Models 518, 518A, 519, 519A

The "Montrose" & The "Aurania"

Radio Receivers

Specifications

Frequency Range:

Broadcast: Silver Grey—530 to 1720 K.C.
Short Wave: Red—5500 to 16600 K.C.

I.F.:

463 K.C.

Tubes:

Type	Function
6A8	1st Detector and Oscillator
6K7	I.F. Amplifier
6Q7	2nd Detector, A.V.C., 1st A.F. Amplifier
6K6G	Output Amplifier
5Y4G	Rectifier

Power Supply:

Models 518, 519—105 to 125 volts A.C. 60 cycle
Models 518A, 519A—105 to 125 volts A.C. 25-60 cycle

A.V.C.:

On 6A8, 1st Detector and 6K7, 1st I.F.

Controls:

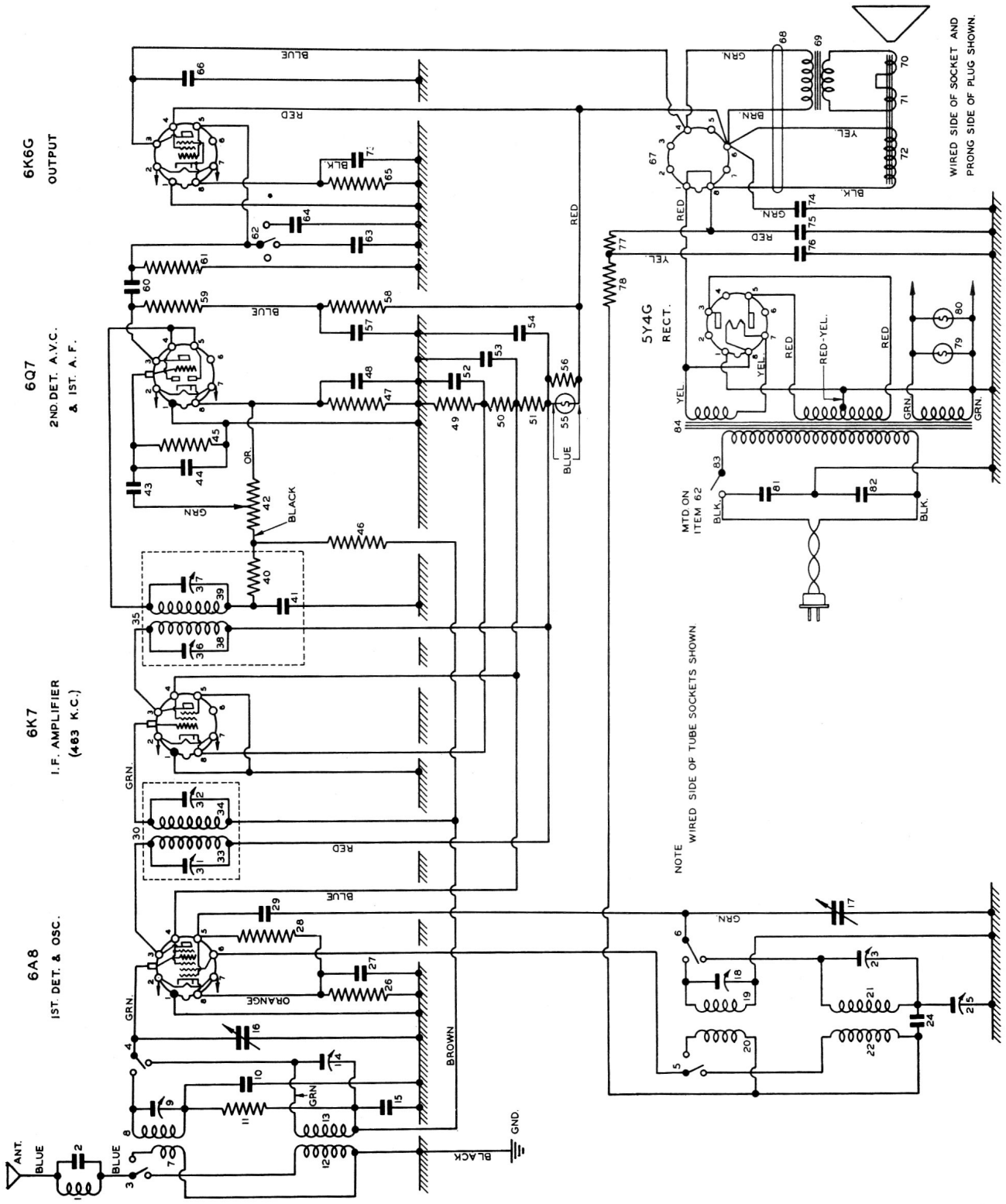
Left—A.C. switch and volume control
Centre—Tuning control
Right—Wave change switch

