	..	..



Model No.	Power Input (Watts)	I.F. (K.C.)	Tubes Used	Tube Socket Voltages													
				Type	Circuit	Filament Volts	Plate Volts	Control Grid Volts	Screen Grid Volts	Cathode Volts							
<b>90</b> Serial B32001-B35000 and above B53100	95	260	2-35, 1-24, 3-27, 2-47, 1-80	Tube		Filament Volts	Plate Volts	Control Grid Volts	Screen Grid Volts	Cathode Volts							
				Type	Circuit												
				35	R.F.	2.5	225	0	38	8							
				24	Det.-Osc.	2.5	215	12	40	22							
				35	I.F.	2.5	235	10	38	10							
				27	Det. Rect.	2.5	..	..	..	10							
				27	Det. Amp.	2.5	50	0	..	1.							
				47	1st Audio	2.5	90	0	..	1.							
				47	Output	2.5	210	10	225	..							
				80	Rectifier	5.0	225/Plate	..	..	..							
<b>91</b> (and 23 Phono.) Also 14 (Code 126 & 226)	Code 126 90 Code 226 95	260	2-44, 1-36, 3-37, 2-42, 1-80	Tube		Filament Volts	Plate Volts	Screen Grid Volts	Control Grid Volts	Cathode Volts							
				Type	Circuit												
				44	R.F.	6.3	200	50	6	25							
				36	Det.-Osc.	6.3	250	90	10	10							
				44	I.F.	6.3	250	55	2	5							
				37	Det. Rect.	6.3	90	..	2	2							
				37	Det. Amp.	6.3	60	..	2	2							
				37	Audio	6.3	100	..	0	2							
				42	Output	6.3	240	250	15	15							
				80	Rectifier	5.0	310/Plate	250	15	15							
<b>95 and 96</b>	115	Tuned R.F. Adj. Freq. 1400	3-24, 3-27, 2-45, 1-80	Tube		Filament Volts	Plate Volts	Screen Grid Volts	Control Grid Volts	Cathode Volts							
				Type	Circuit												
				24	R.F.	2.15	155	95	0	5.3							
				27	Det.	2.15	0	..	0.5	0.7							
				27	1st A.F.	2.15	27	..	0.5	5.5							
				27	2nd A.F.	2.15	85	..	2.0	5.5							
				45	Output	2.2	250	..	41	..							
				80	Rect.	4.5	..	..	..	..							
				<b>97</b> 550-1750 K.C. 1.75-5.8 M.C. 5.8-18.0 M.C.	90	460	2-78, 1-6A7, 1-85, 2-42, 1-80	Tube		78 R.F.	6A7 Det. Osc.	78 I.F.	85 2nd Det.	42 Output			
								Point P	257						257	265	105
SG	97	97	97					..	270								
K	2.3	2.5	3					..	..								
								6A7-G <sub>1</sub> = -14; G <sub>2</sub> = 179.									
<b>111 and 112</b> (Below Serial 174000)	105	175	4-24, 4-27, 2-45, 1-80					Tube		Filament Volts	Plate Volts	Screen Grid Volts	Control Grid Volts	Cathode Volts			
				Type	Circuit												
				24	1st R.F.	2.1	190	60	2	5							
				27	Osc.	2.1	45	..	7	7							
				24	1st Det.	2.1	150	52	4.6	8							
				24	1st I.F.	2.1	185	65	..	5							
				24	2nd I.F.	2.1	190	82	2.2	5							
				27	Det. Rect.	2.2	..	..	4	5							
				27	Det. Amp.	2.2	35	..	4	5							
				27	1st A.F.	2.1	95	..	1.2	5							
45	2nd A.F.	2.2	255	..	50	..											
45	2nd A.F.	2.2	255	..	50	..											
80	Rect.	4.9	..	..	..	..											
<b>112</b> (Above Serial 174001)	105	175	4-24, 4-27, 2-47, 1-80	Tube		Filament Volts	Plate Volts	Screen Grid Volts	Control Grid Volts	Cathode Volts							
				Type	Circuit												
				24	1st R.F.	2.25	160	75	2	5.0							
				27	Osc.	2.25	55	..	6	7.5							
				24	1st Det.	2.25	160	75	2.5	8.0							
				24	1st I.F.	2.25	160	75	2	5.0							
				24	2nd I.F.	2.25	160	75	6	4.0							
				27	Det. Rect.	2.25	..	..	..	..							
				27	Det. Amp.	2.25	20	..	..	4.0							
				27	1st A.F.	2.30	150	..	..	4.0							
47	2nd A.F.	2.30	245	255	16.5	..											
