MANUAL No. ETM 41
ISSUE 2

SMITHS *Radiomobile*

OWNERS MANUAL

MANUALLY TUNED MODELS FOR EITHER
MEDIUM WAVE ONLY
OR
MEDIUM AND LONG WAVE RECEPTION

MODEL 20X/12 (MEDIUM & LONG WAVE) (12v.)
20X/6 ,, ,, ,, (6v.)
MODEL 22X/12 (MEDIUM WAVE ONLY) (12v.)
22X/6 ,, ,, ,, (6v.)

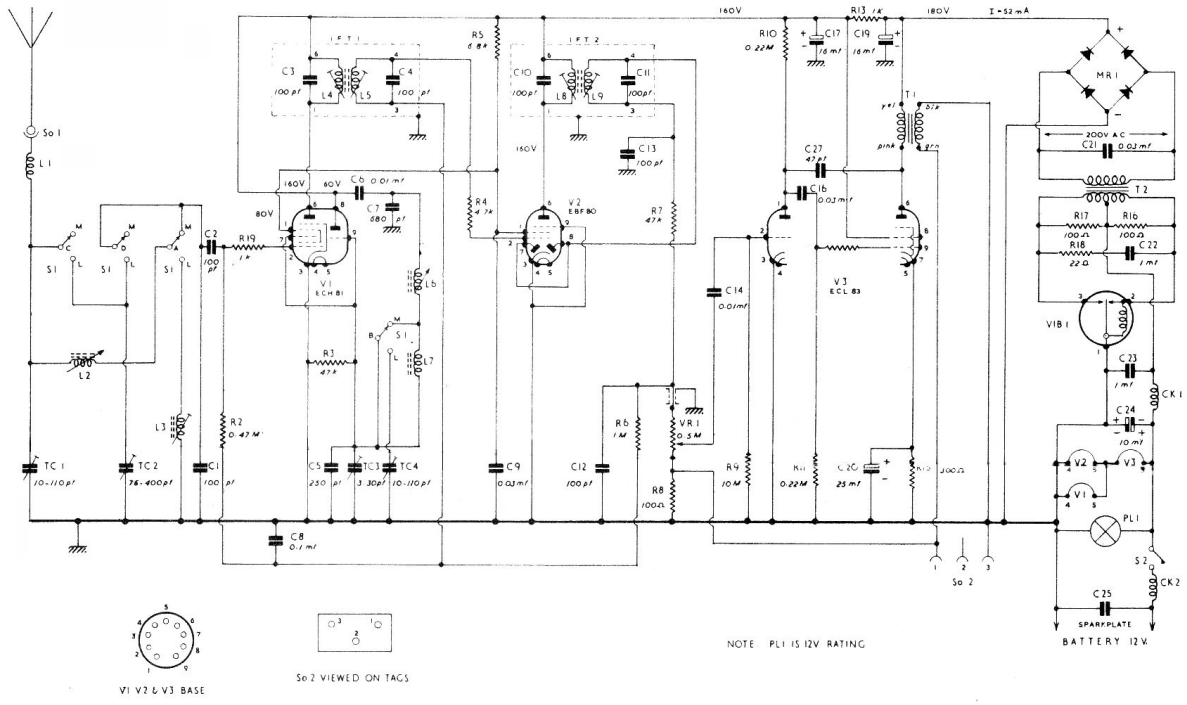
Owners Service Data for Medium and Long Wave Manually Tuned Car Radio

Sufficient information is contained in this manual to enable a competent radio mechanic to effect all normal repairs to these sets.

