

SECTION 4

MAINTENANCE

4.1 ROUTINE MAINTENANCE

Periodic inspections should be made to determine that all transmitter parts, both mechanical and electrical, are operating properly. The greatest enemies of electronic equipment are corrosion and dirt. High voltage circuits accumulate dust rapidly. Remove foreign material with a soft brush or a dry oil-free jet of air. Moving parts, such as tap switches, should be kept clean to prevent excessive wear. A burnishing tool (never emery cloth or sandpaper) may be used to clean relay contacts.

4.2 LUBRICATION

The blower should be lightly oiled every six months with SAE 20 oil. Gears and bearing surfaces will also require an occasional light oiling. The bandswitch rack-and-pinion gear, figure 6-6, should be lubricated every six months with a mixture of powdered graphite and SAE 20 oil. Use only enough oil to make the oil-graphite mixture a liquid. Protect the exciter chassis with a cloth while applying the lubricant. Lubricants used in the vicinity of electrical equipment should be applied carefully and sparingly. It is better to apply too little lubricant than too much.

4.3 VACUUM TUBES

The best way to check tubes in equipment of this type is to replace them with tubes that are known to be good and to note any change in performance. Tubes should not be replaced when there is a possibility that a fault in the transmitter may cause the new tubes to be damaged. A complete list of tube types is included in the General Description section of this book.

4.4 FUSES

All fuses are located on the lower control panel or behind the removable lower front panel as shown in figures 6-1 and 6-2. The Parts List section of this book identifies and describes the fuses. Operation of the overload reset switch and overload relay adjustment are described in the Operation section.

4.5 70E-14 OSCILLATOR UNIT

Maintenance of the oscillator unit should be limited to changing tubes. If any difficulty arises within the oscillator that cannot be corrected by replacing the two 6BA6 tubes, the oscillator should be removed from the transmitter and returned to the Collins Radio Company, Cedar Rapids, Iowa, for repair.

To remove the oscillator from the transmitter, take off the 10-1/2" x 23-1/2" aluminum plate that covers the lower half of the rf unit as shown in figure 6-4. Hold the plate tightly while removing it, as the additional weight of the blower causes it to be quite heavy. When the plate is loose, reach behind it and remove the blower plug from J-202. Be sure to replace this plug when the transmitter is reassembled.

Carefully unsolder the oscillator's electrical connections at the terminal strip beside the oscillator. Support the oscillator and remove the four screws holding the oscillator bracket to the panel. Three of these screws are visible in figure 6-7. The oscillator is now mechanically free. Remove it by pulling it straight back. The shaft coupling slides apart as the oscillator is moved away from the panel. After the 70E-14 is clear of the transmitter, remove the mounting bracket and shaft coupling from the oscillator. Return only the oscillator to the factory.

When reinstalling the oscillator in the transmitter, care must be used to make the dial reading coincide with the oscillator frequency. The following procedure is recommended:

- a. Use a number 6 Bristo wrench to loosen the set screw on the shaft coupler connecting to the main tuning dial.
- b. Reassemble the oscillator in its proper position, using a mirror to make sure that the shaft coupler meshes correctly.
- c. Make all electrical connections. The rf output wire is a small coaxial cable. Filaments are color coded green and white. The plate-voltage lead is red and white.
- d. Move the pointer on the bandspread dial to the vertical position by means of the slotted screwdriver adjustment located to the left of the frequency selector knob and above the meter switch.
- e. Remove 6AQ5 buffer tube V-302 from its socket to avoid applying excitation to the ganged exciter stages while they are not tuned to the oscillator frequency.

- f. Couple the oscillator output to a receiver.
- g. Remove fuse F-403. This fuse is located on the lower control panel. Turn the plate switch off, the filament switch on, and the send-standby-calibrate switch to the calibrate position. If the 500 volt primary fuse, F-403, was removed, only the 300 volt power supply will be energized.
- h. Allow the oscillator to warm up for about a minute, then tune the receiver in the vicinity of the 160 meter band to find the approximate oscillator frequency.
- i. Bring the oscillator frequency to 1800 kilocycles, as indicated on the receiver dial, by carefully turning the oscillator tuning shaft clockwise to increase the frequency or counter clockwise to decrease the frequency.
- j. Turn the transmitter bandspread dial to 1800 kilocycles, while maintaining the oscillator frequency at 1800 kilocycles.
- k. Replace the 6AQ5 tube, V-302, in its socket.
- l. Beat the oscillator fundamental frequency against the 1800 kilocycle harmonic of a 100 kilocycle crystal calibrator, or other accurate frequency standard, that has been checked against VWV. With the receiver beat frequency oscillator turned off, carefully rotate the oscillator tuning shaft until the oscillator is zero beat with the frequency standard at 1800 kilocycles. If tuning the receiver effects the beat frequency of the two signals, an image frequency of one of the signals is involved. A check must be made to find and correct the frequency error.
- m. While maintaining the two signals at zero beat, use a mirror and a number 6 Bristo wrench to tighten the shaft coupling. The oscillator frequency is now set to correspond to the dial reading.
- n. If desired, an additional adjustment may be made to the bandspread dial as outlined below in paragraph 4. 6.

4. 6 BANDSPREAD DIAL ADJUSTMENT

If a slight discrepancy exists between the oscillator bandspread dial and the true oscillator frequency, it may be corrected by using the bandspread adjustment to move the bandspread dial pointer to the right or left. Beat the oscillator's fundamental frequency or one of its harmonics against any accurate frequency standard such as WWV. The bandspread dial adjustment is located to the left of the frequency selector dial and above the meter switch. Turn

this slotted shaft carefully to the right or left with a small screwdriver until the bandsread pointer indicates the true oscillator frequency.

4.7 HIGH VOLTAGE ARC GAP ADJUSTMENT

The arc gaps protect the circuits associated with them. Under no circumstances should they be increased beyond the following maximum settings. Modulation transformer secondary (protects transformer) .050 inches. Pi section output (protects C-101/C-102) .040 inches. L section output (protects coax connectors) .015 inches. An automobile feeler gauge may be used to adjust the gaps to the proper settings.

If either of the output network gaps arc over, it is an almost certain indication that the transmitter is not working into the proper impedance.

4.8 TYPICAL CONTROL SETTINGS

The following control readings were taken on a KW-1 transmitter at 1000 watts input (500 watts on 160 meters) operating into a 52 ohm resistive load:

Frequency Selector Reading (Megacycles)	Power Amplifier Plate Tuning	Antenna Loading
1.8	4.84	62
2.0	8.26	75
3.7	6.42	77
4.0	9.95	90
7.0	9.23	77
7.3	9.80	83
14.0	13.13	83
14.4	13.32	87
21.0	13.22	78
21.45	13.38	82
26.95	12.50	76
29.7	13.30	89

4.9 ALIGNMENT OF EXCITER STAGES

To align the exciter stages the rf unit, figure 6-4, must be operated outside the transmitter cabinet. Under these conditions, the plate switch must remain in the off position to prevent accidental application of the high voltage.

Operate the transmitter with the send-standby-calibrate switch in the calibrate position, the meter switch in the 807 grid position, and the tune switch in the tune position. Remove the rear inspection plate. Tune the multiplier stages for maximum 807 grid current as indicated in the chart. **USE AN INSULATED SCREWDRIVER OR TUNING WAND.**

EXCITER TUNING CHART

BAND	FREQUENCY	COMPONENTS TO BE TUNED
160 meter	1.7 mc	L-301
	2.0	C-308
80	3.4	L-302
	4.0	C-311, C-313
40	6.8	L-303, L-304
	7.5	C-316, C-319, C-321
20	13.6	L-305
	15.0	C-324, C-328
15	20.4	L-306
10-11	27.2	L-307
	29.8	C-335

When all of the components have been tuned, make a check over each amateur band. The 807 grid current should not show any abrupt changes or unstable conditions.

4.10 After the multipliers have been tuned for proper operation, set the meter switch to the PA grid position. Remove the two inspection plates on the side of the rf unit, figure 6-4, and adjust the driver plate tanks for maximum power amplifier grid current as indicated in the following chart. The capacitor adjustments and many surrounding objects including the 807 plate tuning capacitor, C-126, and its mounting plate are 500 volts above ground. **USE AN INSULATED SCREWDRIVER OR TUNING WAND.**

Operate the transmitter with the send-standby-calibrate switch in the calibrate position, the meter switch in the 807 grid position, and the tune-operate switch in the tune position. Remove the rear inspection plate. Adjust the multiplier stages for maximum 807 grid current as indicated in the following chart. USE AN INSULATED SCREWDRIVER OR TUNING WAND.

