

ENGINEERING DATA

STROMBERG-CARLSON NO. 674AC RADIO RECEIVER

Stromberg-Carlson Company Limited
Toronto 4, Canada

IDENTIFICATION TABLE

| Model | Input Power | Frequency | Chassis | Cabinet | Speaker | Phono Unit |
|--------|-------------|-----------|----------|---------|---------|------------|
| 674H | 25-60 | cycles | 112996H | 108997 | 155992 | — |
| 674PA | 60 | " | 112996P | 01294 | 155996 | 148998 |
| 674PB | 25 | " | 112996P | 01294 | 155996 | 148999 |
| 674PSA | 60 | " | 112996PS | 108993 | 155996 | 140998 |
| 674PSB | 25 | " | 112996PS | 108993 | 155996 | 140999 |

SPECIFICATIONS

| | | |
|--|--|--|
| Voltage Rating: | | 105-125 volts AC |
| Input Power Frequency: | <div> Radio Chassis Phono Motor </div> | 25-60 cycles <div> 60 cycle designated A 25 cycle designated B </div> |
| Number of Tubes: | | Seven |
| 1 — 6SA7 Modulator Oscillator | | 1 — 6SQ7 Inverter |
| 1 — 6SK7 IF Amplifier | | 2 — 6F6G's Push-Pull Output |
| 1 — 6SQ7 Demodulator, AVC, First Audio | | 1 — 5Y4G Rectifier |
| 2 Pc26287 Pilot Lamps 6-8 v. 250 ma. | | |
| Type of Circuit: | | Superheterodyne |
| Tuning Range: | <div> A Standard Broadcast B 31 Meter Spreadband C 25 Meter Spreadband D 19 Meter Spreadband </div> | 540-1600 kilocycles 9.250- 9.750 megacycles 11.500-12.000 megacycles 14.900-15.600 megacycles |
| Input Power Rating: | <div> Radio Chassis Only Single Record Player Automatic Record Player </div> | 115 watts 15 watts 25 watts |
| Intermediate Frequency: | | 460 kilocycles |
| Speaker: | | Dynamic |
| Voice Coil Impedance at 400 cycles: | | 3.5 ohms (approx.) |
| Field Coil Resistance: | | 1050 ohms (approx.) |
| Power Output: | | 9 watts maximum |
| Phono Motor: | | Rim-drive 78 r.p.m. |
| Pick-up: | | High Impedance Crystal |

FEATURES

The model 674 is a seven-tube, four-band superheterodyne receiver designed to operate on either 25 or 60 cycle alternating current supply. It is particularly well adapted for phonograph operation in conjunction with any good turntable unit and high-impedance "crystal" pick-up. Its "Full-Vision" Slide-Rule type of dial, plus a smooth-acting tuning control, allows maximum ease of tuning in either Standard Broadcast or Short Wave bands; this is assured by the electrical Spread-Band feature. The set is designed to operate satisfactorily with its own built-in loop antenna but for maximum performance a good outside antenna, such as the Stromberg-Carlson #9, is recommended.

ALIGNING INFORMATION

Never Re-align Unless Absolutely Necessary

Use a good modulated signal generator (test oscillator with variable R.F. output voltage) and a sensitive output meter across the voice coil of the speaker.

Always align using the smallest possible input from the signal generator, as a strong signal makes adjustments inaccurate. Always turn the receiver volume control "Full on".

Be sure the Broadcast Loop is plugged into its socket when alignment of the Broadcast Band is made.

ALIGNING PROCEDURE (Follow this order exactly)

1. Dial Pointer Adjustment

With the plates of the gang condenser fully engaged, check to be sure the dial pointer is in a vertical position directly on the calibration mark located at the low frequency end of the dial scale. It appears as a small gold dot at the lower left hand corner of the dial opening. Adjust if necessary.

2. Intermediate Frequency Adjustments

- 2.1 Set the range switch to "BC" broadcast position.
- 2.2 Set the pointer to the extreme low frequency end of the dial.
- 2.3 Connect the ground terminal of the signal generator to the chassis ground terminal.
- 2.4 Introduce a modulated 460 kilocycle signal to the RF grid of the 6SA7 modulator tube (#8 terminal or C₂), using a .1 mfd. capacitor in series with the output lead of the signal generator.
- 2.5 Adjust the I.F. 460 Kc. trimmers for maximum output in the following order:
 - A. Secondary of 2nd IF' transformer C19
 - B. Primary of 2nd IF transformer C18
 - C. Secondary of 1st IF transformer C13
 - D. Primary of 1st IF transformer C12

3. Radio Frequency Adjustments

Broadcast Range

- 3.1 Set the range switch to Broadcast ("A")
- 3.2 Set the signal generator frequency and the receiver tuning dial to 1500 Kc.
- 3.3 Connect a 200 mmfd capacitor in series with the antenna lead from the signal generator to the "Ant". terminal on the set, replacing the .1 mfd capacitor.
- 3.4 Adjust the "BC" band oscillator trimmer C4 for maximum signal and correct calibration.
- 3.5 Adjust the antenna trimmer C2 for maximum output. "Rock" the gang to obtain maximum peak.
- 3.6 Check calibration and sensitivity at 600 Kc. Adjust "BC Ant. 600 Kc adjust" for maximum sensitivity.
- 3.7 Repeat 3.4 and 3.5 until further adjustment at either 1500 Kc or 600 Kc makes no improvement in performance.

