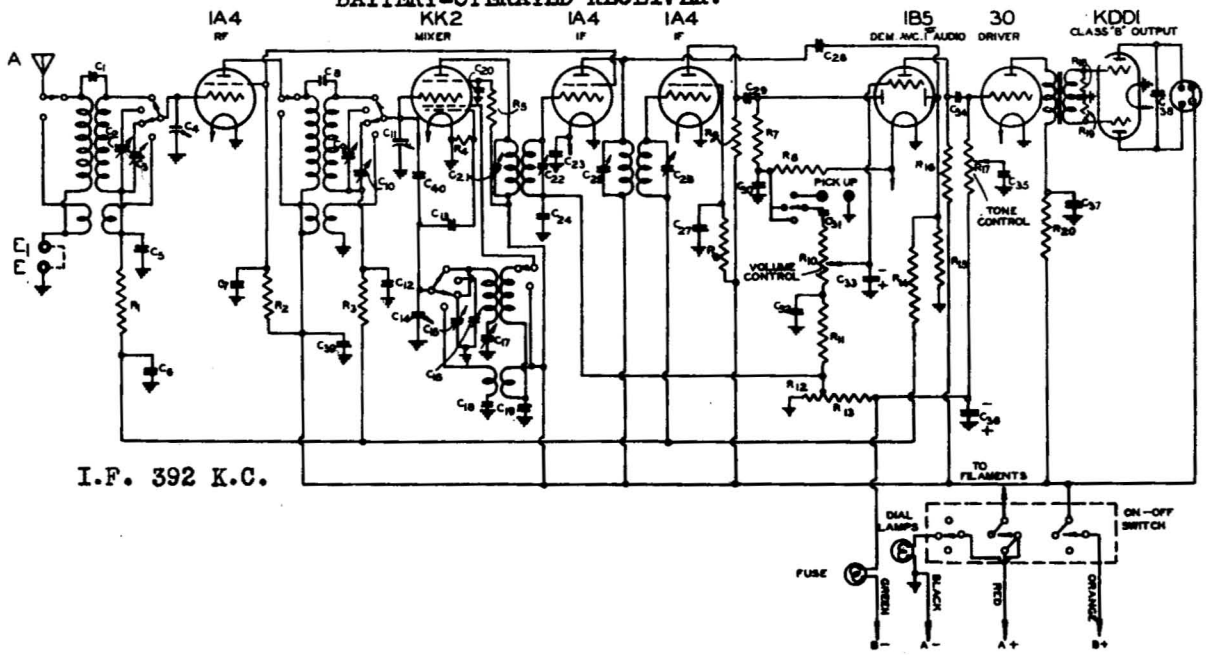
STROMBERG-CARLSON MODEL 789 SUPERHETERODYNE 7 VALVE DUAL-WAVE BATTERY-OPERATED RECEIVER.



C1	- 10mmf	C13	- 100mmf	C25	- 85 mmf	C37	- .1 mf	R9	- 1m ohms
C2	- S.W.Trim.	C14	- 12-400mmf	C26	- 85 mmf	C38	- .002mf	R10	- 1m ohms
C3	- B.C.Trim.	C15	- B.C.Trim.	C27	- .1 mf	C39	- .1 mf	R11	- .5m ohms
C4	- 12-400mmf	C16	- S.W.Trim.	C28	- 250mmf	C40	- 2 mmf	R12	- 100 ohms
C5	- .05mf	C17	- B.C.Pad.	C29	- 50 mmf	R1	- .1m ohms	R13	- 425 ohms
C6	- .05mf	C18	- S.W.Pad.	C30	- 100mmf	R2	- .05m ohms	R14	- 1m ohms
C7	- .1 mf	C19	- .1 mf	C31	- .02 mf	R3	- .1m ohms	R15	- 1m ohms
C8	- 4mmf	C20	- .1 mf	C32	- 10 mf	R4	- .05m ohms	R16	- .2m ohms
C9	- S.W.Trim.	C21	- 85mmf	C33	- 100mmf	R5	- .05m ohms	R17	- .5m ohms
C10	- B.C.Trim.	C22	- 85 mmf	C34	- .1 mf	R6	- .2m ohms	R18	- .02m ohms
C11	- 12-400mmf	C23	- .25 mf	C35	- .01 mf	R7	- .1m ohms	R19	- .02m ohms
C12	- .05mf	C24	- .1 mf	C36	- 10 mf	R8	- 1m ohms	R20	- 2000 ohms

VOLTAGES.