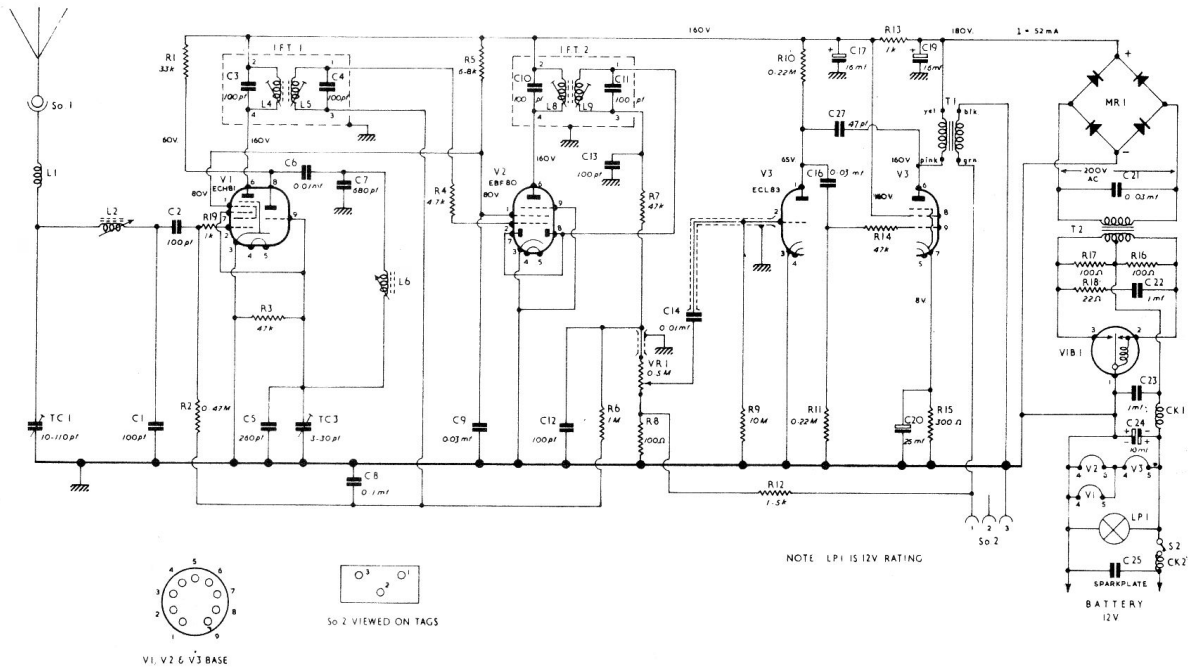
RECEIVER TYPES

20X/12	12 v. operation on Medium and Long Waves
20X/6	6 v. operation on Medium and Long Waves
22X/12	12 v. operation on Medium Waves only
22X/6	6 v. operation on Medium Waves only

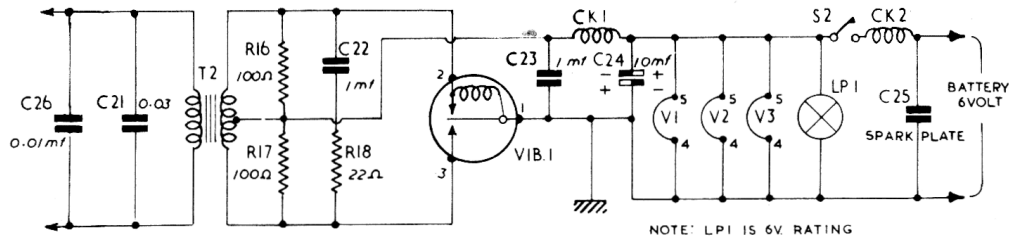
These receivers operate from either positive or negative earthed supplies.



MEDIUM AND LONG WAVE RECEIVER MODEL 20X/12



MEDIUM WAVE RECEIVER MODEL 22X/12



HEATER CIRCUIT FOR 6 VOLT MODELS.

NOTE : In earlier models of this receiver a valve type H.N.309 was employed in the V.3 position. This has now been superseded by an ECL. 83.

IMPORTANT : An H.N.309 (12 volt) employed in a 12 volt receiver *must not* be replaced by an ECL.83 (6 volt) without the necessary circuit modifications being carried out.

VOLTAGE READINGS

Readings were taken with a battery input of 14 volts (12 volt models) and 7 volts (6 volt models).

All voltages were measured with a meter possessing an internal resistance of 500 ohms per volt (i.e., Avometer Model 7). A variation of $\pm$ 15% should not be exceeded.

TOTAL BATTERY CONSUMPTION

12 v. Operation (14 volt supply) 2.5 AMPS
6 v. Operation (7 volt supply) 5.0 AMPS

ALIGNMENT

During alignment the input to the receiver must be progressively reduced, such that the output does not exceed 0.8 volts.

I.F. ALIGNMENT

The power unit sub-chassis must be detached from case (5 PK screws on underside) for access to cores of L5 and L9, access to L3, L4 and L8 being obtained through holes in front plate assembly.