47	2nd A.F.	2.30	245	255	16.5	..											
80	Rect.	5.0	..	..	..	..											
<b>116-B</b> High Fidelity All-wave	100	460	3-78, 2-77, 1-76, 1-37, 3-42, 1-80	Tube		78 R.F.	77 1st Det.	78 Osc.	78 1st I.F.	78 2nd I.F.	37 2nd Det.	77 1st A.F.	42 Driver	42 Output			
				Point P	187										202	75	193
				SG	74	74	..	74	74	..	52	192	279				
				K	1.8	5.4	5.0	1.8	5.1	..	..	..	..				
										80 Rect. Cathode - 290V.							
				<b>116-X</b> High Fidelity All-wave	135	460	3-78, 2-77, 1-76, 1-37, 1-42, 2-6A3, 1-5Z3	Tube		78 R.F.	77 1st Det.	78 Osc.	78 1st I.F.	78 2nd I.F.	37 2nd Det.	77 1st A.F.	42 Driver
Point P	207	215	98					208	212								
SG	89	80	..					80	89	..	72	220	320				
K	2.2	5.2	5.2					2.1	6.4	0	..	..	340				
<b>118</b> Two-band (and 507 Phono.) 540-1720 K.C. 4.2-12 M.C.	110	260	1-6A7, 2-78, 1-75, 3-42, 1-80					Function		R.F.	Det.-Osc.	I.F.	A.F.	Driver	Output	Rect.	
								Type	78								6A7
				Filament (F-F)	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	5.0				
				Plate (P-K)	180	180	200	125	95	280	280	280	315				
				Screen (SG-K)	80	175	80	..	195	290	290	..	..				
				Cathode (K to F)	2.5	2.6	3.2	0	0	0	0	..	..				
				6A7-G <sub>1</sub> to K	26	..	..	..	..	..	..	..	..				
				6A7-G <sub>2</sub> to K	150	..	..	..	..	..	..	..	..				

Line Voltage 120. Readings made direct from tube sockets on underside of chassis, using test prods. and high resistance D. C. voltmeter for D. C. voltages; A. C. voltmeter for A. C. voltages. Volume control of set at maximum.

Model No.	Power Input (Watts)	I.F. (K.C.)	Tubes Used	†Tube Socket Voltages																	
				Circuit	Det.-Osc.	1st I.F.	2nd I.F.	A.F.	Output	Rectifier											
<b>144</b> All-Wave (and 506 Phono.) 540 K.C.-23 M.C.	70	460	1-6A7, 2-78, 1-75, 1-42, 1-80	Tube	6A7	78	78	75	42	80											
				Filament Volts (F-F)	6.3	6.3	6.3	6.3	6.3	5.0											
				Plate Volts (P-K)	250	230	230	185	300	350											
				Screen Grid Volts (SG-K)	60	75	75	0	310	...											
				Cathode Volts (K-Gnd)	1.4	2	2	0	0	...											
				6A7-G2 to K	160	...	...	...	...	...											
				6A7-G1 to K	20	...	...	...	...	...											
<b>200</b> High Fidelity	130	175	1-6A7, 3-78, 1-76, 1-37, 3-42, 1-5Z3	Circuit	R.F.	Det. Osc.	1st I.F.	2d I.F.	Shadow-meter Control	A.F.	Driver	Out-put	Rect.								
				Type Tube	78	6A7	78	78	37	75	42	42	42	5Z3							
				Test Points																	
				F to F	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	5.0							
				F to K	225	210	210	220	63	110	8.3	225	335	350							
				SG to K	80	73	73	76	4	0	0	0	0	...							
				K to Gnd	3	8	8	4	0	0	0	0	0	...							