VALVE.	PLATE	NEGATIVE BIAS.
1A4 R.F.	130	--
KK2 Octode, Pentode Section	130	--
KK2 Oscillator Section	130	--
1A4 1st I.F.	130	1.5
1A4 2nd I.F.	125	1.5
1B5 Dem., A.V.C., 1st Audio	50	1.5
30 Driver	130	6.5
KDD1 Class "B"	130	--

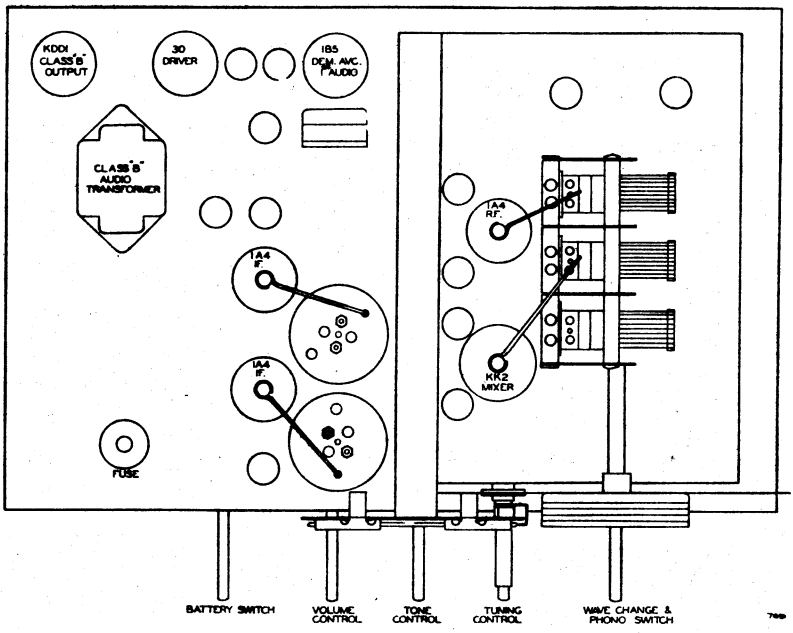
The RF and 1st I.F. screens are series fed through 50,000 ohms, 2nd I.F. screen through 1 megohm, and the KK2 screen through 50,000 ohms from maximum high tension. The seven valves are operated at 2 volts and .65 amperes. The "B" battery drain is approx. 14 milliamperes standing current.

Stromberg-Carlson

STROMBERG-CARLSON
SERVICE BULLETIN, No. 789

Stromberg-Carlson Model 789 Superheterodyne

DUAL-WAVE BATTERY-OPERATED RECEIVER.