Loudspeakers:

Models 518, 518A, 8 inch speaker
Models 519, 519A, 10 inch speakers

Cabinets:

518, 518A—Table model
519, 519A—Console model



Schematic Circuit Diagram—Models 518, 519.

REPLACEMENT PARTS LIST

Schematic Designation	Value and Description	Part Number
1	Ant. Trap Coil	K-2739
2	Capacitor, mica, 1000 mmf	K-2739
3	W.C. Switch Ant. Pri. Sect.	K-2675
4	W.C. Switch Ant. Sec. Sect.	K-2675
5	W.C. Switch Osc. Plate Sect.	K-2675
6	W.C. Switch Grid Sect.	K-2675
7	S.W. Ant. Trans. Pri.	K-2720
8	S.W. Ant. Trans. Sec.	K-2720
9	Capacitor, var. trim, 3-25 mmf.	K-1458-6
10	Capacitor, mica, 4000 mmf, plus or minus 5%	K-1952-14
11	Resistor, 15,000 ohms, ¼ watt.	K-2226-9
12	(Bdct) Ant. Trans. Pri.	K-2719
13	(Bdct) Ant. Trans. Sec.	K-2719
14	Capacitor, var. trim, 1.5-10 mmf	K-1458-5
15	Capacitor, .1 mf, 175 volts	K-2227-9
16	Ant. Sect. (Capacitor gang	K-2637
17	Osc. Sect. max, cap. 455 mmf	K-2637
18	Capacitor, var. trim, 3-25 mmf	K-1458-6
19	(S.W.) Osc. Grid Coil	K-2722
20	(S.W.) Osc. Plate Coil	K-2722
21	(Bdct) Osc. Grid Coil	K-2721
22	(Bdct) Osc. Plate Coil	K-2721
23	Capacitor, var. trim, 3-25 mmf.	K-1458-6
24	Capacitor, .005 mf, 350 volts	K-2228-5
25	Capacitor, 300-600 mmf, lag	K-2483-1
26	Resistor, 450 ohms, ¼ watt	K-2226-43
27	Capacitor, .05 mf, 175 volts	K-2227-8
28	Resistor, 50,000 ohms, ¼ watt	K-2226-6
29	Capacitor, mica, 100 mmf	K-1611-2
30	First I.F. Trans. (Includes items 31-34)	———
31	Capacitor, var. trim, 50-200 mmf	K-2599-2
32	Capacitor, var. trim, 50-200 mmf	K-2599-2
33	I.F. Trans. Pri.	K-2743.
34	I.F. Trans. Sec.	K-2743.
35	Second I.F. Trans. (Includes items 36-41)	———
36	Capacitor, var. trim, 50-200 mmf	K-2599-2
37	Capacitor, var. trim, 50-200 mmf	K-2599-2
38	I.F. Trans. Pri.	K-2744
39	I.F. Trans. Sec.	K-2744
40	Resistor, 50,000 ohms, ¼ watt	K-2226-6
41	Capacitor, mica, 100 mmf	K-1611-2
42	Volume Control, var. ½ meg.	K-2674
43	Capacitor, .02 mf, 175 volts	K-2227-7
44	Capacitor, mica, 100 mmf	K-1611-2
45	Resistor, 2 meg, ¼ watt	K-2226-1
46	Resistor, 1 meg, ¼ watt.	K-2226-2
47	Resistor, 4,000 ohms, ¼ watt.	K-2226-28
48	Capacitor, .05 mf, 175 volts	K-2227-8
49	Resistor, 450 ohms, ¼ watt	K-2226-43
50	Resistor, 8800 ohms, 2 watt	K-1870-4
51	Resistor, 6600 ohms, 2 watts.	K-1870-5
52	Capacitor, .05 mf, 175 volts	K-2227-8
53	Capacitor, .1 mf, 175 volts	K-2227-9
54	Capacitor, .1 mf, 350 volts	K2228-9
55	Lamp, tuning indicator, 24 volt	K-2643
56	Resistor, 10,000 ohms, 2 watt.	K-1870-2
57	Capacitor, .05 mf, 350 volts	K-2228-8
58	Resistor, 1/10 meg, ¼ watt.	K-2226-5
59	Resistor, ¼ meg, ¼ watt	K-2226-4
60	Capacitor, .02 mf, 350 volts	K-2228-7
61	Resistor, ½ meg, ¼ watt	K-2226-3
62	Tone Control Switch	K-2673
63	Capacitor, .002 mf, 175 volts	K-2227-1
64	Capacitor, .005 mf, 175 volts	K-2227-5
65	Resistor, 700 ohms, ½ watt	K-2363-2
66	Capacitor, .003 mf, 350 volts	K-2228-3
67	Loudspeaker Plug	K-2678
68	Loudspeaker Cable	———
69	Output Transformer	K-2718-1
70	Voice Coil & Diaph. (Imp. 1.82 ohms—Model 518)	K-2544
70A	Voice Coil & Diaph. (Imp. 1.82 ohms—Model 519)	K-2708
71	Hum Bucking Coil	———
72	Field Coil	K-2543-2
73	Capacitor, D.E., 10 mf, 20 volts	K-2735
74	Capacitor, D.E., 8 mf, 225 volts	K-2735
75	Capacitor, D.E., 8 mf, 330 volts	K-2735
76	Capacitor, D.E., 4 mf, 225 volts	K-2735
77	Resistor, 30,000 ohms, ½ watt	K-2363-3
78	Resistor, 10,000 ohms, ¼ watt	K-2226-10
79	Dial Lamp, 6.3 volt	K-2589-3
80	Dial Lamp, 6.3 volt	K-2589-3
81	Capacitor, .025 mf, 1100 volts	K-1750
82	Capacitor, .025 mf, 1100 volts	K-1750
83	A.C. Switch (Mounted on item 62)	———
84	Power Transformer (60 cycles)	K-2179-9
85	Power Transformer (25 cycles)	K-2179-10