CG to K	0.2	0	0.2	4	0	...	0.2	...	35	35											
6A7-G1 to K	22.0																				
6A7-G2 to K	90.0																				
<b>201</b> High Fidelity Two-Band: 540-1720 K.C. 4.2-12.0 M.C.	130	260	3-78, 1-6A7, 1-37, 1-75, 3-42, 1-5Z3	R.F.	78	Det.-Osc.	6A7	1st I.F.	78	2nd I.F.	78	Shadow-meter	37	2nd Det.	1st A.F.	75	Driver	42	Out-put	42	42
				P-K	210	205	205	210	65	115	215	345									
				SG-K	120	(G1-K = 17)	115	115	...	...	215	345									
				K-Gnd.	4.2	(G-K = 145)	3.8	7.8	7.8	0	0	0	0								
<b>470</b> All-Wave 550 K.C. 19 M.C.	110	260	5-24, 2-27, 1-47, 1-80	Tube		Filament	Plate	Screen	Control	Cathode											
				Type	Circuit	Volts	Volts	Grid	Grid	Volts											
				SHORT WAVE UNIT																	
				27	Osc.	2.2	110	24	3.3	0											
				24	Det.	2.2	24	24	5	0											
				BROADCAST UNIT																	
				24	R.F.	2.4	255	50	3.5	25											
				24	1st Det.	2.4	260	60	9	38											
				27	Osc.	2.4	60	50	3.5	25											
				24	I.F.	2.4	265	50	3	22											
				24	2nd Det.	2.4	116	40	7	25											
				47	Output	2.5	205	220	7	...											
				80	Rectifier	4.5	260/Plate	...	...	...											
SHORT WAVE UNIT																					
27	Osc.	2.2	110	24	3.3	0															
24	1st Det.	2.2	24	24	5	0															
BROADCAST UNIT																					
24	R.F.	2.1	220	50	6	15															
27	Osc.	2.1	80	55	5	15															
24	1st Det.	2.1	210	55	5	15															
24	I.F.	2.1	220	60	8	15															
27	Rect. Det.	2.1	...	...	...	14															
27	Amp. Det.	2.1	150	...	0	15															
27	1st Audio	2.1	150	220	2	15															
47	Output	2.4	205	220	7	...															
80	Rectifier	4.5	220/Plate	...	...	...															
<b>490</b> All-Wave 550 K.C. 19 M.C.	125	260	4-24, 5-27, 1-47, 1-80	Tube		Filament	Plate	Screen	Control	Cathode											
				Type	Circuit	Volts	Volts	Grid	Grid	Volts											
				SHORT WAVE UNIT																	
				27	Osc.	2.2	110	24	3.3	0											
				24	1st Det.	2.2	24	24	5	0											
				BROADCAST UNIT																	
				24	R.F.	2.1	220	50	6	15											
				27	Osc.	2.1	80	55	5	15											
				24	1st Det.	2.1	210	55	5	15											
				24	I.F.	2.1	220	60	8	15											
				27	Rect. Det.	2.1	...	...	...	14											
				27	Amp. Det.	2.1	150	...	0	15											
				27	1st Audio	2.1	150	220	2	15											
47	Output	2.4	205	220	7	...															
80	Rectifier	4.5	220/Plate	...	...	...															
<b>511</b>	50	Neutrodyne Adj. Freq. 1200-1400	4-26, 1-27, 1-71A, 1-80	Tube		Filament	Plate	Grid													
				Type	Circuit	Volts	Volts	Volts													
				26	R.F. & 1st A.F.	1.62	98.0	6.0													
				27	Det.	2.65	38.0	...													
				71	Output	5.28	148.0	29.0													
80	Rect.	5.28	875 A.C.	80 each plate																	
<b>600</b> 530-1800 K.C.	45	460	1-6A7, 1-77, 1-41, 1-80	Point	Tube	6A7	77	41	80												
				F	6.3	6.3	6.3	5.0													
				P	222	47	210	...													
				SG	76	25	222	...													
				K	1.4	...	...	...													
				G2	157	...	...	...													
<b>602</b> (A.C.-D.C.) 530-1800 K.C.	55	460	1-6A7, 1-78, 1-75, 1-43, 1-25Z5	Point	Tube	6A7	78	75	43	25Z5											
				F	6.3	6.3	6.3	25	25												
				P	102	102	40	97	...												
				SG	47	47	...	102	...												
				K	0.7	0.9	...	12.5	...												
				G2	94	...	...	...	...												



Model No.	Power Input (Watts)	I.F. (K.C.)	Tubes Used	Tube Socket Voltages						
<b>610</b> 540-1720 K.C. 2.3-2.5 M.C. 5.8-18.0 M.C.	55	460	1-6A7, 1-78, 1-75, 1-42, 1-80	Tube	6A7 Det. Osc.	78 I.F.	75 2nd Det.	42 Output		
				Point P SG K	255 85 2.3	250 85 2.5	145 ... ...	238 258 ...		