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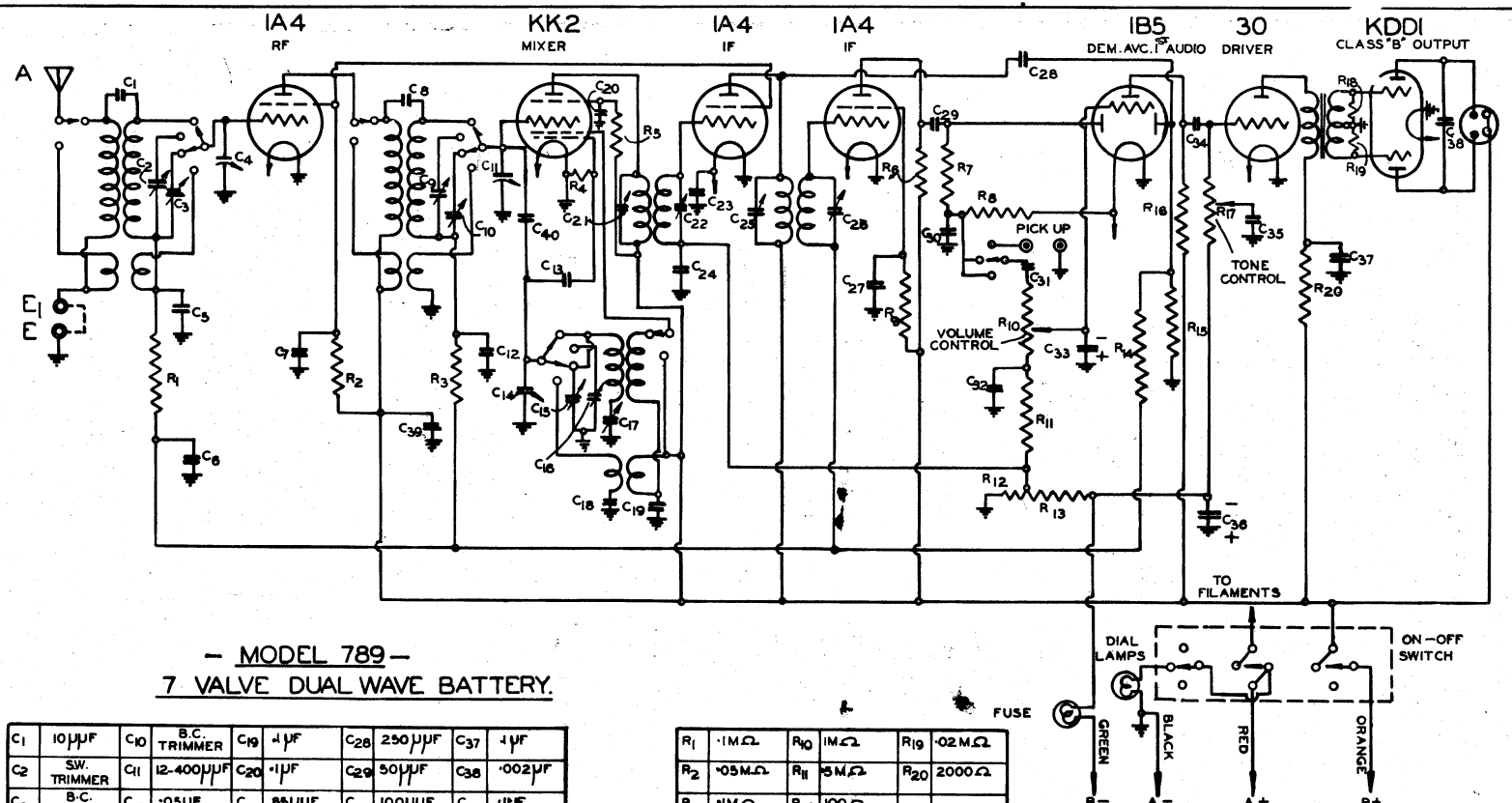

— MODEL 789 —

7 VALVE DUAL WAVE BATTERY.

C_1	10μμF	C_{10}	B.C. TRIMMER	C_{19}	.1μF	C_{28}	250μμF	C_{37}	.1μF
C_2	SW. TRIMMER	C_{11}	12-400μμF	C_{20}	.1μF	C_{29}	50μμF	C_{38}	.002μF
C_3	B.C. TRIMMER	C_{12}	.05μF	C_{21}	85μμF	C_{30}	100μμF	C_{39}	.1μF
C_4	12-400μμF	C_{13}	100μμF	C_{22}	85μμF	C_{31}	.02μF	C_{40}	2 μμF
C_5	.05μF	C_{14}	12-400μμF	C_{23}	.25μF	C_{32}	10μF		
C_6	.05μF	C_{15}	B.C. TRIMMER	C_{24}	.1μF	C_{33}	100μμF		
C_7	.1μF	C_{16}	SW. TRIMMER	C_{25}	85μμF	C_{34}	.1μF		
C_8	4μμF	C_{17}	BC. PADDER	C_{26}	85μμF	C_{35}	.01μF		
C_9	SW TRIMMER	C_{18}	SW PADDER	C_{27}	.1μF	C_{36}	10μF		

R_1	.1MΩ	R_{10}	1MΩ	R_{19}	.02MΩ
R_2	.05MΩ	R_{11}	.5MΩ	R_{20}	2000Ω
R_3	.1MΩ	R_{12}	100Ω		
R_4	.05MΩ	R_{13}	425Ω		
R_5	.05MΩ	R_{14}	1MΩ		
R_6	.2MΩ	R_{15}	1MΩ		
R_7	.1MΩ	R_{16}	.2MΩ		
R_8	1MΩ	R_{17}	.5MΩ		
R_9	1MΩ	R_{18}	.02MΩ		

* IF. 392 KC.

