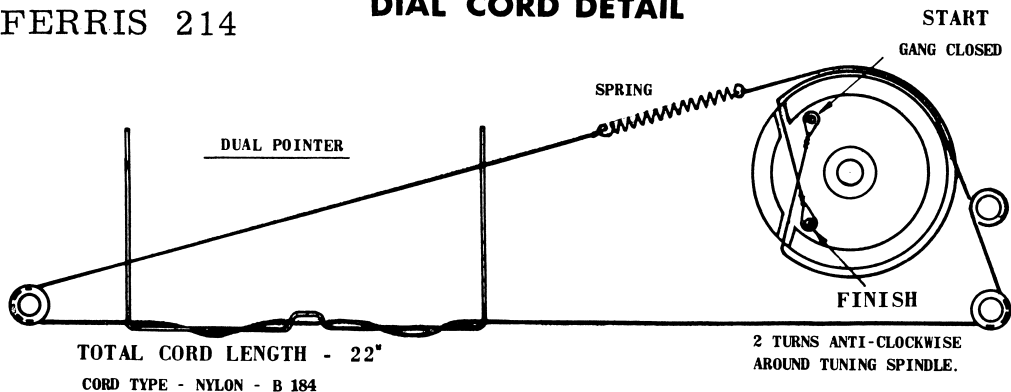


DIAL CORD REPLACEMENT

Remove canopy and dial scale as previously described. Re-string dial in accordance with diagram. The dual pointer is attached by wrapping the dial cord around the crank formation along its carriage section. Calibration is achieved by sliding the pointer along the cord as required. The pointer can be lifted to vertical position to allow easy assembly of the dial backplate and scale. Ensure that the felt friction wads are correctly positioned against the edge of the dial scale before replacing the canopy.

FERRIS 214

DIAL CORD DETAIL



ALIGNMENT PROCEDURE

For all alignment operations, connect the low side of the signal generator to the frame or case and keep the generator output as low as possible to avoid AVC action. Set volume control at maximum.

NB - Use proper alignment tool for making adjustments. Cores are easily broken by improper handling, making replacement of entire coil or transformer necessary. Set aerial switch to "DOWN" position.

STEP	Connect Sig. Gen. to	Tune Sig. Gen. to	Tune Receiver to	Adj. for Max. Output
1	Base of 2N1639 via .1 uf capacitor	455 KC/S	Gang fully open " " "	IF3 (one slug)
2				IF2 (all slugs on
3				IF 1 outer peaks.)
4	Repeat above adjustments until no further increase can be obtained.			
5	Aerial socket via dummy aerial	525 KC/S	Gang fully closed	Osc.coil slug (L6)
6		1620 KC/S	Gang fully open	Osc.Trimmer TR4
7	Repeat steps 5 and 6 until band limits are 525 - 1620 KC/S			
8	Aerial socket via dummy aerial	550 KC/f1	550 KC/S	* RF Coil slug (L5)
9		1400 KC/f1	1400 KC/S	* Aer. coil slug (L2) TR1 and TR3

* Rock gang back and forth through signal.
Repeat steps 8 and 9 till no further increase can be obtained.
Check sensitivity at 1400, 900 and 550 KC/f1.

Ferrite Rod Alignment: Place set in normal operating position with canopy removed.
Set aerial switch to "UP" position.