EXCITER TUNING CHART

BAND	FREQUENCY	COMPONENTS TO BE TUNED
160 meter	1.7 mc	L-301
	2.0	C-308
80	3.4	L-302
	4.0	C-311, C-313
40	6.8	L-303, L-304
	7.5	C-316, C-319, C-321
20	13.6	L-305
	15.0	C-324, C-328
15	20.4	L-306
10-11	27.2	L-307
	29.8	C-335

When all of the components have been tuned, make a check over each amateur hand. The 807 grid current should not show any abrupt changes or unstable conditions.

4.10 After the multipliers have been tuned for proper operation, set the meter switch to the PA grid position. Remove the two inspection plates on the side of the rf unit, figure 6-4, and adjust the driver plate tanks for maximum power amplifier grid current as indicated in the following chart. The capacitor adjustments and many surrounding objects including the 807 plate tuning capacitor, C-126, and its mounting plate are 500 volts above ground. USE AN INSULATED SCREWDRIVER OR TUNING WAND.

DRIVER TUNING CHART

BAND	FREQUENCY	COMPONENTS TO BE TUNED
160	1.8	L-11
	2.025	C-125
80	3.5	L-116
	4.05	C-124
40	7.0	L-115
	7.3	C-123
20	14.0	L-114
	14.4	C-122
15	21.0	L-113
	21.45	C-121
10-11	27.2	L-112

Check the power amplifier grid current across each band for abrupt changes or unstable operation. The grid current may be slightly higher at one end of the band but variations should be gradual.

4.11 TYPICAL TEST VOLTAGES

With the exception of filaments, the following voltages were measured with a vacuum tube volt meter between ground and the indicated test point on a typical KW-1. RMS filament voltages were measured with an ac voltmeter. The transmitter was operating on 28 megacycles with the plate switch off, the send stand-by calibrate switch in the calibrate position, the tune-operate switch in the tune position, and the emission switch in the AM position. Line voltage 120 volts.

Maintenance

<u>Tube</u>	<u>Pin</u>	<u>Volts</u>	<u>Tube</u>	<u>Pin</u>	<u>Volts</u>
V-301 6BA6	1 grid 1 2 grid 3 3 heater 4 heater 5 plate 6 grid 2 7 cathode	-7.6 0 6.3 ac 0 88 80 0	V-302 6AQ5	1 grid 1 2 cathode 3 heater 4 heater 5 plate 6 grid 2 7 grid 1	-21.5 0 0 6.3 ac 260 100 -21.5
<u>Tube</u>	<u>Pin</u>	<u>Volts</u>	<u>Tube</u>	<u>Pin</u>	<u>Volts</u>
V-303 6AQ5	1 grid 1 2 cathode 3 heater 4 heater 5 plate 6 grid 2 7 grid 1	-90 0 0 6.3 ac 260 100 -90	V-304 6AQ5	1 grid 1 2 cathode 3 heater 4 heater 5 plate 6 grid 2 7 grid 1	-78 0 0 6.3 ac 250 200 -78
<u>Tube</u>	<u>Pin</u>	<u>Volts</u>	<u>Tube</u>	<u>Pin</u>	<u>Volts</u>
V-305 6AQ5	1 grid 1 2 cathode 3 heater 4 heater 5 plate 6 grid 2 7 grid 1	-54 0 0 6.3 ac 260 170 -54	V-204 807	1 heater 2 grid 2 3 grid 1 4 cathode 5 heater CAP plate	6.3 ac 240 to 380 -44 0 0 540
<u>Tube</u>	<u>Pin</u>	<u>Volts</u>	<u>Tube</u>	<u>Pin</u>	<u>Volts</u>
V-101 V-102 4-250A (note 1)	1 filament 2 grid 2 3 grid 1 4 grid 2 5 filament	2.5 ac 10 -180 10 2.5 ac	V-401 12AX7 (note 2)	1 plate B 2 grid 1B 3 cathode B 4 heater 5 heater 6 plate A 7 grid 1A 8 cathode A 9 heater CT	125 +0.6 1.5 3.1 ac 3.1 ac 68 -0.4 0 3.1 ac

<u>Tube</u>	<u>Pin</u>	<u>Volts</u>	<u>Tube</u>	<u>Pin</u>	<u>Volts</u>
V-402	1 cathode	18	V-403	1 plate B	170
6AL5	2 plate	18	12AU7	2 grid 1B	0
(note 3)	3 heater	3.1 ac	(note 2)	3 cathode B	6.5
	4 heater	3.1 ac		4 heater	3.1 ac
	5 cathode	18		5 heater	3.1 ac
	6 no connection			6 plate A	165
	7 plate	18		7 grid 1A	0
				8 cathode A	6.5
				9 heater CT	3.1 ac

<u>Tube</u>	<u>Pin</u>	<u>Volts</u>	<u>Tube</u>	<u>Pin</u>	<u>Volts</u>
V-404	1 no connection		V-503	1 no connection	
V-405	2 heater	3.1 ac	V-504	2 filament	5.0 ac
6B4G	3 plate	300	(note 5)	3 no connection	
(note 4)	4 no connection			4 filament	5.0 ac
	5 grid 1	-64		SIDE	
	6 no connection		CAP	grid	-75
	7 heater	3.1 ac		TOP	
			CAP	grid	0

Switch positions: cw, send, tune, plate switch off.

<u>Tube</u>	<u>Pin</u>	<u>Key Closed</u>	<u>Key Open</u>
V-406	1 plate A	300	300
12AU7	2 grid 1A	0	135
(note 2)	3 cathode A	2.5	0
	4 heater	3.1 ac	3.1 ac
	5 heater	3.1 ac	3.1 ac
	6 plate B	300	300
	7 grid 1B	+ 7.5	-60
	8 cathode B	23.5	0
	9 heater CT	3.1 ac	3.1 ac

Note 1 - 5 volts ac between pins 1 and 5. Transformer center tap grounded

Note 2 - 6.3 volts ac between pins 4, 5 and 9. Transformer center tap grounded

Note 3 - 6.3 volts ac between pins 3 and 4. Transformer center tap grounded

Note 4 - 6.3 volts ac between pins 2 and 7. Transformer center tap grounded

Note 5 - 10 volts ac between pins 2 and 4. Transformer center tap grounded

WARNING

**OPERATION OF THIS EQUIPMENT INVOLVES THE USE OF
VOLTAGES THAT ARE DANGEROUS TO LIFE. OBSERVE
PROPER SAFETY PRECAUTIONS AT ALL TIMES.**

SECTION 5

PARTS LIST

ITEM	CIRCUIT FUNCTION	DESCRIPTION	PART NUMBER
B-101	Blower	BLOWER: blower and motor assem, direct connected, 115v AC, 50/60 cps, hp 1/250 at 1550 rpm	505 1158 002
C-001 Thru C-012	Part of 70E-14 Oscillator Unit		
C-101	PA plate loading	CAPACITOR: dual section; variable air; 30-465 mmf each section	920 3510 00
C-101A		CAPACITOR: 30-465 mmf; section of C-101	
C-101B		CAPACITOR: 30-465 mmf; section of C-101	
C-102	PA plate loading	CAPACITOR: dual section; variable air; 30-465 mmf each section	920 3510 00
C-102A		CAPACITOR: 30-465 mmf; section of C-101	
C-102B		CAPACITOR: 30-465 mmf; section of C-101	
C-103	PA plate tuning	CAPACITOR: variable; 15-200 mmf, 10,000 v peak	919 0110 00
C-104	160-80 meter PA plate padding	CAPACITOR: ceramic; 67 mmf p/m 5%, 5000 WV	913 0090 00
C-105	PA plate coupling	CAPACITOR: ceramic; 1000 mmf p/m 20%, 5000 WV	913 0101 00
C-106	PA neutralizing	CAPACITOR: vacuum; 4 mmf p/m 10%, 10,000 v peak	919 0114 00