CHANGES

STROMBERG-CARLSON (AUSTRALASIA) LIMITED
SYDNEY, AUSTRALIA.

DRAWN
EXAMINED
APPROVED
DATE 13-7-37

DRAWING NO 1696

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(c) Tone Control:

This is situated in the centre of the chassis. For normal or "brilliant" reception turn the control in a clockwise direction. When the background of noise is objectionable (as sometimes occurs on long distance reception) turn the control to the left.

4. VALVES:

All Receivers leaving the factory are equipped with valves inserted into the sockets. If for any reason it becomes necessary to remove the valves, care should be taken to see that each one is replaced in the socket from which it was taken. The photograph of the chassis on page 1 shows the type and function of the valves and their exact location.

5. PICK-UP JACK:

Provision is made on the back of the chassis for the attachment of a phonograph pick-up. The pick-up is brought into operation by turning the wave change switch fully to the left. The operation of the switch also removes any possibility of any radio programmes being heard while the pick-up is in use. The pick-up may be left permanently connected when the switch is changed back for radio operation.

6. VOLTAGES:

Valve	Plate	Negative Bias
IA4 RF	130	-
KK2 Octode, Pentode Section	130	-
KK2 Oscillator Section ...	130	-
IA4 1st IF	130	1.5
IA4 2nd IF	125	1.5
IB5 Dem., A.V.C., 1st Audio	50	1.5
30 Driver	130	6.5
KDD1 Class "B"	130	-

The RF and 1st IF screens are series fed through 50,000 ohms, 2nd IF screen through 1 megohm, and the K.K.2 screen through 50,000 ohms from maximum high tension.

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STROMBERG-CARLSON MODEL 789

SUPERHETERODYNE

Dual-Wave Battery-Operated Receiver.

1. GENERAL DESCRIPTION OF RECEIVER.

This 7-valve, two-band battery-operated superheterodyne Receiver provides excellent reception of both standard wave and short wave broadcasting stations. One band is the usual broad cast band from 1500 K.C. to 550 K.C. and the other a short-wave band from 16.5 to 51 metres. This latter band includes the five important internationally assigned short-wave broadcast bands at 16.8, 19, 25, 31 and 49 metres, respectively.

High sensitivity, excellent selectivity, automatic volume control, and good fidelity characterise this receiver. The tuning ranges are quickly interchangeable by means of a rotary switch. Ease and convenience of operation are assured by the dual ratio drive.

Both ranges are accurately calibrated — the short-wave band in metres and megacycles, and the broadcast band in kilocycles. All important broadcast stations are marked on the dial.

The short-wave range has the location of the 16.8, 19, 25, 31, and 49 metre bands indicated by heavy white lines.

2. DESCRIPTION OF ELECTRICAL CIRCUIT:

In this model, the valves have been chosen and the circuit so designed as to give the greatest efficiency consistent with low "A" and "B" battery consumption. The seven valves are operated at 2 volts and .65 amperes.

The "B" battery drain is approximately 14 milliamperes standing current.

The circuit is of the superheterodyne type, and consists of an R.F. amplifying stage using a type IA4 valve, a combined detector-oscillator stage using a KK2 valve, two I.F. amplifying stages using type IA4 valves, a combined diode second detector, A.V C. and 1st audio stage using a type IB5 valve, a single driver stage using a type 30 valve, and a class "B" output system using a type KDDI valve.

3. INSTALLATION INSTRUCTIONS:

(a) Aerial.

The sensitivity of this model is such that for broadcast recep-

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The next step is to get the dial calibrations correct. Leaving the generator on 600 K.C. tune it in on the set and adjust the pointer to read 600 K.C. The pointer may be moved by loosening the two screws in the hub of the large friction drive disc and moving this slightly in relation to the gang condenser. Then tighten these screws again. Set the generator to 1400 K.C. and turn the set dial to 1400 K.C. Adjust the oscillator, R.F., and aerial trimmers for maximum signal.

Re-check at 600 K.C. and also at 1000 K.C. The dial calibrations should now be correct.

SHORT-WAVE BAND:

Switch the wave change switch to the short-wave position and set the generator to 16.5 metres. Adjust the short-wave oscillator trimmer with the gang right out. Then turn the generator to 17 metres and adjust the R.F. and aerial trimmers. The short-wave band should then be correctly adjusted.