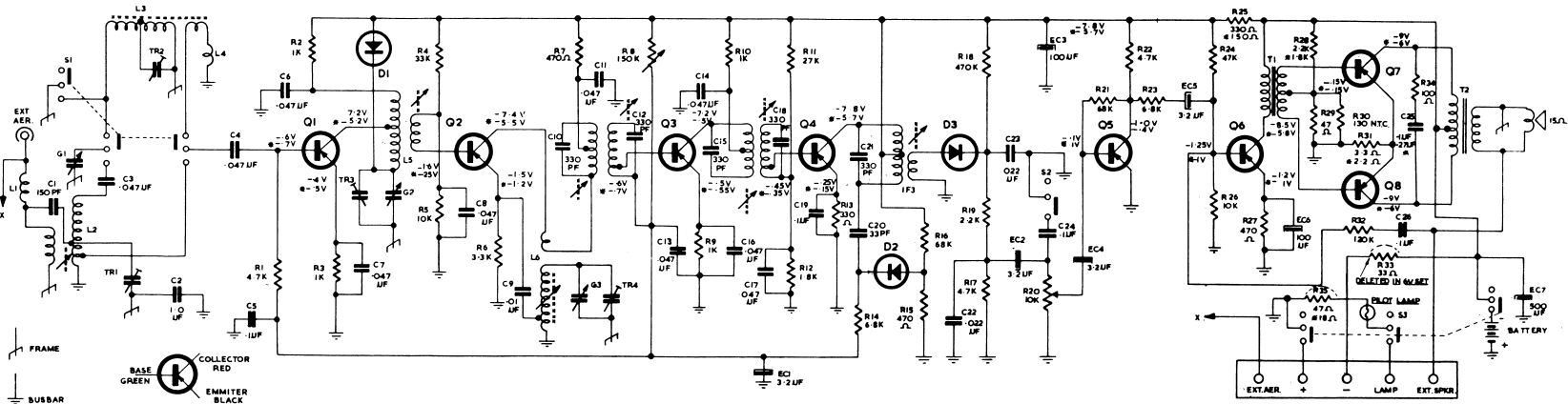
STEP	Connect Sig. Gen. to	Tune Sig. Gen. to	Tune Receiver to	Adj. for Max. Output
1	To aerial socket via dummy aerial (see note)	1400 KC/S	1400 KC/S	TR2
2	"	550 KC/S	550 KC/S	Slide windings (L3) along Ferrite slab.

Repeat 1 and 2 until no further increase can be obtained.

NOTE - When aligning the rod aerial as described, the output from the signal generator needs to be in the order of 0.3 - 1 mv, as it is only loosely coupled to the set via the capacity of the aerial switch.

FERRIS 214

FERRIS ALL TRANSISTOR PORTABLE CAR RADIO MODEL 214



R1	- 4.7K	10 ⁴	RESISTOR
R2	- 1K	10 ⁴	RESISTOR
R3	- 1K	10 ⁴	RESISTOR
R4	- 33K	10 ⁴	RESISTOR
R5	- 10K	10 ⁴	RESISTOR
R6	- 33K	10 ⁴	RESISTOR
R7	- 470 Ω	10 ⁴	RESISTOR
R8	- 150K	VARIABLE	RESISTOR
R9	- 1K	10 ⁴	RESISTOR
R0	- 1K	10 ⁴	RESISTOR
R11	- 27K	10 ⁴	RESISTOR
R12	- 18K	10 ⁴	RESISTOR
R13	- 330 Ω	10 ⁴	RESISTOR
R14	- 6.8K	10 ⁴	RESISTOR
R15	- 470 Ω	10 ⁴	RESISTOR
R16	- 88K	10 ⁴	RESISTOR
R17	- 4.7K	10 ⁴	RESISTOR
R18	- 470K	10 ⁴	RESISTOR
R19	- 2.2K	10 ⁴	RESISTOR
R20	- 10K	POTENTIOMETER	
R21	- 88K	10 ⁴	RESISTOR
R22	- 4.7K	10 ⁴	RESISTOR
R23	- 6.8K	10 ⁴	RESISTOR
R24	- 47K	10 ⁴	RESISTOR