ITEM	CIRCUIT FUNCTION	DESCRIPTION	PART NUMBER
C-107	V-204 plate bypass	CAPACITOR: ceramic; 470 mmf p/m 20%, 5000 WV	913 0605 00
C-108	V-101 screen bypass	CAPACITOR: ceramic; 1000 mmf p/m 20%, 5000 WV	913 0101 00
C-109	V-102 screen bypass	CAPACITOR: ceramic; 1000 mmf p/m 20%, 5000 WV	913 0101 00
C-110	PA filament bypass	CAPACITOR: ceramic; 1000 mmf p/m 20%, 5000 WV	913 0101 00
C-111	PA filament bypass	CAPACITOR: ceramic; 1000 mmf p/m 20%, 5000 WV	913 0101 00
C-112	PA filament bypass	CAPACITOR: ceramic; 1000 mmf p/m 20%, 5000 WV	913 0101 00
C-113	PA filament bypass	CAPACITOR: ceramic; 1000 mmf p/m 20%, 5000 WV	913 0101 00
C-114	PA grid coupling	CAPACITOR: mica; 150 mmf p/m 20%, 2500 WV	936 0195 00
C-115	80 meter V-204 plate padding	CAPACITOR: mica; 68 mmf p/m 20%, 500 WV	935 0100 00
C-116	HV line bypass	CAPACITOR: ceramic; 1000 mmf p/m 20%, 5000 WV	913 0101 00
C-117	HV line TVI filter bypass	CAPACITOR: ceramic; 1000 mmf p/m 20%, 5000 WV	913 0101 00
C-118	HV line TVI filter bypass	CAPACITOR: ceramic; 1000 mmf p/m 20%, 5000 WV	913 0101 00
C-119	V-204 plate bypass	CAPACITOR: ceramic; 470 mmf p/m 20%, 5000 WV	913 0605 00
C-120		Not Used	
C-121	V-204 15 meter plate padding	CAPACITOR: variable air; 5-50 mmf	922 4300 00

ITEM	CIRCUIT FUNCTION	DESCRIPTION	PART NUMBER
C-122	V-204 20 meter plate padding	CAPACITOR: variable air; 5-50 mmf	922 4300 00
C-123	V-204 40 meter plate padding	CAPACITOR: variable air; 5-50 mmf	922 4300 00
C-124	V-204 80 meter plate padding	CAPACITOR: variable air; 5-50 mmf	922 4300 00
C-125	V-204 160 meter plate padding	CAPACITOR: variable air; 5-50 mmf	922 4300 00
C-126	See C-126A and C-126B	CAPACITOR: dual section; variable; 6-100 mmf each section	922 0139 00
C-126A	V-204 80-160 meter padding	CAPACITOR: 6-100 mmf; section of C-126	
C-126B	V-204 plate tuning	CAPACITOR: 6-100 mmf; section of C-126	
C-127	V-204 160 meter plate padding	CAPACITOR: mica; 68 mmf p/m 20%, 500 WV	935 0100 00
C-128	PA bias bypass	CAPACITOR: mica; 3300 mmf p/m 20%, 500 WV	935 4075 00
C-129	M-103 bypass	CAPACITOR: mica; 2200 mmf p/m 20%, 1200 WV	936 0272 00
C-130	M-104 bypass	CAPACITOR: mica; 2200 mmf p/m 20%, 1200 WV	936 0272 00
C-201	VR tube bypass	CAPACITOR: ceramic; 10,000 mmf, 350 WV	913 0566 00
C-202	Exciter plate voltage bypass	CAPACITOR: paper; .1 mf p/m 10%, 600 WV	931 7420 00
C-203	Exciter plate voltage bypass	CAPACITOR: electrolytic; 5 mf minus 15% plus 50%; 450 WV	183 1050 00
C-204	M-102 TVI filter	CAPACITOR: paper; 0.001 mf plus 30% minus 10%; 1000 WV	241 0011 00

ITEM	CIRCUIT FUNCTION	DESCRIPTION	PART NUMBER
C-205	M-102 TVI filter	CAPACITOR: paper; 0.001 mf plus 30% minus 10%; 1000 WV	241 0011 00
C-206	V-204 coupling	CAPACITOR: mica; 470 mmf p/m 20%; 500 WV	935 0135 00
C-207	V-204 grid bypass	CAPACITOR: ceramic; .01 mf; 350 WV	913 0566 00
C-208	V-204 screen bypass	CAPACITOR: mica; 3300 mmf p/m 20%; 500 WV	935 4075 00
C-209	TVI filter	CAPACITOR: paper; 0.1 mf plus 20% minus 10% 600 WV	241 0006 00
C-210	TVI filter	CAPACITOR: paper; 0.1 mf plus 20% minus 10% 600 WV	241 0006 00
C-211	TVI filter	CAPACITOR: paper; 0.1 mf plus 20% minus 10% 600 WV	241 0006 00
C-212	TVI filter	CAPACITOR: paper; 0.1 mf plus 20% minus 10% 600 WV	241 0006 00
C-213	TVI filter	CAPACITOR: paper; 0.1 mf plus 20% minus 10% 600 WV	241 0006 00
C-214	TVI filter	CAPACITOR: paper; 0.1 mf plus 20% minus 10% 600 WV	241 0006 00
C-215	TVI filter	CAPACITOR: paper; 0.1 mf plus 20% minus 10% 600 WV	241 0006 00
C-216	TVI filter	CAPACITOR: paper; 0.1 mf plus 20% minus 10% 600 WV	241 0006 00
C-217	TVI filter	CAPACITOR: paper; 0.1 mf plus 20% minus 10% 600 WV	241 0006 00
C-218		Not Used	
C-219		Not Used	

ITEM	CIRCUIT FUNCTION	DESCRIPTION	PART NUMBER
C-220, C-221, C-222		Not Used	
C-223	Current Voltage meter bypass	CAPACITOR: electrolytic; 25 mf minus 10% plus 100%, 25W	183 1034 00
C-224, C-225, C-226, C-227		Not Used	
C-228	CW wave shaping	CAPACITOR: Paper; 0.1 mf p/m 10%, 600 WV	931 7420 00
C-229	TVI filter	CAPACITOR: Paper; 0.001 mf	241 0011 00
C-301	V-301 grid bypass	CAPACITOR: ceramic; .01 mf; 350 WV	913 0566 00
C-302	V-301 screen by-pass	CAPACITOR: ceramic; .01 mf; 350 WV	913 0566 00
C-303	V-302 grid coupling	CAPACITOR: mica; 470 mmf; p/m 20%; 500 WV	935 0135 00
C-304	V-302 grid de-coupling	CAPACITOR: ceramic; .01 mf; 350 WV	913 5066 00
C-305		Not Used	
C-306	V-302 160m plate padding	CAPACITOR: mica; 120 mmf; p/m 5%; 500 WV	935 0109 00
C-307	V-302 screen by-pass	CAPACITOR: ceramic; .01 mf; 350 WV	913 0566 00
C-308	V-302 160 meter plate padding	CAPACITOR: variable; 8-50 mmf; 350 WV	917 1038 00
C-309	V-302 160 meter plate padding	CAPACITOR: mica; 510 mmf; p/m 5%; 500 WV	935 0136 00
C-310	V-302 plate padding	CAPACITOR: mica; 120 mmf; p/m 5%; 500 WV	935 0109 00
C-311	V-302 plate padding	CAPACITOR: variable; 8-50, mmf; 350 WV	917 1038 00

ITEM	CIRCUIT FUNCTION	DESCRIPTION	PART NUMBER
C-312	V-302 plate bypass	CAPACITOR: ceramic; .01 mf; 350 WV	913 0566 00
C-313	V-303 grid padding	CAPACITOR: variable; 8-50 mmf; 350 WV	917 1038 00
C-314	V-303 grid padding	CAPACITOR: 120 mmf mica; p/m 5%; 500 WV	935 0109 00
C-315	V-303 grid coupling	CAPACITOR: mica; 470 mmf p/m 20%; 500 WV	935 0135 00
C-316	V-303 grid equalizing	CAPACITOR: variable; 3-12 mmf; 350 WV	917 1035 00
C-317	V-304 screen bypass	CAPACITOR: ceramic; .01 mf; 350 WV	913 0566 00
C-318	V-303 plate padding	CAPACITOR: mica; 120 mmf p/m 5%; 500 WV	935 0109 00
C-319	V-303 plate padding	CAPACITOR: variable; 8-50 mmf; 350 WV	917 1038 00
C-320	V-303 plate bypass	CAPACITOR: ceramic; .01 mf; 350 WV	913 0566 00
C-321	V-304 grid padding	CAPACITOR: variable; 8-50 mmf; 350 WV	917 1038 00
C-322	V-304 grid padding	CAPACITOR: mica; 120 mmf p/m 5%; 500 WV	935 0109 00
C-323	S-301G bypass	CAPACITOR: ceramic; .01 mf; 350 WV	913 0566 00
C-324	V-305 grid equalizing	CAPACITOR: variable; 3-12 mmf; 350 WV	917 1035 00
C-325	V-305 grid coupling	CAPACITOR: mica; 470 mmf; p/m 20%; 500 WV	935 0135 00
C-326	Exciter bias decoupling	CAPACITOR: ceramic; .01 mf; 350 WV	913 0566 00
C-327	V-304 screen bypass	CAPACITOR: ceramic; .01 mf; 350 WV	913 0566 00

