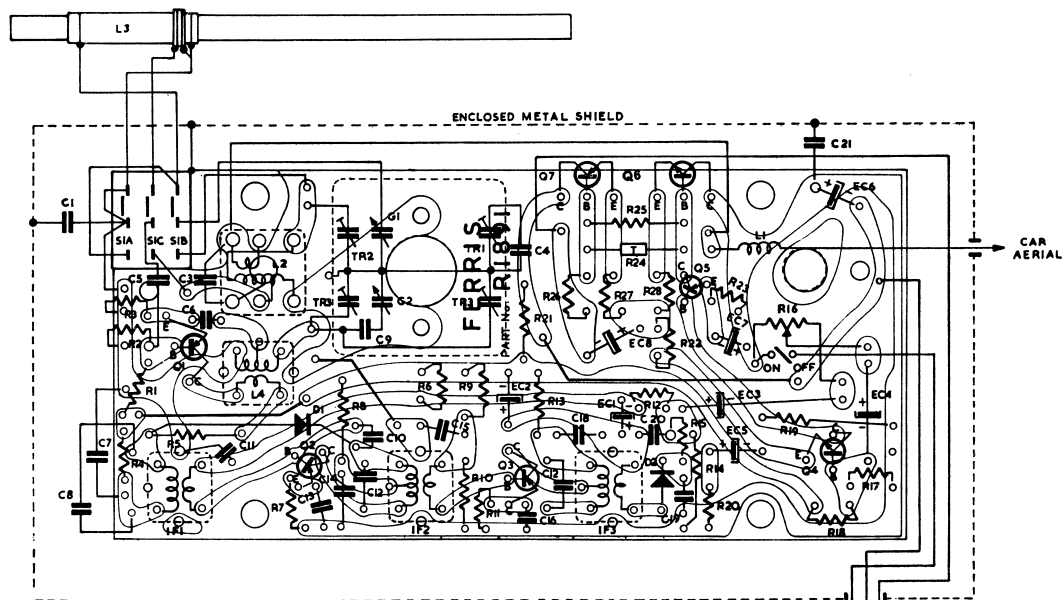
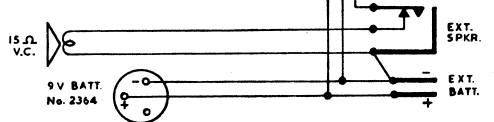


# CADET PORTABLE CAR RADIO MODEL 234



COMPONENT LAYOUT M234  
VIEWED FROM PRINTED WIRING SIDE OF BOARD.



## CONTROLS

**Tuning** — by adjustable handspan wheel.

**Volume and on-off** are combined.

**Aerial switch** — selects ferrite rod aerial for portable use or separate high gain aerial coil for correct matching to a standard top cowl or gutter aerial.

## EXTERNAL CONNECTIONS

**Aerial socket** — for connection of a Ferris car radio or wire aerial.

**Extension speaker** — for connection of an external speaker (15Ω voice coil) or miniature magnetic earpiece. The set's own speaker is automatically silenced when either of the above items is connected.

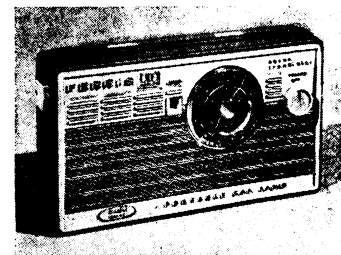
**External battery** — for connection of Ferris 12V car battery adaptor Type M234 BA or separate 9V dry battery, which supplements the set's internal battery. This is beneficial where prolonged use of the set in the home is contemplated.

**Dial Scale and Handspan Wheel** — The M234 is supplied with six dial scales, one for each State. To change the scale, use a tube spanner to remove the chromium hexagon stud and pull off the handspan wheel. The scale can easily be removed and replaced.

## ROUTINE SERVICE ADJUSTMENTS

The condition of the battery can be quickly checked by switching the set on and connecting a voltmeter across the contacts as indicated in Fig. 1. If the voltmeter indicates 5V or less, then the battery should be replaced.