4. Shortwave Spreadband Ranges

- 4.1 Set the Range Switch to "B" 31 meter band.
- 4.2 Set the signal generator frequency and the receiver tuning dial to 9.500 megacycles.
- 4.3 Connect a 400 ohm carbon resistor in series with the antenna lead from the signal generator to the "Ant" terminal on the set, replacing the 200 mmfd. capacitor.
- 4.4 Adjust L8 "Osc. 31M" Band-centering screw for maximum signal and correct calibration.
- 4.5 Check sensitivity at 9.250 and 9.750 megacycles.
- 4.6 Set the range switch to "C" 25 meter band, and the signal generator frequency to 11.8 mcs.
- 4.7 Adjust L7 "Osc. 25M" band-centering screw for maximum signal and correct calibration.
- 4.8 Check sensitivity at 11.500 and 12.000 megacycles.
- 4.9 Set the range switch to "D" 19 meter band and the signal generator frequency to 15.3 mcs.
- 4.10 Adjust L6 "Osc. 19M" band-centering screw for maximum signal and correct calibration.
- 4.11 Check sensitivity at 14.900 and 15.600 megacycles.

Since the average service oscillator is not, as a rule, calibrated finely enough to be set to the stated band "center-frequencies" it is always advisable to check the spreadband ranges on actual reception of shortwave stations of known frequency.

NORMAL VOLTAGE READINGS

Take all readings with the chassis operating and tuned to 1000 Kc—no signal.

Use a line voltage of 117 volts or make allowance for any variations.

Use a good high resistance voltmeter having a resistance of at least 1000 ohms per volt. Read from the indicated terminals to chassis base. See the location chart for position of sockets. AC voltages are indicated by italics.

674P AND PS VOLTAGE CHART

| Tube | Type | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|----------------|---------------------------------|-----|---|------------|-----|------------|-----|------------|-----|
| 6SA7 | Osc. Modulator | 0 | 0 | 290 | 132 | —1.25 | 0 | <i>5.6</i> | 0 |
| 6SK7 | IF Amp. | 0 | 0 | 0 | 0 | 0 | 225 | <i>5.6</i> | 290 |
| 6SQ7 | { Dem. AVC { 1st Audio | 0 | 0 | 0 | 0 | 0 | 90 | <i>5.6</i> | 0 |
| 6SQ7 | Phase Inverter | 0 | 0 | 0 | 0 | 0 | 85 | <i>5.6</i> | 0 |
| 6F6G | Output | 0 | 0 | 270 | 280 | 0 | 0 | <i>5.6</i> | 0 |
| 6F6G | Output | 0 | 0 | 270 | 280 | 0 | 0 | <i>5.6</i> | 0 |
| 5Y4G | Rect. | | | <i>360</i> | | <i>360</i> | | <i>4.6</i> | |
| Speaker Socket | | 300 | 0 | 0 | 400 | 400 | 0 | 400 | |

674H VOLTAGE CHART

| Tube | Type | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|----------------|----------------------------------|-----|---|------------|-----|------------|-----|------------|------------|
| 6SA7 | Osc. Modulator | 0 | 0 | 260 | 115 | 1.25 | 0 | <i>6</i> | 0 |
| 6SK7 | IF Amp. | 0 | 0 | 0 | 0 | 0 | 137 | <i>6</i> | 280 |
| 6SQ7 | { Dem. AVC { 1st. Audio | 0 | 0 | 0 | 0 | 0 | 75 | <i>6</i> | 0 |
| 6SQ7 | Phase Inverter | 0 | 0 | 0 | 0 | 0 | 75 | <i>6</i> | 0 |
| 6F6G | Output | 0 | 0 | 290 | 260 | 0 | 0 | <i>6</i> | 17 |
| 6F6G | Output | 0 | 0 | 290 | 260 | 0 | 0 | <i>6</i> | 17 |
| 5Y4G | Rect. | | | <i>320</i> | | <i>320</i> | | <i>4.6</i> | <i>4.6</i> |
| Speaker Socket | | 260 | 0 | 0 | 400 | 400 | 0 | 400 | |

Caution

CONTINUITY TEST

Remove all tubes and disconnect the receiver from the power supply before making the continuity test. Remove the speaker plug from the socket.