R25	- 330 Ω	10 ⁴	RESISTOR
R26	- 10K	10 ⁴	RESISTOR
R27	- 470 Ω	10 ⁴	RESISTOR
R28	- 2.2K	10 ⁴	RESISTOR
R29	- 47 Ω	10 ⁴	RESISTOR
R30	- 130 Ω	NTC	RESISTOR
R31	- 3.3 Ω	10 ⁴	RESISTOR
R32	- 120K	10 ⁴	RESISTOR
R33	- 33 Ω	10 ⁴	RESISTOR
R34	- 100 Ω	NTC	RESISTOR
R35	- 4.7 Ω	10 ⁴	RESISTOR
R36	- 150PF	125V	STYREX CAP
C2	- 10UF	200V	PAPER CAPACITOR
C3	- 0.47UF	25V	CAPACITOR
C4	- 0.47UF	25V	CAPACITOR
C5	- 1UF	25V	CAPACITOR
C6	- 0.47UF	25V	CAPACITOR
C7	- 0.47UF	25V	CAPACITOR
C8	- 0.47UF	25V	CAPACITOR
C9	- 0.1UF	125V	POLYESTER CAP
C10	- 330PF	125V	CAPACITOR
C12	- 330PF	125V	CAPACITOR
C13	- 0.47UF	25V	CAPACITOR

C14	- 0.47UF	25V	CAPACITOR
C15	- 330PF	125V	CAPACITOR
C16	- 0.47UF	25V	CAPACITOR
C17	- 0.47UF	25V	CAPACITOR
C18	- 330PF	125V	CAPACITOR
C19	- 1UF	25V	CAPACITOR
C20	- 33PF	125V	CAPACITOR
C21	- 330PF	125V	CAPACITOR
C22	- 0.22UF	25V	CAPACITOR
C23	- 0.22UF	25V	CAPACITOR
C24	- 1UF	25V	CAPACITOR
C25	- 0.22UF	25V	CAPACITOR
C26	- 1UF	25V	CAPACITOR

EC1	- 2-2UF	6V	ELECTRO
EC5	- 1UF	25V	ELECTRO
EC3	- 100UF	16V	ELECTRO
EC4	- 3-2UF	6V	ELECTRO
EC5	- 3-2UF	6V	ELECTRO
EC6	- 100UF	4V	ELECTRO
EC7	- 500UF	16V	ELECTRO

G1	- 3 GANG TUNING CAPACITOR
G2	- 200 X 200PF X 96 PF
G3	- OSCILLATOR SECTION
TR1	- 2 PLATE TRIMMER
TR2	- 2 PLATE TRIMMER
TR3	- 2 PLATE TRIMMER
TR4	- 3-30PF AIR TRIMMER

S1	- 3 POLE 2 POSITION SWITCH
S2	- 1 POLE 2 POSITION SWITCH
S3	- 3 POLE 2 POSITION SWITCH
L1	- AERIAL CHOKE TYPE 6108
L2	- AERIAL COIL TYPE 7117
L3	- ROD AERIAL COIL TYPE 710/1
L4	- FERRITE BEAD CHOKE TYPE 6109
L5	- RF COIL TYPE 7203
L6	- OSC COIL TYPE 7323

PILOT LAMP	
6V	- 6W
12V	- 2W

T1	- DRIVER TRANSFORMER JDR72
T2	- OUTPUT TRANSFORMER TYPE 4323
†T3	- 455 KC TRANSFORMER TYPE 9123
†T2	- 455 KC TRANSFORMER TYPE 9122
†T3	- 455 KC TRANSFORMER TYPE 9121

BATTERY	- 9 VOLT TYPE 2761
BATTERY	- 6 VOLT TYPE 2582

Q1	- 2N1637 2N374 AF116
Q2	- 2N1639 2N374 AF116
Q3	- 2N1638 2N373 AF117
Q4	- 2N1638 2N373 AF117
Q5	- 2N406 AC 125
Q6	- 2N175 AC 125 2N408
Q7	- AC128 AS 128
Q8	- AC128 AS 128

D1	- 0A90
D2	- 1N60A
D3	

† INDICATES VALUE FOR 6 VOLT MODEL

BAND COVERAGE 525 - 1620 KC/S
IF FREQUENCY 455 KC/S

TOTAL BATTERY CURRENT 13 MA FOR 9V BATTERY
COLLECTOR CURRENT OF OMP STAGE FOR ZERO SIG: 4 MA
TOTAL BATTERY CURRENT 13 MA FOR 6V BATTERY
COLLECTOR CURRENT OF OMP STAGE * 4.5 MA

ALL RESISTORS 1/2 WATT UNLESS
OTHERWISE STATED.