**Do not operate set without speaker connected.**





# SERVICE MANUAL

CADET PORTABLE CAR RADIO MODEL 234

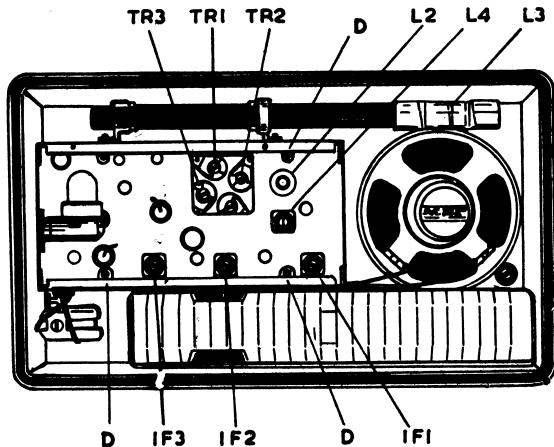


FIG. 2.

## BATTERY REPLACEMENT

Remove back by releasing the single holding screw. After fitting a new battery ensure an even fit of the moulded back before tightening the holding screw.

To gain access to receiver components, remove moulded back as previously described. Refer to Fig. 1 — remove screws marked "B", then with the aid of a screwdriver engage the slot "C" and lever off the rear metal lid. Note that the complete circuit alignment can be carried out when these lids have been removed.

## REMOVING "SHIELDED CHASSIS" FROM CASE

1. Remove handspan wheel.
2. Remove volume control knob (knob pulls off).
3. Remove case back and rear metal lid.
4. Remove three screws marked "D" in Fig. 2.
5. Shielded chassis can now be swung clear of moulded case.
6. Lever off front metal lid. Both sides of the printed circuit board are now accessible, thus permitting replacement of any major component.

## DC RESISTANCE OF WINDINGS

		in ohms
Aerial filter choke (L1)		5
Aerial coil primary	(L2)	25
Aerial coil secondary		7
Ferrite rod aerial	(L3)	1
Oscillator coil primary	(L4)	0.25
Oscillator coil secondary total		2
IF1 primary		2
IF1 secondary		0.3
IF2 primary total		2
IF2 secondary		0.3
IF3 primary total		2
IF3 secondary		1

## ALIGNMENT PROCEDURE

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

NB. Use the correct alignment tool for making adjustments. Cores are easily broken by improper handling, thus making replacement of entire coil or transformer necessary. Set aerial switch to "C".

Note: When aligning the rod aerial as described, the output from the signal generator will need 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.

Step	Connect sig. generator to	Tune sig. generator to	Tune receiver to	Adjust for max. output
1.	Base of 2N1639		Gang fully	IF3 Peak cores
2.	converter via	455 kc/s	open	IF2 toward top
3.	0.1 $\mu$ F capacitor			IF1 of can
4.	Repeat above adjustments until no further increase can be obtained.			
5.	Aerial socket via standard	525 kc/s	Gang fully closed	Osc. coil core L4
6.	dummy aerial	1760 kc/s	Gang fully open	Osc. trimmer TR3
7.	Repeat steps 5 and 6 until band limits are 525-1760 kc/s.			
8.	Aerial socket via standard	600 kc/s	600 kc/s	Aerial coil core L2
9.	dummy aerial	1500 kc/s	1500 kc/s	Aerial trimmer TR2
Repeat steps 8 and 9 until no further increase can be obtained. Check sensitivity at 1500, 1000 and 600 kc/s for satisfactory performance.				
<b>Ferrite rod alignment:</b> Set aerial switch to "P".				
1.	Aerial socket via dummy	1500 kc/s	1500 kc/s	Rod aerial trimmer TR1
2.	aerial. See note.	600 kc/s	600 kc/s	Slide winding L3 along ferrite rod
Repeat steps 1 and 2 until no further increase can be obtained.				