ITEM	CIRCUIT FUNCTION	DESCRIPTION	PART NUMBER
C-328	V-304 plate padding	CAPACITOR: variable; 8-50 mmf; 350 WV	917 1038 00
C-329	V-304 plate padding	CAPACITOR: mica 220 mmf p/m 5% 500 WV	935 0119 00
C-330	V-304 plate padding	CAPACITOR: ceramic; 47 mmf; 500 WV	916 4453 00
C-331	V-304 plate bypass	CAPACITOR: ceramic; 10,000 mmf 350 WV	913 0566 00
C-332	V-303 grid decoupling	CAPACITOR: ceramic; .01 mf; 350 WV	913 0566 00
C-333	V-204 grid padding	CAPACITOR: ceramic; 39 mmf; 500 WV	916 4463 00
C-334	V-305 grid coupling	CAPACITOR: mica; 470 mmf p/m 20%; 500 WV	935 0135 00
C-335	V-305 grid equalizing	CAPACITOR: variable; 3-12 mmf; 350 WV	917 1035 00
C-336	V-305 screen bypass	CAPACITOR: ceramic; .01 mf; 350 WV	913 0566 00
C-337		Not Used	
C-338	V-305 plate bypass	CAPACITOR: ceramic; .01 mf; 350 WV	913 0566 00
C-339	V-304 plate padding	CAPACITOR: mica; 150 mmf p/m 5%; 500 WV	935 0112 00
C-340	V-204 15 meter grid coupling	CAPACITOR: ceramic; .01 mf; 350 WV	913 0566 00
C-401	V-401A grid coupling capacitor	CAPACITOR: mica; .01 mf p/m 10%; 300 WV	935 2117 00
C-402	V-401A grid bypass	CAPACITOR: mica; 47 mmf p/m 20%; 500 WV	935 0093 00

ITEM	CIRCUIT FUNCTION	DESCRIPTION	PART NUMBER
C-403	Push-to-talk bypass	CAPACITOR: paper; 0.5 mf plus 40% minus 15% 600 WV	961 4314 00
C-404	See V-404A, V-404B, V-404C	CAPACITOR: electrolytic; 3 section, 20 mf each section, minus 15% plus 100%; 300 WV	183 1004 00
C-404A	V-401A plate decoupling	CAPACITOR: electrolytic; 20 mf; section of C-404	
C-404B	V-401B plate decoupling	CAPACITOR: electrolytic; 20 mf; section of C-404	
C-404C	V-403 plate decoupling	CAPACITOR: electrolytic; 20 mf; section of C-404	
C-405	V-401B cathode bypass	CAPACITOR: electrolytic 25 mf minus 10% plus 100% 25 WV	183 1034 00
C-406	V-401B grid coupling	CAPACITOR: mica; .01 mf p/m 10%; 300 WV	935 2117 00
C-407	V-402 cathode coupling	CAPACITOR: paper; 0.1 mf p/m 10%; 600 WV	931 7420 00
C-408	Low level filter coupling	CAPACITOR: mica; .01 mf p/m 10%; 300 WV	935 2117 00
C-409	Low level audio filter	CAPACITOR: mica; 1000 mmf p/m 10%, 500 WV	935 4053 00
C-410	Low level audio filter	CAPACITOR: mica; 820 mmf p/m 10%, 500 WV	935 4050 00
C-411	V-403B grid coupling	CAPACITOR: mica; .01 mf p/m 10%; 300 WV	935 2117 00
C-412	V-404 grid coupling	CAPACITOR: paper; 0.1 mf p/m 10%; 600 WV	931 7420 00
C-413	V-405 grid coupling	CAPACITOR: paper; 0.1 mf p/m 10%; 600 WV	931 7420 00

ITEM	CIRCUIT FUNCTION	DESCRIPTION	PART NUMBER
C-414	-150V supply filter	CAPACITOR: electrolytic; 20 mf minus 10% plus 50%; 250 WV	183 1047 00
C-415	See C-415A and C-415B	CAPACITOR: dual section; 40 mf each section; 450 WV	183 1009 00
C-415A	Filter, plus 300 volt	CAPACITOR: electrolytic; 40 mf; section of C-415	
C-415B	Filter, plus 300 volt	CAPACITOR: electrolytic; 40 mf; section of C-415	
C-416	500V supply filter	CAPACITOR: paper; 10 mf p/m 20%; 1000 WV	930 0039 00
C-417	Driver transformer center tap bypass	CAPACITOR: electrolytic; 10 mf minus 15% plus 50%; 250 WV	183 1046 00
C-418	V-406A grid tank	CAPACITOR: paper; 0.1 mf p/m 10%; 600 WV	931 7420 00
C-419	V-406 grid coupling	CAPACITOR: mica; .01 mf p/m 10%; 300 WV	935 2117 00
C-420	Sidetone output coupling	CAPACITOR: paper; 0.1 mf p/m 10%; 600 WV	931 7420 00
C-421	V-401B grid bypass	CAPACITOR: mica; 47 mmf p/m 20%; 1200 WV	935 0093 00
C-501	2500 V supply filter	CAPACITOR: paper; 2 mf p/m 20%; 3000 WV	930 4240 00
C-502	2500 V supply filter	CAPACITOR: paper 4 mf p/m 10%; 3000 WV	930 4340 00
C-503	High level audio filter	CAPACITOR: plasticon; .006 mf p/m 10%; 10,000 WV	933 0063 00
C-504	High level audio filter	CAPACITOR: plasticon; .006 mf p/m 10%; 10,000 WV	933 0063 00

ITEM	CIRCUIT FUNCTION	DESCRIPTION	PART NUMBER
C-505	2500 V supply resonant choke tuning	CAPACITOR: paper; 0.15 mf p/m 20%; 5,000 WV	930 0036 00
E-101	PA output connector	CONNECTOR: receptacle; single female contact	357 9003 00
E-102	2500 V line connector	FEEDTHRU	
E-103	2500 V line connector	FEEDTHRU	
E-104	V-101 screen parasitic suppressor	SUPPRESSOR: parasitic; three turns #18 AWG wire wnd on 47 ohm 2 w resistor	505 2262 002
E-105	V-102 screen parasitic suppressor	SUPPRESSOR: parasitic; three turns #18 AWG wire wnd on 47 ohm 2 w resistor	505 2262 002
E-106	V-204 plate parasitic suppressor	SUPPRESSOR: 807 plate, 100 ohm 2 w resistor with 6 turns #18 AWG wire	505 1181 002
E-107	Receiver antenna terminal	CONNECTOR: receptacle; single round female contact	357 9003 00
E-108	Transmitting antenna terminal	CONNECTOR: receptacle; single round female contact	357 9003 00
E-109	Antenna relay terminal	CONNECTOR: receptacle; single round female contact	357 9003 00
E-110	RF unit top terminal strip	TERMINAL STRIP: 5 term	367 0103 00
E-111	C-104 parasitic suppressor	SUPPRESSOR: parasitic; six turns #18 AWG wire wnd on 100 ohm 2 w resistor	505 2263 002

ITEM	CIRCUIT FUNCTION	DESCRIPTION	PART NUMBER
E-112	C-126A parasitic suppressor	SUPPRESSOR: parasitic; six turns #18 AWG wire wnd on 100 ohm 2 w resistor	505 2263 002
E-201	RF unit terminal strip	TERMINAL STRIP: 6 term	367 0014 00
E-202	RF unit terminal strip	TERMINAL STRIP: 6 term	367 0014 00
E-401	Audio chassis terminal strip	TERMINAL STRIP: 11 term	367 0042 00
E-402	Audio chassis terminal strip	TERMINAL STRIP: 11 term	367 0042 00
E-403	Audio chassis terminal strip	TERMINAL STRIP: 11 term	367 0042 00
E-501	Modulator tube chassis terminal strip	TERMINAL STRIP: 6 term	367 0037 00
F-401	Bias supply fuse	FUSE: cartridge; 1 amp. 250 v.	264 4050 00
F-402	300 v supply fuse	FUSE: cartridge; 3 amp. 250 v.	264 4080 00
F-403	500 v supply fuse	FUSE: cartridge; 2 amp. 250 v.	264 4070 00
F-404	Auto transformer fuse	FUSE: cartridge; 5 amp. 250 v.	264 4090 00
F-405	Line fuse	FUSE: screw plug, 15 amp. 125 v.	264 1150 00
F-406	Line fuse	FUSE: screw plug, 15 amp. 125 v.	264 1150 00
F-501	872A filament fuse	FUSE: cartridge; 2 amp. 250 v.	264 4070 00

