TECHNICAL SERVICE INFORMATION

ISSUED BY

KRIESLER AUSTRALASIA PTY. LTD.

43 ALICE ST. NEWTOWN. Phone: LA 0400

41-20 TRANSISTOR BATTERY PORTABLE RECEIVER

DESCRIPTION. Model 41-20 is a battery-operated portable receiver employing 7 transistors and 2 germanium diodes. The cabinet is of moulded polystyrene.

DIMENSIONS. 10" x 7" x 4½".

WEIGHT. Packed...7½ lbs. Nett...6¾ lbs.

BATTERY. Eveready type 276P (9 volt) or equivalent.

AERIAL. An inbuilt ferrite-rod aerial is provided.

EXTERNAL AERIAL AND EARTH may be connected if necessary to the terminals marked "A" and "E" on the back of the cabinet.

TO REMOVE CHASSIS FROM CABINET, remove the two screws securing the back cover and remove the cover. Disconnect and remove battery. Close the tuning gang and remove the four chassis mounting screws as shown on figure 3. Raise the tuning gang side of the chassis first and lift chassis clear of cabinet to the extent of the speaker leads.

TUNING RANGE. 535-1650 Kc/s.

INTERMEDIATE FREQUENCY. 455 Kc/s.

BATTERY CONSUMPTION. 13 Ma. No signal current.
80 Ma. For 350 mW. output into loudspeaker voice coil.

TRANSISTOR COMPLEMENT.
Mixer-oscillator.....0C44.
1st. I.F. Amplifier...0C45.
2nd. I.F. Amplifier...0C45.
1st. A.F. Amplifier...0C71.
2nd. A.F. Amplifier...0C71.
Class "B" output.....2x0C72.

DIODES.
A.G.C.....0A70
Detector.....0A79

Transistor element connections.

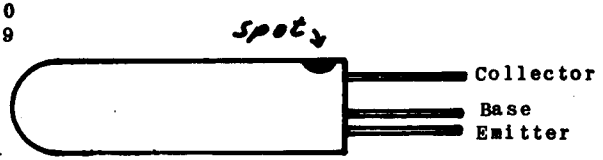


Fig. 1

SPECIAL ALIGNMENT INSTRUCTIONS.

Several additions to the conventional alignment procedure, as described in the series "C" Radio Handbook, are necessary.

Firstly, the pre-set potentiometer in the base bias circuit of the output transistors (2x0C72) should be set to give a standing bias of 3 Ma. ± ½ Ma. using an accurate milliameter. The pre-set should then be mechanically sealed with a suitable glue or lacquer.

I.F. alignment is best accomplished by using sweep techniques to allow the desired bandpass characteristics to be obtained.

To align the I.F. amplifiers with a spot generator, connect the alignment signal to the base of Tr. 3 (Test point 3) through a 0.1uF. coupling capacitor. Adjust the secondary core of the third I.F. transformer for maximum output with the full primary shunted by a 27K damping resistor. Transfer the damping resistor to the full secondary and adjust the primary core for maximum output. The desired response curve without damping is shown in Figure 2, the peak separation being approximately 15Kc/s.

Replace the damping resistor on the primary of I.F.T. 3 and transfer the signal generator output to the base of Tr. 1 (Test point 1) through a 0.1uF. coupling capacitor. Align I.F.T. 1 and 2 in the conventional manner. Remove the damping resistor on I.F.T. 3.

For R.F. alignment, connect the signal generator to the external aerial terminal

Miscellaneous (Continued)

L 3	Compensating Coil.	Part No. 34-2
IFT, 1,2 & 3	IF Transformers	Part Nos. 24-26, 24-27 & 24-28
T 1	Audio Coupling Transformer.	Part No. Rola. DR 26
T 2	Audio Driver Transformer	Part No. Rola. DR 19
T 3	Speaker Transformer	Part No, Rola. TR 6
S 1	On R 17 a & b.	

TRANSISTOR SERVICING TECHNIQUE.

Use a high resistance voltmeter when servicing transistor receivers. Voltage measurements shown on the 41-20 circuit are measured with a 20KΩ/volt meter.

When soldering transistor leads, employ a heat shunt between the body of the transistor and the soldering iron. A hot, clean, iron is recommended so as to keep the soldering time as short as possible. The iron should be checked periodically for any tip of ground voltage. A sufficiently high voltage at this point could damage a transistor during a soldering operation. The soldering iron should be well earthed and the receiver chassis either earthed or electrically isolated from any test equipment as the "Earthy" side of some test equipment may be above ground potential.

I.F. Response Curves.