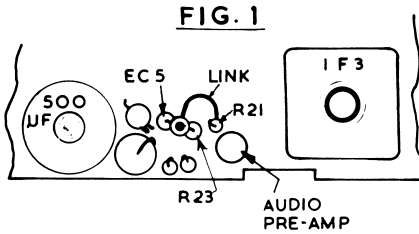
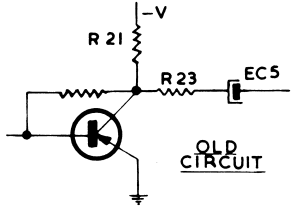
NOTE: ALL VOLTAGES CHECKED WITH
40.000 0RV. METER AT ZERO SIGNAL INPUT

**DO NOT OPERATE SET WITHOUT
SPEAKER CONNECTED.**

MODIFICATION — MODEL 214 PORTABLE CAR RADIO.

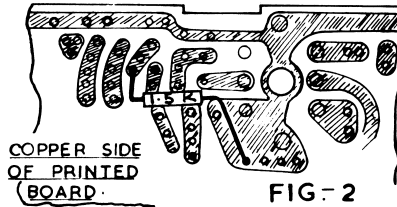
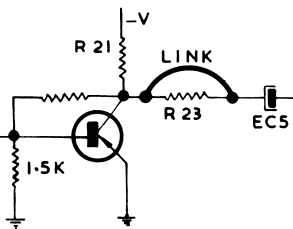
AUDIO PRE-AMP MODIFICATIONS TO OBTAIN DISTORTION FREE OPERATION AT VERY HIGH TEMPERATURES.

MODIFICATION FOR SETS MANUFACTURED PRIOR TO No. 8200

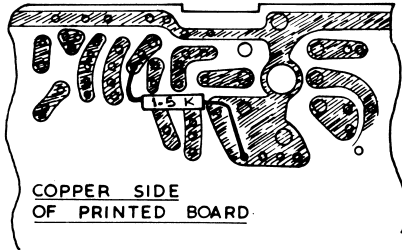
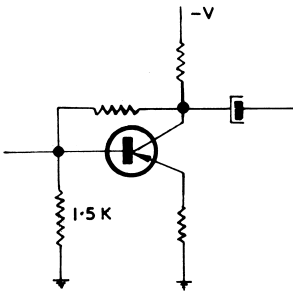


— NOTE —

- (1) CONNECT A LINK FROM JUNCTION OF R23 & EC5 TO R21. — FIG. 1.
- (2) CONNECT A 1.5 K RESISTOR FROM BASE OF AUDIO PRE-AMP TRANSISTOR TO POSITIVE RAIL — FIG. 2.



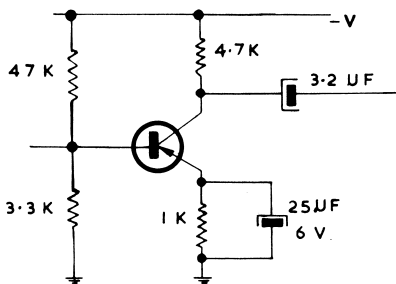
MODIFICATION FOR SETS MANUFACTURED FROM No 8201 TO 10600



— NOTE —

- (1) CONNECT A 1.5 K RESISTOR FROM BASE OF AUDIO PRE-AMP TRANSISTOR TO POSITIVE RAIL — FIG. 3.
TO CARRY OUT THIS MODIFICATION, REMOVE REAR LID ONLY.