ITEM	CIRCUIT FUNCTION	DESCRIPTION	PART NUMBER
F-502	810 filament fuse	FUSE: cartridge; 2 amp. 250 v.	264 4070 00
I-201	Dial Light	BULB: bayonet base; 6.3 v. 0.15 amp. T-3-1/4 bulb	262 3240 00
I-202	Dial Light	BULB: bayonet base; 6.3 v. 0.15 amp. T-3-1/4 bulb	262 3240 00
I-203	Dial Light	BULB: bayonet base; 6.3 v. 0.15 amp. T-3-1/4 bulb	262 3240 00
I-401	Filament pilot light	BULB: candelabra base; 125 v. .040 amp.	262 3320 00
I-402	Plate pilot light	BULB: candelabra base; 125 v. .040 amp.	262 3320 00
J-201	Exciter chassis cable connector	SOCKET: tube; octal	220 1850 00
J-202	Blower cable socket	CONNECTOR: receptacle; 2 female contacts	368 4500 00
J-401	Mic and push-to-talk plug	CONNECTOR: receptacle; 2 female contacts	369 1004 00
J-402	Phone patch connector	CONNECTOR: receptacle; 2 female contacts	369 1004 00
K-101	Antenna relay	RELAY: antenna; 2 pole, double throw, contact rating 2000 v. at 5 amp.	407 1045 00
K-401	Overload relay	RELAY: overload; double pole single throw contact rating 10 amp.	403 0003 00
K-402	Plate contactor	RELAY: power; contact rating 15 amp non-induc- tive at 115 V-AC	401 1194 00
K-403	Send-receive relay	RELAY: armature; contact arrangement right 2A, left 1B, 1C, 150 coil v.	970 1661 00

ITEM	CIRCUIT FUNCTION	DESCRIPTION	PART NUMBER
K-501	Phone-CW relay	RELAY: 2 pole; double throw, cont rating 2000 v. at 5 amp.	407 1045 00
L-001 Thru L-005	Part of 70E-14 Oscillator Unit		
L-101	PA plate circuit choke	COIL, RF: choke; 169 turns of #27 chrome oxide wire	504 3667 003
L-102	PA grid circuit choke	COIL, RF: choke; 2.5 mh 4 pie, duo-lateral wnd.	240 5300 00
L-103	V-204 plate circuit choke	COIL, RF: choke; 2.5 mh 4 pie, duo-lateral wnd.	240 5300 00
L-104	HV TVI filter	COIL, RF: choke; 15 turns #18 AWG tinned copper wire	505 1173 002
L-105	10 meter PA coil	COIL, RF: 5 turns soft copper tubing	505 1226 002
L-106	15-20 meter PA coil	COIL, RF: 7-3/4 turns soft copper tubing	505 1228 002
L-107	40-80 meter PA coil	COIL, RF: 2 pie, 1 with 6 turns, 1 with 11 turns #10 AWG wire	505 1084 002
L-108	160 meter PA coil	COIL, RF: 38 turns #14 AWG wire	505 1085 002
L-109	10-15 meter PA coil	COIL, RF: 6 turns soft copper tubing	505 1230 002
L-110	20-160 meter PA coil	COIL, RF: 19 turns #10 AWG wire tapped at 8th turn 13th & 17th turn	505 1182 002
L-111	V-204 160 meter plate coil	COIL, RF: 52 turns #28 AWG wire	505 1072 002

ITEM	CIRCUIT FUNCTION	DESCRIPTION	PART NUMBER
L-112	V-204 10 meter plate coil	COIL, RF: 3 turns #16 AWG wire	505 1068 002
L-113	V-204 15 meter plate coil	COIL, RF: 5 turns #16 AWG wire	505 1069 002
L-114	V-204 20 meter plate coil	COIL, RF: 9 turns #16 AWG wire	505 1070 002
L-115	V-204 40 meter plate coil	COIL, RF: 19 turns #18 AWG wire	505 1180 002
L-116	V-204 80 meter plate coil	COIL, RF: 25 turns #26 AWG wire	505 1071 002
L-117	Antenna static drain choke	COIL, RF: choke; 169 turns #27 chrome oxide wire	504 3667 003
L-118	M-103 filter	COIL, RF: choke; 5 section duo-lateral wnd 3.5 mh	240 2700 00
L-201	PA screen audio choke	REACTOR: filter; 12 hy, 150 ohms nominal	678 0408 00
L-202	V-204 grid RFC	COIL, RF: choke; 2.5 mh 4 pie, duo-lateral wnd.	240 5300 00
L-301	V-302 plate coil	COIL, RF: 38 turns #28 AWG wire	505 1113 002
L-302	V-303 grid coil	COIL, RF: 38 turns #28 AWG wire	505 1113 002
L-303	V-303 plate coil	COIL, RF: 173 turns #28 AWG wire	505 1111 002
L-304	V-304 grid coil	COIL, RF: 17.3 turns #28 AWG wire	505 1111 002
L-305	V-304 plate coil	COIL, RF: 7.6 turns #26 AWG wire	505 1109 002
L-306	V-204 15 meter grid coil	COIL, RF: 7.6 turns #26 AWG wire	505 1109 002

ITEM	CIRCUIT FUNCTION	DESCRIPTION	PART NUMBER
L-307	V-305 plate coil	COIL, RF: 7.6 turns #26 AWG wire	505 1109 002
L-401	Low level, low pass filter audio reactor	REACTOR: audio filter; 3.75 hy	678 0077 00
L-402	Bias supply filter	REACTOR: filter; 12 hy 150 ohm nominal	678 0408 00
L-403	300 volt supply filter	REACTOR: filter; 12 hy	668 0065 00
L-404	500 volt supply filter	REACTOR: filter; 12 hy	668 0065 00
L-405	Side tone osc. coil	REACTOR: audio oscillator 0.25 hy p/m 5%	678 0011 00
L-501	2500 volt supply filter	REACTOR: filter; 6 hy 700 ma 10,000 v.	678 0418 00
L-502	2500 volt supply filter	REACTOR: filter; 6 hy 700 ma 10,000 v.	678 0418 00
L-503	High level low pass filter audio reactor	REACTOR: audio; splatter choke 0.02 to 1.5 hy 10,000 v.	678 0421 00
M-101	Filament voltage meter, measures voltage across primary of filament transformer	METER: AC voltmeter; 0-150 v. AC	452 3150 00
M-102	Current-voltage meter, measures the circuit indicated by meter switch S-201	METER: milliammeter; 0-1 ma 3 scale 100 ohm p/m 10%	458 0197 00
M-103	PA plate current meter	METER: 0-800 ma DC	450 3800 50

Section 5

ITEM	CIRCUIT FUNCTION	DESCRIPTION	PART NUMBER
M-104	PA plate voltage meter	METER: DC voltmeter 0-3 kv DC	458 0243 50
M-105	Mod. cathode current meter	METER: 0-500 ma DC	450 3500 00
M-106	Antenna current meter	METER: AC; thermoameter, 0-10 amp. RF	451 3105 00
P-101	Cable connector between PA and exciter chassis	CONNECTOR: receptacle; octal	369 1009 00
P-201	Blower plug	CONNECTOR: plug; 2 prong male cable connector	368 0024 00
R-001 thru R-007	Part of 70E-14 Oscillator unit		
R-101	PA grid resistor	RESISTOR: wire wound; 2500 ohm p/m 10%; 10 w	710 0030 00
R-102	R-102 Screen resistor	RESISTOR: wire wound; 1500 ohm p/m 10%; 50 w	410 0093 00
R-103		Not Used	
R-104	M-104 meter multiplier	RESISTOR: external meter, 3 megohm 3 kv	732 0014 00
R-201	PA screen choke shunt for CW operation	RESISTOR: 47 ohm p/m 10%; 2 w	745 5030 00
R-202	V-204, V-302 bias network	RESISTOR: 10,000 ohm p/m 10%; 1 w	745 3128 00
R-203	V-203 bias voltage divider	RESISTOR: 10 megohm p/m 10%; 1/2 w	745 1170 00
R-204		Not Used	