MISCELLANEOUS:—(Not included in item designations):—

Sockets, eight contact octal base	K-1924-1
Loudspeaker socket	K-2704
Reduction drive	K-2640
Dial scale glass	K-2641
Indicator pointer	K-2654
Wave Change indicator	K-2642
Tuning meter scale	K-2644
Shutter	K-2652
Eccentric	K-2653
Disc. Assy.	K-2655
Clips for dial scale	K-2436
Lamp socket assembly	K-2598-2
Loudspeaker plug	K-2678
Knobs	K-2231-1
Dial cover (fibreloid)	K-2445
Felt washers for knobs	K-2491-2
Chassis mounting screws	K-1340-7
Chassis mounting washers	K-2516-1
Tuning wrenches (all models)	K-836

SOCKET RESISTANCE READINGS TO GROUND — OHMS

TUBE	Top Cap (Cont. Grid)	Pin No. 1 Shell	Pin No. 2 Heater	Pin No. 3 Plate	Pin No. 4 Screen	Pin No. 5	Pin No. 6	Pin No. 7 Heater	Pin No. 8 Cathode
Type 6A8 1st Det. & Oscillator	1.5 Meg.	0	0	15,850	9,250	(No. 1 Grid) 50,450	(No. 2 Grid) 58,100	0.3	450
Type 6K7 I.F. Amplifier	1.5 Meg.	0	0	15,850	9,250	0 (Suppressor)	—	0.3	450
Type 6Q7 2nd Det., AVC &1st A.F. Amp.	2 Megs.	0	0	366,000	554,000 (Diode Plate)	554,000 (Diode Plate)	—	0.3	4000
Type 6K6G Output Amp.	—	0	0	17,250	16,300	0.5 meg. (Cont. Grid)	—	0.3	700
Type 5Y4G Rectifier	—	0	—	157-60 cy. 265-25 cy.	—	157-60 cy. 265-25 cy.	—	(Fil.) 18,100	(Fil.) 18,100

Unless otherwise stated, all readings are taken with the power off, volume control maximum, tone control in treble position, and wave-change switch in the broadcast position. The pin numbers correspond with those shown on the schematic circuit.