				6A7-G: = 147						
<b>611</b> (A.C.-D.C.) 540-1720 K.C. 2.3-2.5 M.C. 5.8-18.0 M.C.	50	460	1-6A7, 1-78, 1-75, 1-43, 1-25Z5	Tube	6A7 Det. Osc.	78 I.F.	75 2nd Det. A.F.	43 Output	25Z5 Rect.	
				Point P SG K	106 55 0.8	102 55 1.1	41 ... 0	101 106 12.5	121	
<b>620</b> 540-1720 K.C. 1.75-5.8 M.C. 5.8-18.0 M.C.	65	460	1-6A7, 2-78, 1-75, 1-42, 1-80	Tube	78 R.F.	6A7 Det. Osc.	78 I.F.	75 2nd Det.	42 Output	
				Point P SG K	258 95 2.65	258 95 2.5	258 95 2.85	153 ... ...	243 258 ...	
				6A7-G: = 173						
<b>623</b> (Battery Operated) 540-1720 K.C. 2.3-2.5 M.C. 5.7-18.0 M.C.	Filament Current 19 M.A. Plate Current 19 M.A.	460	1-1C6, 1-34, 2-30, 1-32, 1-19 (Model 623-A uses 1 type 6 ballast tube)	Tube	1C6 Det.- Osc.	34 I. F.	30 2nd Det.- A.V.C.	32 1st A.F.	30 Driver	18 Output
				Point P SG G Osc. Pl.	135 64 ... 106	135 64 0.2 ...	0 ... 0.1 ...	52 24 ... ...	133 ... 0.18 ...	134 ... 3.0 oh. ...
<b>624</b> (6-volt battery) 530-1720 K.C. 2.3-2.5 M.C. 5.7-18.0 M.C.	1.5 Amps.	460	1-1C6, 1-1A4, 1-32, 2-30, 1-19	Point	1C6	1A4	30 2nd Det.	32	30 2nd A.F.	19
				Tube	1C6	1A4	30 2nd Det.	32	30 2nd A.F.	19
				F ..... 2 2 2 2 2 2 P ..... 150 150 ... 50 150 150 SG ..... 83 80 ... 33 ... Gz ..... 115 ...						
<b>630</b> 540-1720 K.C. 1.75-5.8 M.C. 5.8-18.0 M.C.	70	460	1-6A7, 2-78, 1-75, 1-42, 1-80	Tube	78 R.F.	6A7 Det. Osc.	78 I.F.	75 2nd Det.	42 Output	
				Point P SG K	245 102 2.7	245 102 2.6	245 102 2.6	188 ... ...	298 311 ...	
				6A7-G: = 178						
<b>635</b>				Tube	78 R.F.	6A7 Det. Osc.	78 I.F.	75 2nd Det.	42 Output	
				Point P SG K	71 91 2.1	240 91 2.2	242 91 2.3	102 ... ...	240 250 ...	
				6A7-G: = 102V. 80 Fil.—Gnd.: 300V.						
<b>640</b> 145-390 K.C. 540-1720 K.C. 2.3-2.5 M.C. 5.7-18.0 M.C.	85	460	1-6A7, 2-78, 1-85, 2-42, 1-80	Tube	78 R.F.	6A7 Det. Osc.	78 I.F.	85 2nd Det.	42 Output	
				Point P SG K	71 91 2.1	240 91 2.2	242 91 2.3	102 ... ...	240 250 ...	
				6A7-G: = 102V. 80 Fil.—Gnd.: 300V.						

Model No.	Power Input (Watts)	I.F. (K.C.)	Tubes Used	†Tube Socket Voltages							
<b>641</b> (D.C.) 530-1720 K.C. 2.2-2.6 M.C. 5.8-18.0 M.C.	40	460	2-78, 1-6A7, 1-76, 1-85, 2-43	<b>Tube</b>	<b>78 R.F.</b>	<b>6A7 Det.-Osc.</b>	<b>78 I.F.</b>	<b>85 2nd Det.</b>	<b>76 A.F.</b>	<b>43 Output</b>	
				Point P SG K Osc. Pl.	102 102 0 ...	102 56 0 86	93 102 1 ...	31 32 0 ...	102 ... 0 ...	110 112 37 ...	