ITEM	CIRCUIT FUNCTION	DESCRIPTION	PART NUMBER
R-205, R-206		Not used	
R-207	V-202, V-203 volt- age dropping	RESISTOR: 6800 ohm p/m 10%; 2 w	745 5121 00
R-208	V-202, V-203 volt- age dropping	RESISTOR: 6800 ohm p/m 10%; 2 w	745 5121 00
R-209		Not used	
R-210		Not used	
R-211	Exciter voltage dropping	RESISTOR: wire wound; 500 ohm p/m 10%; 10 w	710 1500 20
R-212	V-204 bias voltage dividing network	RESISTOR: 33,000 ohm p/m 10%; 2 w	745 5149 00
R-213		Not used	
R-214	Meter shunt, PA grid position	RESISTOR: wire wound; 2 ohm p/m 5%; 1/2 w	707 0068 00
R-215	Meter shunt, 807 plate position	RESISTOR: wire wound; 1 ohm p/m 5%; 1/2 w	707 0047 00
R-216	Meter multiplier, 500 volt position	RESISTOR: 1 megohm p/m 5%; 1 w	745 3211 00
R-217	Meter multiplier, 300 volt position	RESISTOR: 1 megohm p/m 5%; 1/2 w	745 1211 00
R-218	Meter shunt, 807 grid position	RESISTOR: 25 ohm p/m 5%; 1/2 w	701 0001 00
R-219	PA screen voltage divider, tune position	RESISTOR: wire wound; 5000 ohm p/m 10%; 25 w	710 3542 00
R-220	PA screen voltage divider, tune position	RESISTOR: wire wound 20,000 ohm p/m 10%; 25 w	710 3204 20

ITEM	CIRCUIT FUNCTION	DESCRIPTION	PART NUMBER
R-221	V-303, V-304, V-305 bias voltage divider	RESISTOR: 3300 ohm p/m 10%; 1/2 w	745 1107 00
R-222	V-303, V-304, V-305 bias voltage divider	RESISTOR: 33,000 p/m 10%; 1/2 w	745 1149 00
R-223	V-204 screen parasitic suppressor	RESISTOR: 47 ohm p/m 10%; 1 w	745 3030 00
R-224	V-204 screen voltage divider	RESISTOR: wire wound 15,000 ohm p/m 10%; 10 w	710 1154 20
R-225	V-204 screen voltage divider	RESISTOR: wire wound 20,000 ohm p/m 20%; 10 w	710 1204 20
R-226	V-204 screen voltage control, controls excitation to PA tubes	RESISTOR: variable; 25,000 ohm; 4 w	377 2280 00
R-227	V-204 screen voltage divider	RESISTOR: 39,000 ohm p/m 10%; 2 w	745 5153 00
R-228	V-204 grid suppressor	RESISTOR: 12 ohm p/m 10%; 1 w	745 3006 00
R-229	V-204 80 meter screen voltage divider	RESISTOR: 27,000 ohm p/m 10%; 2 w	745 5146 00
R-230	V-204 40 meter screen voltage divider	RESISTOR: 47,000 ohm p/m 10%; 2 w	745 5156 00
R-231	V-204 20 meter screen voltage divider	RESISTOR: 82,000 ohm p/m 10%; 2 w	745 5167 00
R-232	Meter multiplier, 300 v position	RESISTOR: 1 megohm p/m 5%; 1/2 w	745 1211 00
R-233		Not Used	
R-234	V-204 grid	RESISTOR: 15,000 ohms p/m 10%; 1 w	745 3135 00
R-235	Keying	RESISTOR: 220,000 ohms p/m 10%; 1/2 w	745 1184 00
R-236	Bias divider	RESISTOR: 10,000 ohms p/m 10%; 1 w	745 3128 00

ITEM	CIRCUIT FUNCTION	DESCRIPTION	PART NUMBER
R-237	Bias divider	RESISTOR: 10,000 ohms p/m 100%; 1 w	745 3128 00
R-301	V-301 grid	RESISTOR: 47,000 ohm p/m 10%; 1/2 w	745 1156 00
R-302	V-302 bias voltage	RESISTOR: .10 megohm p/m 10%; 1/2 w	745 1170 00
R-303	V-301 screen	RESISTOR: 56,000 ohm p/m 10%; 1 w	745 3160 00
R-304	V-301 plate	RESISTOR: 47,000 ohm p/m 10%; 1 w	745 3156 00
R-305		Not Used	
R-306		Not Used	
R-307	V-204, V-302 bias	RESISTOR: 0.15 megohm p/m 10%; 1/2 w	745 1177 00
R-308		Not Used	
R-309		Not Used	
R-310	V-304 grid	RESISTOR: 0.10 megohm p/m 10%; 1/2 w	745 1170 00
R-311	V-302 screen	RESISTOR: .33 megohm p/m 10%; 1 w	745 3191 00
R-312	V-302 plate	RESISTOR: 1000 ohm p/m 10%; 1 w	745 3086 00
R-313	V-303 grid	RESISTOR: 82,000 ohm p/m 10%; 1/2 w	745 1167 00
R-314	V-303 grid	RESISTOR: 18,000 ohm p/m 10%; 1/2 w	745 1139 00
R-315	V-303 screen	RESISTOR: .22 megohm p/m 10%; 1 w	745 3174 00
R-316	V-303 plate	RESISTOR: 1000 ohm p/m 10%; 1 w	745 3086 00
R-317	V-304 grid	RESISTOR: .10 megohm p/m 10%; 1/2 w	745 1170 00

ITEM	CIRCUIT FUNCTION	DESCRIPTION	PART NUMBER
R-318	V-304 screen	RESISTOR: .22 megohm p/m 10%; 1 w	745 3142 00
R-319	V-304 plate	RESISTOR: 1000 ohm p/m 10%; 1 w	745 3086 00
R-320	V-305 grid	RESISTOR: .10 megohm p/m 10%; 1/2 w	745 1170 00
R-321		Not used	
R-322	V-305 screen	RESISTOR: .15 megohm p/m 10%; 1 w	745 3153 00
R-323	V-305 plate	RESISTOR: 1000 ohm p/m 10%; 1 w	745 3086 00
R-324		Not used	
R-325		Not used	
R-326	V-303 grid sup- pressor	RESISTOR: 22 ohm p/m 10%; 1 w	745 3016 00
R-401	V-401A grid	RESISTOR: 1 megohm p/m 10%; 1/2 w	745 1212 00
R-402	V-401A plate de- coupling	RESISTOR: 47,000 ohm p/m 10%; 1/2 w	745 1156 00
R-403	V-401A plate	RESISTOR: .47 megohm p/m 10%; 1/2 w	745 1198 00
R-404	Audio gain control	RESISTOR: variable; .50 meg- ohm; 1/2 w	376 3027 00
R-405	V-401B cathode	RESISTOR: 1500 ohm p/m 10%; 1/2 w	745 1093 00
R-406	V-401B plate de- coupling	RESISTOR: 47,000 ohm p/m 10%; 1/2 w	745 1156 00

ITEM	CIRCUIT FUNCTION	DESCRIPTION	PART NUMBER
R-407	V-401B plate	RESISTOR: .10 megohm p/m 10%; 1/2 w	745 1170 00
R-408	V-402 input	RESISTOR: .22 megohm p/m 10%; 1/2 w	745 1184 00
R-409	V-402 plate	RESISTOR: .33 megohm p/m 10%; 1/2 w	745 1191 00
R-410	Speech clipping level	RESISTOR: variable; .10 megohm; 1 w. min	376 0057 00
R-411	V-402 output	RESISTOR: .22 megohm p/m 10%; 1/2 w	745 1184 00
R-412	V-403A grid	RESISTOR: .10 megohm p/m 10%; 1/2 w	745 1170 00
R-413	V-403B grid	RESISTOR: .10 megohm p/m 10%; 1/2 w	745 1170 00
R-414	V-403B grid coupling	RESISTOR: 1.2 megohm p/m 10%; 1/2 w	745 1216 00
R-415	V-403 cathode	RESISTOR: 1200 ohm p/m 10%; 1/2 w	745 1090 00
R-416	V-403B plate	RESISTOR: 47,000 ohm p/m 10%; 1/2 w	745 1156 00
R-417	V-403A plate	RESISTOR: 47,000 ohm p/m 10%; 1/2 w	745 1156 00
R-418	V-405 grid	RESISTOR: .10 megohm p/m 10%; 1/2 w	745 1170 00
R-419	V-404 grid	RESISTOR: .10 megohm p/m 10%; 1/2 w	745 1170 00
R-420	V-406A grid	RESISTOR: .10 megohm p/m 10%; 1/2 w	745 1170 00
R-421	V-406B cathode	RESISTOR: 4700 ohm p/m 10%; 1/2 w	745 1114 00