ALL SETS MANUFACTURED FROM No 10,601 DO NOT REQUIRE MODIFICATION.



FERRIS 214

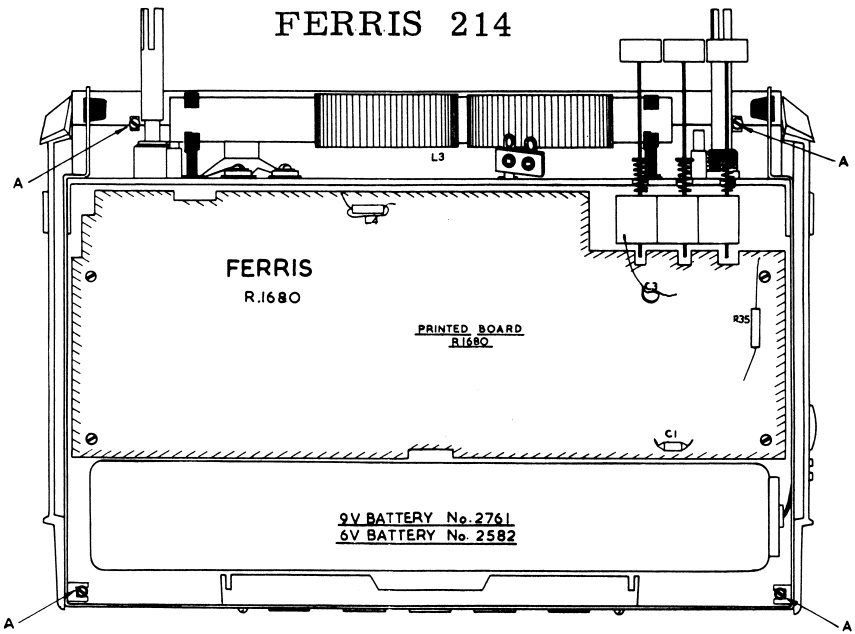


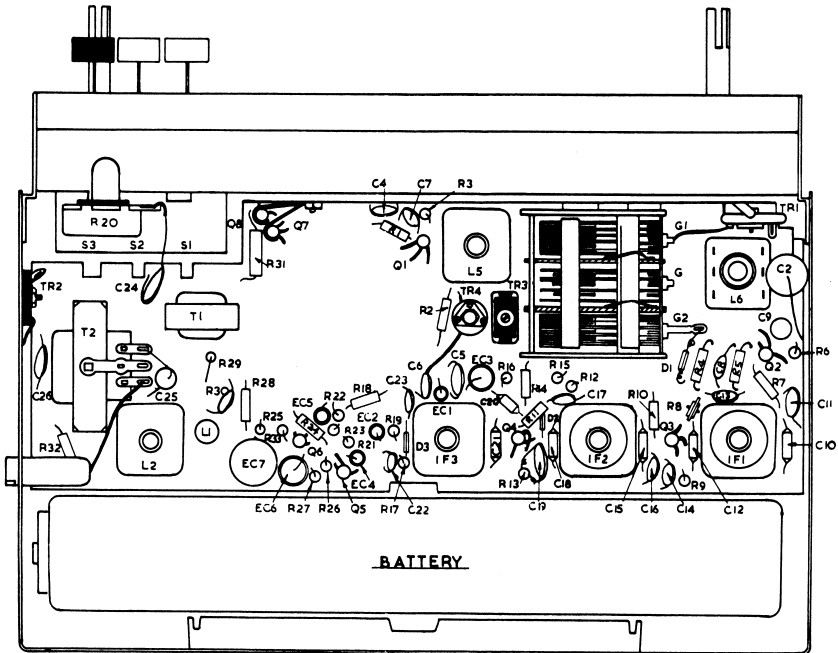
FIG. 4.

FERRIS 214

F20

FIG. 4

REAR VIEW OF SET



FRONT VIEW OF SET