3. OPERATION:

(a) Wave Change Switch:

This is located at the right-hand side of the chassis, and has three positions. The centre position is for broadcast reception between 1500 and 550 K.C. Turning the knob from this central position in a clockwise direction switches in the short-wave range, while turning in an anti-clockwise direction permits the receiver to be used for gramaphone pick-up reproduction.

(b) On-off Switch:

The on-off switch is located at the left-hand side of the chassis. Turning the knob in a clockwise direction results in the following changes:-

Position 1: Receiver switched off.
" 2: Receiver switched on, and dial lights on.
" 3: Receiver switched on, and dial lights off.

It is desirable to extinguish the dial lights when the station has been selected, thus lessening the drain on the "A" battery

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tion a well-insulated wire about 20 or 30 feet in length, placed along the picture moulding in a room, or beneath the carpet, will prove satisfactory. Care should be taken to place all such indoor aerials as far away as possible from electric light or power conduits, and in particular, clear of all unshielded flexible leads, since these latter are prolific radiators of undesirable electrical impulses.

An outdoor aerial is the most efficient, and is strongly recommended, especially for long-distance daylight reception on the broadcast band. The length of this aerial should be from 30 to 50 feet. In noisy areas (due to electrical interference) the aerial should be erected as far as possible from and at right angles to any electric power or light mains.

(b) EARTH:

The chassis should be connected to earth by means of an insulated wire attached to a water pipe by an approved clamp. It is preferable to connect the earth lead to the last section of the pipe where it enters the ground, thus avoiding the high resistance contacts at the joints. Should a water system not be available, an efficient earth may be obtained by driving a metal pipe or burying about four square feet of metal sheeting in moist earth: the connection to the metal should preferably be soldered.

(c) BATTERIES

(i) "A" battery. ---- This consists of a 2-volt 100 ampere hour accumulator.
(ii) "B" and "C" batteries. -- These comprise 3 heavy duty or super 45-volt batteries.

To join the battery leads correctly to the batteries, reference should be made to the designation tabs on the leads and to the colour code, as shown in the circuit diagram on Page 2 hereof.

The three "B" batteries may be housed in the back of the cabinet on the lower shelf -- on the right-hand and left-hand sides of the loud-speaker.

The "A" battery may then be placed between the "B" batteries.

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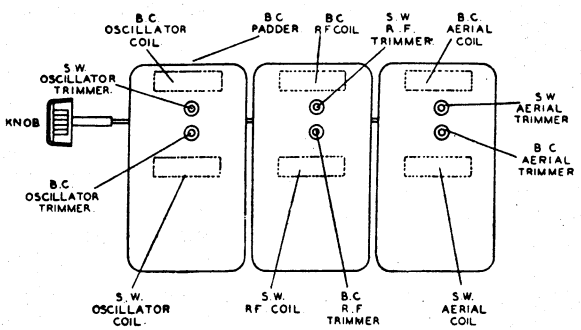
ALIGNMENT INSTRUCTIONS.

LOCATION OF COILS AND TRIMMERS
BENEATH CHASSIS



The trimmer capacitors on the coil assembly and intermediate frequency Transformers (tuned to 392 K.C.) are adjusted and sealed at the factory. These adjustments should on no account be touched or seals broken unless a calibrated oscillator and indicating instrument are available, whereby such adjustments can be successfully carried out.

Refer to the sketch in this manual for details of the trimming condenser, padder, and coil positions.

TO ALIGN I.F. TRANSFORMERS:

Set generator to 392 K.C. and connect to grid of K.K.2. Align the three I.F. transformers. Sensitivity should be about 80 micro volts. (NOTE: Wave-change knob is tobe set in the centre position; that is, to the broadcast position, for these adjustments.)

BROADCAST BAND:

Feed in a 600 K.C. signal to the aerial terminal of the set and tune this in. Then, while slightly rocking the gang to and fro, adjust the padding condenser for maximum signal. (This is not the final adjustment).

Turn the gang right out, and set the generator on 1510 K.C. Adjust the oscillator broadcast trimmer until this signal is received. Then set the generator to 1400 K.C. and tune it in. Without touching the oscillator trimmer at all, peak the R.F. and aerial trimmers. Then go to 600 K.C. and readjust the padding condenser if necessary.