Some plate and screen resistances to ground may vary slightly due to variations in tuning lamp resistance.

SOCKET VOLTAGE READINGS

TUBE	VOLTAGES				CURRENTS—M.A.		
	Heater (A-C)	Plate	Screen	Cathode	Screen	PLATE	
						Normal Bias	Bias Red. 4½ Volts
Type 6A8	6.45	220*	105	4.5	7.0	3.5†	8.0
Type 6K7	6.45	220	105	6.7	1.3	4.0	7.0
Type 6Q7	6.45	58	—	1.2	—	0.4	0.5
Type 6K6G	6.45	215	230	16	4.3	21	24
Type 5Y4G	5.0	—	—	325	(Plate) 26	26	—

* Anode-grid voltage 160.

† Anode-grid current 5.0 ma.

REALIGNING INSTRUCTIONS

I.F. ALIGNMENT:

(*a*) Set the generator at 463 kc., and connect its output through a 0.1 mf. capacitor to the grid of the type 6A8, first detector tube.

(*b*) Adjust trimmer capacitors, items 31, 32, 36 and 37 for maximum output.

(*c*) Reduce the output from the signal generator to as low a value as will give an output reading from the receiver, and check the adjustments. All trimmers should peak properly.

R.F. ALIGNMENT—BROADCAST BAND:

(*a*) Connect the output of the signal generator through a 100 mmf. mica capacitor to the antenna lead. Ground the ground lead of the set.

(*b*) Check that the indicator pointer is lined up with the small mark at the end of the short-wave band calibration when the gang is turned all in. The pointer is of the push-on type and can be forced around as required.

(*c*) Set the signal generator and set at 1600 kilocycles. Adjust trimmer, item 23, to bring in the signal. Then adjust trimmer, item 14, for maximum sensitivity.

(*d*) Set the generator at 600 kc., and tune the receiver to it. Adjust trimmer, item 25, while rocking the gang, for maximum sensitivity.

(e) Recheck at 1600 kc.

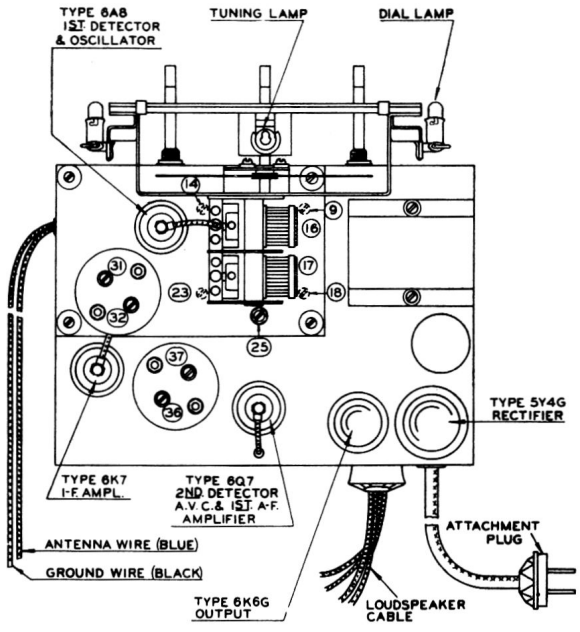
R.F. ALIGNMENT—SHORT-WAVE BAND:

(*a*) Substitute a 400-ohm resistor in place of the capacitor in the lead from the signal generator.

(*b*) Set the signal generator and the receiver at 15 megacycles. Adjust the trimmer, item 18, to bring in the signal. (Make sure that the set is not tuned to the image frequency, which should come in with the signal generator set at approximately 14.1 mc.)

(*c*) Adjust trimmer, item 9, for maximum sensitivity while rocking the gang.

(*d*) Since the lag capacitor, item 10, is fixed, it is unnecessary to lag at the low frequency end.



Chassis Layout showing Top Aligning Positions.