<b>642</b> (32-volts D.C.) 540-1750 K.C. 1.75-5.8 M.C. 5.8-18.0 M.C.	43	460	1-78, 1-6A7, 1-76, 1-6F7, 1-85, 2-48	<b>Tube</b>	<b>78 R.F.</b>	<b>6A7 1st Det.</b>	<b>76 Osc.</b>	<b>6F7 I.F. 1st A.F.</b>	<b>85 2nd A.F.</b>	<b>48 Output</b>	
				Point P SG K Osc. Pl.	32 32 1 ...	32 14.5 1 14.5	32 ... 1 ...	32 32 1.5 6.5	29 ... 1 ...	32 32 5.8 ...	
<b>643</b> (Battery Operated) 150-390 K.C. 540-1720 K.C. 1.75-5.8 M.C. 5.8-18.0 M.C.	Fil. Cur. 750 M.A. Plate Cur. 22 M.A.	460	1-1C6, 2-34, 1-32, 2-30, 1-19 (Model 643-A uses 1 type 1C1 bal- last tube)	<b>Tube</b>	<b>1C8 Det. Osc.</b>	<b>34 R.F.</b>	<b>34 I.F.</b>	<b>30 2nd Det.</b>	<b>32 1st A.F.</b>	<b>30 Driver</b>	<b>10 Output</b>
				Point P SG K G2	137 63 12 100	137 63 ... ...	137 63 ... ...	0 ... ... ...	50 25 ... ...	137 ... ... ...	137 ... 3 each ...
<b>645</b> 540-1750 K.C. 1.75-5.8 M.C. 5.75- 18.0 M.C.	100	460	2-78, 1-6A7, 1-85, 2-42, 1-80	<b>Point Tube--</b>	<b>78</b>	<b>6A7</b>	<b>78</b>	<b>85</b>	<b>42</b>	<b>80</b>	
				F.....	6.3	6.3	6.3	6.3	6.3	5.0	
<b>650</b> 145-390 K.C. 540-1720 K.C. 2.3-2.5 M.C. 5.8-18.0 M.C.	98	460	2-78, 1-6A7, 1-75, 3-42, 1-80	<b>Tube</b>	<b>78 R.F.</b>	<b>6A7 Det.-Osc.</b>	<b>78 I.F.</b>	<b>76 2nd Det.</b>	<b>42 Driver</b>	<b>42 Output</b>	
				Point P SG K	55 90 2.2	200 90 2.3	200 90 2.6	115 ... ...	200 200 ...	300 200 ...	
<b>651</b> (A.C.-D.C.) 540-1750 K.C. 1.75-5.8 M.C. 5.75- 18.0 M.C.	65	460	2-78, 1-6A7, 1-85, 1-76, 2-43, 1-25Z5	<b>Point Tube--</b>	<b>6A7</b>	<b>78 R.F.</b>	<b>78 I.F.</b>	<b>85</b>	<b>76</b>	<b>43</b>	<b>25Z5</b>
				F.....	6.3	6.3	6.3	6.3	6.3	25	
<b>655</b> 540-1750 K.C. 1.75-5.8 M.C. 5.75- 18.0 M.C.	100	460	2-78, 1-6A7, 1-75, 3-42, 1-80	<b>Point Tube--</b>	<b>6A7</b>	<b>78 R.F.</b>	<b>78 I.F.</b>	<b>75</b>	<b>42 Driver</b>	<b>42 Output</b>	<b>80</b>
				F.....	6.3	6.3	6.3	6.3	6.3	5.0	

Model No.	Power Input (Watts)	I.F. (K.C.)	Tubes Used	:Tube Socket Voltages																																																																												
<b>660</b> 150-390 K.C. 540-1750 K.C. 1.75-5.8 M.C. 5.8-18.0 M.C. <b>665</b>	90	460	3-78, 1-76, 1-77, 1-75, 3-42, 1-80.																																																																													
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Tube	78 R.F.	77 1st Det.	78 Osc.	78 1st I.F.	78 2nd I.F.	75 1st A.F.	42 Driver	42 P.P.																																																																								
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				Tube	78 R.F.	78 Osc.	78 1st Det.	78 1st I.F.	78 2nd I.F.	85 1st I.F.	85 2nd I.F.	42 Driver	8A3 P.P.	6B7 A.V.C.																																																																		
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