Use a good meter, capable of measuring accurately up to several megohms.

The resistances given are often approximate owing to the electrolytic capacitors in the circuit. When this is the case, be sure to reverse the test leads and read the highest resistance.

Read from the indicated terminals to the chassis base unless otherwise specified.

| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|------|---------------------------------|----|-----|--------|--------|--------|--------|---|--------|
| 6SA7 | Mod. Osc. | S | S | 100000 | 120000 | 20000 | S | S | 4M |
| 6SK7 | IF Amp. | S | S | S | 2M | 150 | 200000 | S | 100000 |
| 6SQ7 | { Dem. AVC { 1st Audio | S | 5.6 | 10 | 1M | 2M | 400000 | S | S |
| 6SQ7 | Phase Inverter | S | S | 5.6M | S | S | 400000 | S | S |
| 6F6G | Output | S | S | 100000 | 100000 | 500000 | 270000 | S | 200 |
| 6F6G | Output | S | S | 100000 | 100000 | 500000 | 500000 | S | 200 |
| 5Y4G | Rect. | 10 | 0 | 190 | 0 | 190 | 0 | 0 | 0 |

REPLACEMENT PARTS

CAPACITORS

| Part No. | Designation | Description | Part No. | Designation | Description |
|----------|-----------------------------------|---|----------|-------------|-----------------------|
| 31698C | C2, C3, C4, C5 | Variable Capacitor and Pulley | 163980 | | "C" Washer |
| 111998 | C28, C30, C31 | Capacitor, Electrolytic 40 mfd. 475v, 25 mfd, 25V | 24253 | | Flat washer |
| 01529 | C32 | Capacitor, Electrolytic 16. mfd, 350v | 24760 | | Spring washer |
| 110397 | C8 | Capacitor Silver Mica, 500 mmfd, 5% 500V | 106399 | | Dial drive bushing |
| 110398 | C7 | Capacitor, Ceramicon 325 mmfd, 7 mmfd, zero coefficient | 526305 | | Shakeproof Lockwasher |
| 27646C | C24 | Capacitor Paper .002 mfd 600v | 19650 | | Nut |
| 25485C | C22, C23 | Capacitor Paper .01 mfd 600 v | 32146C | | Knob Assembly (ring) |
| 25484C | C11, C14, C15, C16, C17, C27, C29 | Capacitor Paper .02 mfd 600v | 33365 | | Knob Assembly (Lines) |
| 30853C | C26 | Capacitor Paper .003 mfd 600v | | | |
| 24559 | C1 | Capacitor Mica 100 mmfd 10% 500v | | | |
| 110399 | C9, C25 | Capacitor Mica 200 mmfd 10% 500v | | | |
| 27577 | C6 | Capacitor Mica 15 mmfd 10% 500v | | | |
| 48253 | C10 | Capacitor Mica 51 mmfd 10% 500v | | | |
| 25487 | C23 | Capacitor Mica 1000 mmfd 10% 500v | | | |

COILS, TRANSFORMERS, SPEAKER

| | | |
|--------|----------------------------------|---------------------------------|
| 114599 | C12, C13, L14, L15 | First IF Transformer Assembly |
| 32062C | C18, C19, C20, C21, L16, L17, R7 | Second IF Transformer Assembly |
| 161999 | L10, L11, L12, L13 | Power Transformer (25-60 cycle) |
| 161397 | L19, L20 | Output Transformer |
| 114292 | L4, L5 | SW Antenna Coil |
| 01136 | L2, L3 | B.C. Antenna Coil |
| 114295 | L8 | 31 Meter Oscillator Coil |
| 114294 | L7 | 25 Meter Oscillator Coil |
| 114293 | L6 | 19 Meter Oscillator Coil |
| 114297 | L9 | BC Oscillator Coil |
| 155992 | L21 | Speaker 8 inch PM |
| 155996 | L18, L21 | Speaker 10 inch EM |
| 114996 | L22 | Peaking Coil |