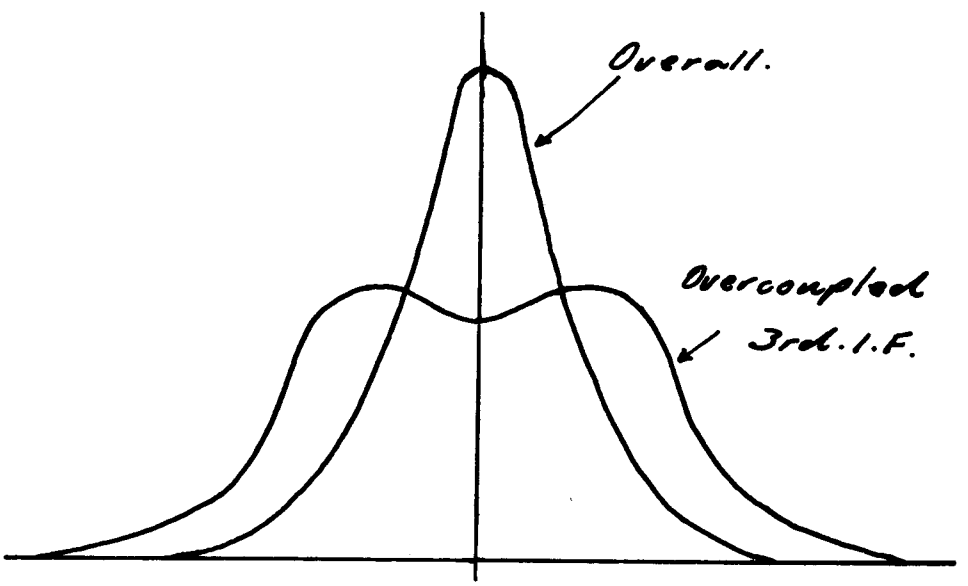


Fig. 2.

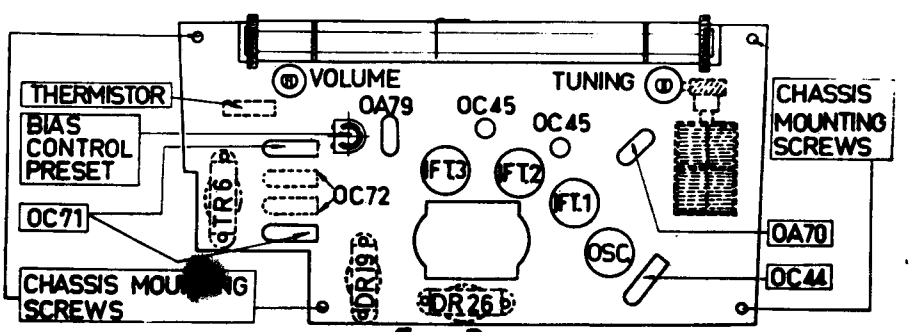


Fig. 3.

through a standard I.R.E.B/C dummy aerial. Align in the conventional manner as described for portable receivers employing a ferrite-rod aerial.

The C.R.O. should be connected to the detector diode cathode. (Test point 4)

N.B. Model 41-20 employs PNP type transistors, hence the positive terminal of the battery is connected to the chassis.

PARTS LIST

Capacitors.