ITEM	CIRCUIT FUNCTION	DESCRIPTION	PART NUMBER
R-422	V-406B grid	RESISTOR: 1 megohm p/m 10%; 1/2 w	745 1212 00
R-423	V-406 feedback	RESISTOR: 10,000 ohm p/m 10%; 1/2 w	745 1128 00
R-424	V-406 feedback	RESISTOR: 1 megohm p/m 10%; 1/2 w	745 1212 00
R-425	V-406 plate	RESISTOR: .18 megohm p/m 10%; 1/2 w	745 1181 00
R-426	Bias supply voltage divider	RESISTOR: ww; 500 ohm p/m 10%; 25 w	710 3500 20
R-427	Bias supply voltage divider	RESISTOR: variable; 100 ohm; 4 w	377 0036 00
R-428	Bias supply voltage divider	RESISTOR: variable; 100 ohm; 4 w	377 0036 00
R-429	Bias supply voltage divider	RESISTOR: wire wound 350 ohm; 25 w	710 3350 20
R-430	Voltage dropping resistor, low power audio stages	RESISTOR: 1800 ohm p/m 10%; 2 w	745 5097 00
R-431	300 volt supply bleeder	RESISTOR: .10 megohm p/m 10%; 2 w	745 5170 00
R-432	500 volt supply bleeder	RESISTOR: wire wound 25,000 ohm p/m 10%	710 3254 20
R-433	Mic input decoupling	RESISTOR: 4700 ohm p/m 10%; 1/2 w	745 1114 00
R-434	V-401B grid decoupling	RESISTOR: 220,000 ohm p/m 10%; 1/2 w	745 1184 00
R-435	Phone patch decoupling	RESISTOR: 470,000 ohm p/m 10%; 1/2 w	745 1198 00

ITEM	CIRCUIT FUNCTION	DESCRIPTION	PART NUMBER
R-436	Phone patch load	RESISTOR: 680 ohm p/m 10%; 1/2 w	745 1079 00
R-437	V-204, V-302 bias network	RESISTOR: 10,000 ohm p/m 10%; 1 w	745 3128 00
R-501	2500 volt supply bleeder	RESISTOR: wire wound; 25,000 ohm p/m 10%; 160 w	710 6254 20
R-502	2500 volt supply bleeder	RESISTOR: wire wound; 25,000 ohm p/m 10%; 160 w	710 6254 20
S-101	See S-101A, S-101B, S-101C	SWITCH: rotary; 2 circuit, 6 position	259 0444 00
S-101A	PA bandswitch	SWITCH: rotary; 2 circuit, 6 position; section of S-101	
S-101B	PA bandswitch	SWITCH: rotary; 2 circuit, 6 position; section of S-101	
S-101C	PA bandswitch	SWITCH: rotary; 2 circuit, 6 position; section of S-101	
S-102	See S-102A, S-102B	SWITCH: rotary; 2 circuit, 6 position	259 0445 00
S-102A	Bandswitch, V-204	SWITCH: rotary; 2 circuit, 6 position; section of S-102	
S-102B	Bandswitch, V-204	SWITCH: rotary; 2 circuit, 6 position; section of S-102	
S-103	Door interlock, front top panel	SWITCH: interlock; 2 male cont. SWITCH: interlock; 2 female cont.	260 4040 00 260 4050 00
S-201	See S-201A, S-201B	SWITCH: rotary; 2 circuit, 5 pos. non-shorting	259 0045 00
S-201A	Current-voltage meter switch	SWITCH: rotary; 2 circuit, 5 pos. non-shorting; section of S-201	

ITEM	CIRCUIT FUNCTION	DESCRIPTION	PART NUMBER
S-201B	Current-voltage meter switch	SWITCH: rotary; 2 circuit, 5 pos. non-shorting; section of S-201	
S-202	Tune-operate switch	SWITCH: 1 circuit, 2 pos. non-shorting	259 0014 00
S-203	See S-203A, S-203B, S-203C, S-203D, S-203E	SWITCH: rotary; 5 circuit, 3 pos. shorting	259 1380 00
S-203A	CW-AM switch section	SWITCH: rotary; 5 circuit, 3 pos. shorting; section of S-203	
S-203B	CW-AM switch section	SWITCH: rotary, 5 circuit, 3 pos. shorting; section of S-203	
S-203C	CW-AM switch section	SWITCH: rotary, 5 circuit, 3 pos. shorting; section of S-203	
S-203D	CW-AM switch section	SWITCH: rotary, 5 circuit, 3 pos. shorting; section of S-203	
S-203E	CW-AM switch section	SWITCH: rotary, 5 circuit, 3 pos. shorting; section of S-203	
S-204	SEND-STANDBY-CALIBRATE switch	SWITCH: lever 150 w. 110 v	375 0031 00
S-301	Band switch ganged with S-101	SWITCH: rotary; 9 circuit, 6 pos.	259 0443 00
S-301A	Exciter bandswitch	SWITCH: rotary; 9 circuit, 6 pos.; section of S-301	
S-301B	Exciter bandswitch	SWITCH: rotary; 9 circuit, 6 pos.; section of S-301	
S-301C	Exciter bandswitch	SWITCH: rotary; 9 circuit, 6 pos.; section of S-301	
S-301D	Exciter bandswitch	SWITCH: rotary; 9 circuit, 6 pos.; section of S-301	

ITEM	CIRCUIT FUNCTION	DESCRIPTION	PART NUMBER
S-301E	Exciter bandswitch	SWITCH: rotary; 9 circuit, 6 pos.; section of S-301	
S-301F	Exciter bandswitch	SWITCH: rotary; 9 circuit, 6 pos.; section of S-301	
S-301G	Selects drive for V-204 from proper exciter circuit	SWITCH: rotary; 9 circuit, 6 pos.; section of S-301	
S-301H	V-204 screen voltage selector	SWITCH: rotary; 9 circuit, 6 pos.; section of S-301	
S-401	Plate switch	SWITCH: toggle; single pole single throw	260 0529 00
S-402		Not used	
S-403	Auto transformer voltage selector switch	SWITCH: rotary; 1 circuit, 6 pos.	259 0038 00
S-404	Filament ON-OFF switch	SWITCH: DPST toggle	266 3057 00
S-405	Overload relay reset	SWITCH: toggle; SPST	266 3074 00
S-501	Front door high voltage shorting switch	BAR: door shorting	505 1194 003
S-502	Rear door high voltage shorting switch	BAR: door shorting	505 1195 003
S-601	Rear door interlock switch	SWITCH: interlock; 2 male cont. SWITCH: interlock; 2 female cont.	260 4040 00 260 4050 00
S-602	Interlock switch	SWITCH: interlock; 2 male cont. SWITCH: interlock; 2 female cont.	260 4040 00 260 4050 00

ITEM	CIRCUIT FUNCTION	DESCRIPTION	PART NUMBER
S-301E	Exciter bandswitch	SWITCH: rotary; 9 circuit, 6 pos.; section of S-301	
S-301F	Exciter bandswitch	SWITCH: rotary; 9 circuit, 6 pos.; section of S-301	
S-301G	Selects drive for V-204 from proper exciter circuit	SWITCH: rotary; 9 circuit, 6 pos.; section of S-301	
S-301H	V-204 screen voltage selector	SWITCH: rotary; 9 circuit, 6 pos.; section of S-301	
S-401	Plate switch	SWITCH: toggle; single pole single throw	260 0529 00
S-402		Not used	
S-403	Auto transformer voltage selector switch	SWITCH: rotary; 1 circuit, 6 pos.	259 0038 00
S-404	Filament ON-OFF switch	SWITCH: DPST toggle	266 3057 00
S-405	Overload relay reset	SWITCH: toggle; SPST	266 3074 00
S-501	Front door high voltage shorting switch	BAR: door shorting	505 1194 003
S-502	Rear door high voltage shorting switch	BAR: door shorting	505 1195 003
S-601	Rear door interlock switch	SWITCH: interlock; 2 male cont. SWITCH: interlock; 2 female cont.	260 4040 00 260 4050 00
S-602	Interlock switch	SWITCH: interlock; 2 male cont. SWITCH: interlock; 2 female cont.	260 4040 00 260 4050 00