RESISTORS

| | | |
|--------|----------|--|
| 01271 | R22 | Resistor, Wire wound 1500 ohms 10 w |
| 46361 | R23 | Resistor, Wire wound 5000 ohms 10 w |
| 28187C | R14, R17 | Resistor, 470000 ohms 10% BT $\frac{1}{2}$ |
| 28177C | R16 | Resistor, 47000 ohms 10% BT $\frac{1}{2}$ |
| 28154C | R20 | Resistor, 470 ohms, 10% BT $\frac{1}{2}$ |
| 28200C | R11, R18 | Resistor, 5.6 megohms 10% BT $\frac{1}{2}$ |
| 28191C | R21, R25 | Resistor 1. megohm 10% BT $\frac{1}{2}$ |
| 28184C | R13, R19 | Resistor, 270000 ohms 10% BT $\frac{1}{2}$ |
| 28179C | R6 | Resistor, 68000 ohms 10% BT $\frac{1}{2}$ |
| 27407C | R2 | Resistor, 22000 ohms 10% BT $\frac{1}{2}$ |
| 28195C | R1 | Resistor, 2.2 megohms 10% BT $\frac{1}{2}$ |
| 28174C | R24 | Resistor, 27000 ohms 10% BT $\frac{1}{2}$ |
| 28006C | R8 | Resistor, 100000 ohms 10% BT $\frac{1}{2}$ |
| 28148W | R5 | Resistor, 150 ohms 10% BW $\frac{1}{2}$ |
| 28134W | R12 | Resistor, 10 ohms 10% BW $\frac{1}{2}$ |
| 149997 | R3, R4 | Resistor, 10000 ohms 10% BT2 |
| 149996 | R15 | Resistor, 220 ohms 5% BW2 |

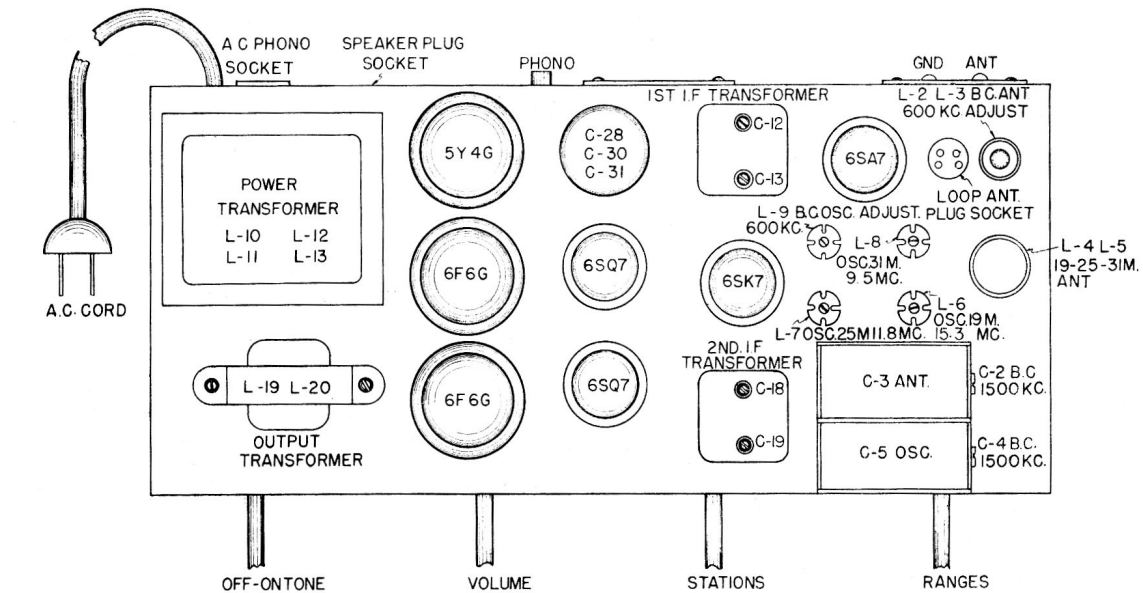
MISCELLANEOUS

| | | |
|--------|--|---------------------------------|
| 26122 | | "Ant.-Gnd." terminal strip |
| 27088 | | Spring washer for coil mounting |
| 117999 | | Power Supply Cord |
| 152997 | | Pilot Lamp Socket Assembly |
| 29956 | | Pilot Lamp 6-8 volts 250 ma. |
| 33248 | | Octal Socket |
| 23517 | | Speaker socket (7 prong) |
| 143998 | | Speaker Plug (7 prong) |
| 152999 | | Phono Socket |
| 32048 | | AC Outlet Socket |
| 32075 | | Small Idler Pulleys |
| 124999 | | Dial cord |
| 144997 | | |
| 32093 | | |
| 32073 | | |
| 35759 | | |
| 32086 | | Pointer Assembly |
| 29627 | | |
| 122998 | | Tension Spring (Pointer Drive) |
| 30269 | | Tension Spring (Gang Drive) |
| 158998 | | Dial (Glass) |
| 32047 | | Rubber Corner Mounts |
| 32165 | | Range Switch |
| | | Loop Socket (4 prong) |
| | | Loop Plug (4 prong) |

CONTROLS AND KNOBS

| | | |
|--------|-----|--|
| 145993 | R9 | Volume Control Pot, 1 megohm |
| 145994 | R10 | Tone Control Pot with AC switch, 1. megohm |
| 150998 | | Dual Drive shaft |

CHASSIS LAYOUT



DIAL CORD ARRANGEMENT (AS VIEWED FROM FRONT OF REC.)