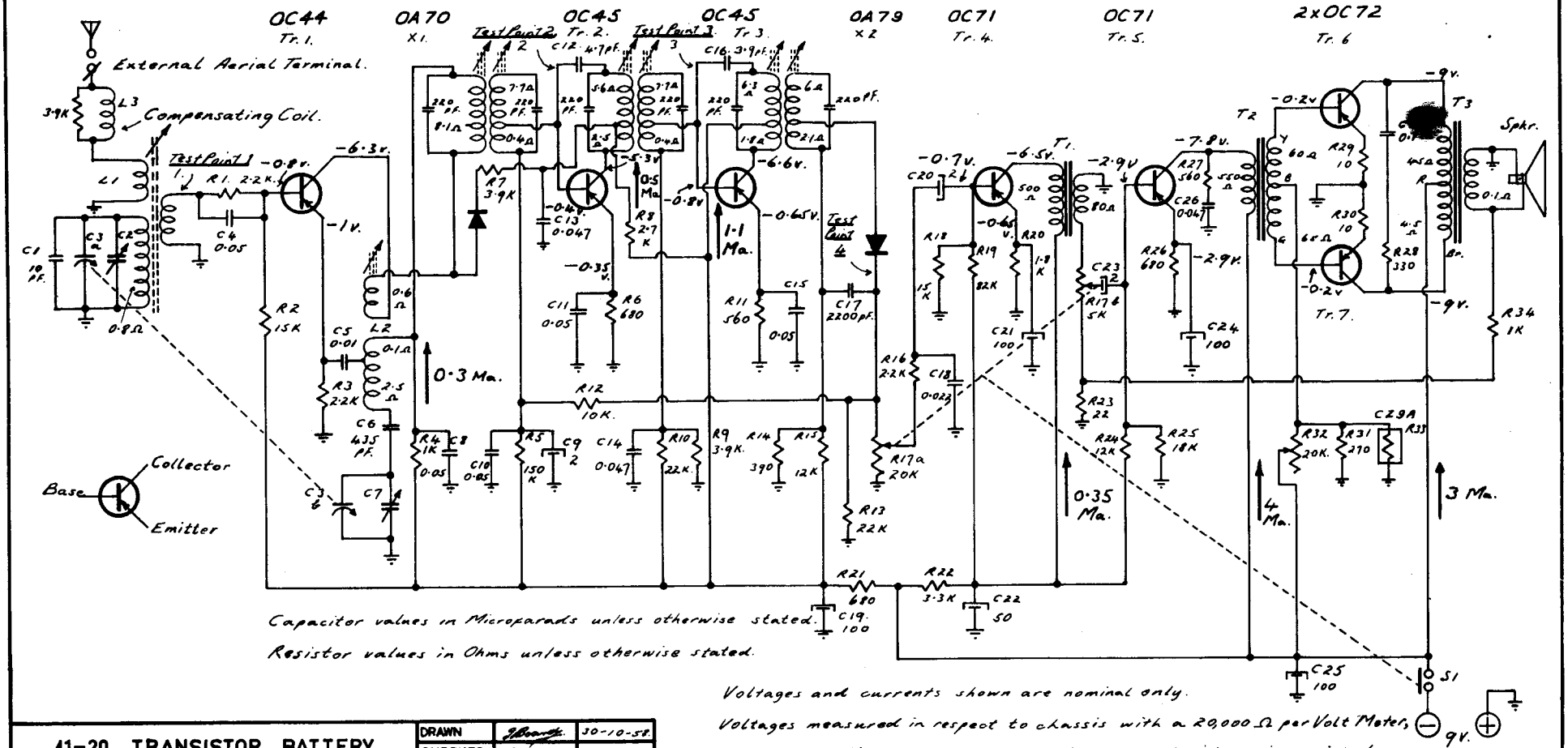
C1	10 pF. MS Mica.	± 20 %
C2	5-50 pF. Hy-Q Trimmer	
C3ab	2 Gang Tuning Condenser AWA Type 21209	
C4	0.05 uF. 100VW. Style D Disc Ceramic	±100 % - 0 %
C5	0.01 uF. 100VW. Styroseal	± 10 %
C6	435 pF. SS Mica.	± 2½ %
C7	3-30 pF. PHILIPS Wire Trimmer	
C8	0.05 uF. 100VW. Style D Disc Ceramic	+100 % - 0 %
C9	2 uF. 6 VW DUCON sub-miniature Electrolytic	+100 % - 20 %
C10	0.05 uF. 100VW. Style D Disc Ceramic.	+100 % - 0 %
C11	0.05 uF. " " " " "	"
C12	4.7 pF. 500VW. Style A Tubular Ceramic	± ½ pF.
C13	0.047uF. 100VW. Ducon TPB 108.	± 20 %
C14	0.047uF. " " " " "	"
C15	0.05uF. " " " " "	"
C16	3.9 pF. 500VW. Style A Tubular Ceramic	± ½ pF.
C17	2200pF. 500VW. Style B Tubular Ceramic	+100 % - 0 %
C18	0.022 uF. 100VW. Style D Disc Ceramic	"
C19	100 uF. 3VW. PHILIPS sub-miniature Electrolytic	+100 % - 20 %
C20	2 uF. 6VW DUCON sub-miniature Electrolytic	"
C21	100uF. 3VW PHILIPS sub-miniature Electrolytic	"
C22	50 uF. 12.5VW " " "	"
C23	2 uF. 6VW DUCON " "	"
C24	100uF. 3VW PHILIPS " "	"
C25	100uF. 12.5VW " " "	"
C26	0.047uF. 100VW DUCON TPB 108 Paper	± 20 %
C27	0.1 uF 100VW DUCON TPB 112 Paper	"

Resistors

R1	2.2K	½W	±10 %	R18	15K	½W	±10 %
R2	15K	"	"	R19	82K	"	"
R3	2.2K	"	"	R20	1.8K	"	"
R4	1K	"	"	R21	680 Ohms	"	"
R5	150K	"	"	R22	3.3K	"	"
R6	680 Ohms	"	"	R23	22 Ohms	"	"
R7	3.9K	"	"	R24	12K	"	"
R8	2.7K	"	"	R25	18K	"	"
R9	3.9K	"	"	R26	680 Ohms	"	"
R10	22K	"	"	R27	560 Ohms	"	"
R11	560 Ohms	½W	±10 %	R28	330 Ohms	"	"
R12	10K	"	"	R29	10 Ohms	"	"
R13	22K	"	"	R30	10 Ohms	"	"
R14	390 Ohms	"	"	R31	270 Ohms	"	"
R15	12K	"	"	R32	20K Potentiometer. Part No. 32-61-2		
R16	2.2K	"	"	R33	CZ9A Thermistor.		
R17 a	20K) Dual Potentiometer			R34	1K	½W	±10 %
R17 b	5K) Kriesler Part No. 32-61						

Miscellaneous.

Spkr.	Rola 5F 3.5 Ohm V.C. F87 Cone.
L 1	Ferrite Rod Aerial assembly. Part No. 14-42
L 2	Oscillator Coil Part No. 14-43



41–20 TRANSISTOR BATTERY PORTABLE RECEIVER				
	DRAWN		30-10-58.	
	CHECKED		30-10-58.	
	APPROVED	P. Fowler	30-10-58.	ISSUE 1