ITEM	CIRCUIT FUNCTION	DESCRIPTION	PART NUMBER
T-101	PA filament transformer	TRANSFORMER: filament, pri 115 v, secd 5 v, CT, 2500 TV	662 0062 00
T-201	Filament transformer for all RF stages except PA	TRANSFORMER: filament, pri 115 v secd #1:6.3 v, 5.0 amp, secd #2:26.0 v, 0.6 amp, 1500 TV, 50/60 cps	662 0069 00
T-401	Plate and filament transformer for bias supply	TRANSFORMER: bias, pri 115 v secd #1:150 v CT, secd. #2:5.0 v, 2500 TV	662 0067 00
T-402	Plate and filament transformer for 300 volt rectifier, filament transformer for 500 volt supply and all low level audio stages	TRANSFORMER: power; 300 v. plate; pri 115 v, secd #1:800 v, CT, secd #2:5.0 v, secd #3:5.0 v, secd #4:6.3 v, 2500 TV	662 0066 00
T-403	Plate transformer for 500 volt supply	TRANSFORMER: 500 v plate; pri 115 v, secd 500 v, CT, 2500 TV	662 0059 00
T-404	Audio driver transformer	TRANSFORMER: driver; pri 5000 ohm CT, secd 2225 ohm CT, 1500 TV	667 0068 00
T-405	Autotransformer, filament voltage control	AUTOTRANSFORMER: pri 125 v, tapped at 120, 115, 110, 100, 90, 2500 TV	664 0061 00
T-501	Filament transformer, 2500 volt rectifiers	TRANSFORMER: filament; pri 115 v, secd 5 v CT, 10,000 TV	662 0063 00
T-502	Filament transformer, modulator tubes	TRANSFORMER: filament; pri 115 v, secd 10 v, CT, 2500 TV	662 0060 00
T-503	Plate transformer for 2500 volt supply	TRANSFORMER: HV plate; pri #1 & #2; 115 v, 2500 TV, secd 2900 v CT, 7500 TV	672 0416 00

ITEM	CIRCUIT FUNCTION	DESCRIPTION	PART NUMBER
T-504	Modulation transform- er	TRANSFORMER: modulation; pri 12,000 ohm, CT sec'd 6250 ohm, 10,000 TV	677 0417 00
V-001	Oscillator	TUBE: 6BA6	255 0185 00
V-002	Isolation stage	TUBE: 6BA6	255 0185 00
V-101	Power amplifier	TUBE: 4-250A	256 0089 00
V-102	Power amplifier	TUBE: 4-250A	256 0089 00
V-201	Oscillator filament regulator	TUBE: 6A10	734 0001 00
V-202	Plate voltage re- gulator for oscil- lator	TUBE: 0C3/VR105	257 0002 00
V-203	Plate voltage re- gulator for oscil- lator	TUBE: 0C3/VR105	257 0002 00
V-204	RF driver	TUBE: 807W	254 0671 00
V-301	Buffer amplifier	TUBE: 6AK6	255 0185 00
V-302	160 meter buffer, 80 meter doubler	TUBE: 6AQ5	255 0195 00
V-303	40 meter doubler	TUBE: 6AQ5	255 0195 00
V-304	20 meter doubler 15 meter tripler	TUBE: 6AQ5	255 0195 00
V-305	10 meter doubler	TUBE: 6AQ5	255 0195 00
V-401	Audio amplifier	TUBE: 12AX7	255 0201 00
V-402	Audio clipper	TUBE: 6AL5	257 0018 00
V-403	Phase inverter	TUBE: 12AU7	255 0199 00
V-404	Audio driver	TUBE: 6B4G	255 0124 00

ITEM	CIRCUIT FUNCTION	DESCRIPTION	PART NUMBER
V-405	Audio driver	TUBE: 6B4G	255 0124 00
V-406	Side tone oscillator	TUBE: 12AU7	255 0199 00
V-407	-150 volt bias rectifier	TUBE: 5V4G	255 0081 00
V-408	300 volt rectifier	TUBE: 5V4G	255 0081 00
V-409	300 volt rectifier	TUBE: 5V4G	255 0081 00
V-410	500 volt rectifier	TUBE: 5R4GY	257 0020 00
V-501	2500 volt rectifier	TUBE: 872A	256 0037 00
V-502	2500 volt rectifier	TUBE: 872A	256 0037 00
V-503	Modulator	TUBE: 810	256 0051 00
V-504	Modulator	TUBE: 810	256 0051 00
XF-401	Holder for F-401	HOLDER: fuse; extractor post for 3AG fuse	265 1002 00
XF-402	Holder for F-402		
XF-403	Holder for F-403		
XF-404	Holder for F-404		
XF-405	Holder for F-405	HOLDER: fuse; receptacle for line fuse	265 1010 00
XF-406	Holder for F-406		
XF-501	Holder for F-501	HOLDER: fuse; extractor post for 3AG fuse	265 1002 00
XF-502	Holder for F-502		
XI-201	Socket for I-201	LAMPHOLDER: bracket for miniature bayonet base bulb	262 1210 00
XI-202	Socket for I-202		
XI-203	Socket for I-203		
XI-401	Socket for I-401	LAMPHOLDER: for candle-labra base bulb	262 0033 00
XI-402	Socket for I-402		
	Pilot light disk	DISK: red	262 2360 00
	Pilot light disk	DISK: green	262 2370 00

ITEM	CIRCUIT FUNCTION	DESCRIPTION	PART NUMBER
XV-101 XV-102	Socket for V-101 Socket for V-102	SOCKET: tube; 5 prong giant	220 1016 00
XV-201 XV-202 XV-203	Socket for V-201 Socket for V-202 Socket for V-203	SOCKET: tube; octal	220 1850 00
XV-204	Socket for V-204	SOCKET: tube; 5 prong	220 1071 00
XV-301 XV-302 XV-303 XV-304 XV-305	Socket for V-301 Socket for V-302 Socket for V-303 Socket for V-304 Socket for V-305	SOCKET: tube; 7 contact miniature; accom metal shield	220 1034 00
XV-401	Socket for V-401	SOCKET: tube; 9 contact miniature	220 1123 00
XV-402	Socket for V-402	SOCKET: tube; 7 pin minia- ture	220 1134 00
XV-403	Socket for V-403	SOCKET: tube; 9 contact miniature	220 1123 00
XV-404 XV-405	Socket for V-404 Socket for V-405	SOCKET: tube; octal	220 1850 00
XV-406	Socket for V-406	SOCKET: tube; 9 contact miniature	220 1123 00
XV-407 XV-408 XV-409	Socket for V-407 Socket for V-408 Socket for V-409	SOCKET: tube; octal	220 1850 00
XV-410	Socket for V-410	SOCKET: tube; octal	220 5810 00
XV-501 XV-502 XV-503 XV-504	Socket for V-501 Socket for V-502 Socket for V-503 Socket for V-504	SOCKET: tube; 4 prong bayonet lock	220 5420 00

ITEM	CIRCUIT FUNCTION	DESCRIPTION	PART NUMBER
70E-14	OSCILLATOR	This unit has been dehydrated and hermetically sealed, and should be returned to the Collins Radio Company, if servicing is required.	
35C-2	LOW PASS FILTER		
C701		CAPACITOR: ceramic, 25 mmf p/m 10%, 1000 WV at 16 mc	913 4253 20
C702		CAPACITOR: ceramic, 25 mmf p/m 10%, 1000 WV at 16 mc	913 4253 20
C703		CAPACITOR: ceramic, 25 mmf p/m 10%, 1000 WV at 16 mc	913 4253 20
C704		CAPACITOR: ceramic, 67 mmf p/m 5%, 1000 WV at 16 mc	913 4673 10
C705		CAPACITOR: ceramic, 25 mmf p/m 10%, 1000 WV at 16 mc	913 4253 20
C706		CAPACITOR: ceramic, 50 mmf p/m 5%, 1000 WV at 16 mc	913 4503 10
C707		CAPACITOR: ceramic, 50 mmf p/m 5%, 1000 WV at 16 mc	913 4503 10
C708		CAPACITOR: ceramic, 67 mmf p/m 5%, 1000 WV at 16 mc	913 4673 10
C709		CAPACITOR: ceramic, 50 mmf p/m 5%, 1000 WV at 16 mc	913 4503 10

ITEM	CIRCUIT FUNCTION	DESCRIPTION	PART NUMBER
C710		CAPACITOR: ceramic, 50 mmf p/m 5%, 1000 WV at 16 mc	913 4503 10
C711		CAPACITOR: ceramic, 50 mmf p/m 5%, 1000 WV at 16 mc	913 4503 10
C712		CAPACITOR: ceramic, 67 mmf p/m 5%, 1000 WV at 16 mc	913 4673 10
J701		CONNECTOR: receptacle, single female contact	505 3134 001
J702		CONNECTOR: receptacle, single female contact	505 3134 001
L701		COIL: 455 mh	504 3672 002
L702		COIL: 394 mh	504 3673 002
L703		COIL: 346 mh	504 3671 002
P701		CONNECTOR: plug, single male contact	357 9040 00
P702		CONNECTOR: plug, single male contact	257 9040 00