Set Volume control to maximum, Wavechange Switch to Medium Wave and set tuning carriage so that cores are fully withdrawn from their coils.

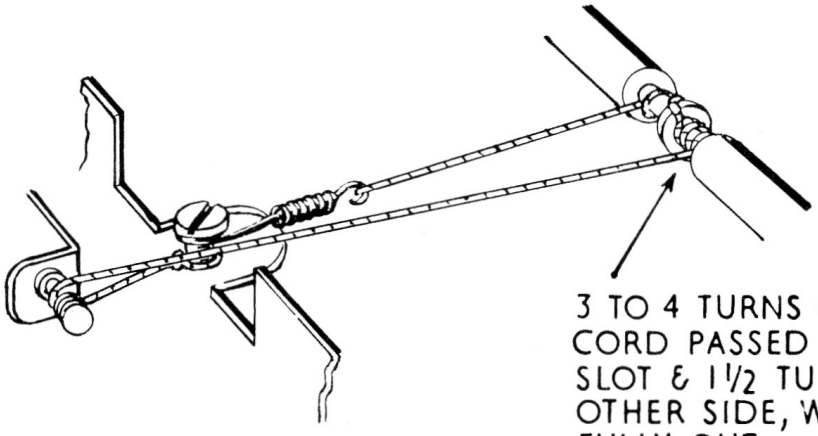
Apply signal at 470 K/cs modulated 30% at 400 cycles, between the grid of VI (through a 0.1 mfd. capacitor) and chassis. Align cores of L9, L8, L5 and L4 in that order, for maximum output. Repeat until no further improvement results.

I.F. SENSITIVITY

With an input of 87 db below 1 volt (40 uV) the output must be not less than 0·8 V.

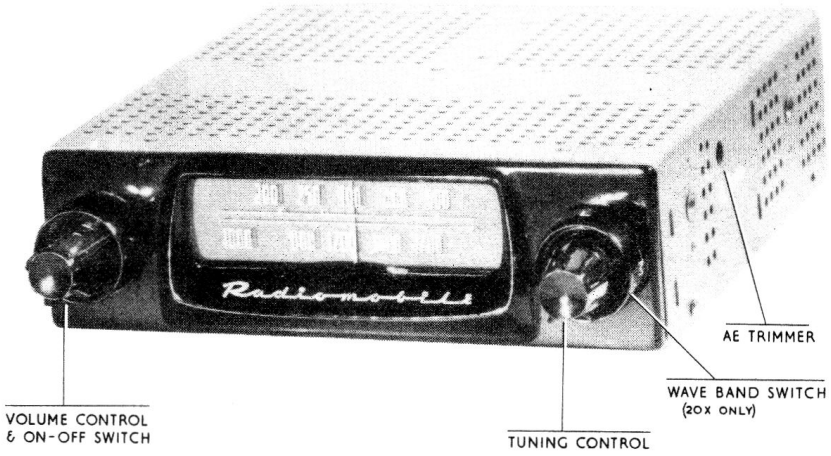
R.F. ALIGNMENT

The requisite signal generator pad comprising a 22 pfd. series and a 47 pfd. shunt condenser, must be used.



CORD & PULLEY ARRANGEMENT
FOR TUNING CARRIAGE

OPERATION



GENERAL VIEW OF UNIT

THE COMBINED VOLUME CONTROL AND ON/OFF SWITCH switches on the receiver when turned clockwise, and progressive rotation of this control increases the volume. When turned fully anti-clockwise, the receiver is turned off.

THE MANUAL TUNING CONTROL provides variable station selection.

THE WAVEBAND SWITCH (MODEL 20X ONLY) is concentric with the tuning control, and its two positions are marked M and L for instant identification.

THE TUNING SCALE is calibrated in metres for the 20X and in metres and Mcs/10 for the 22X.

M.W. ALIGNMENT

Wave-Change switch to M.W., and tuning carriage fully withdrawn.

OPERATION	FREQ. Kc/s	CARRIAGE POSITION	ADJUST FOR MAX. OUTPUT
1	1620	Fully out	TC3 and TC1
2	520	Fully in	L6 Core — See
3	1100	Tune to Frequency	L2 Core — Fig. 5
4	550		L2 Ferrox rod where fitted

Repeat operations 3 and 4 for optimum output. Seal rod in position with wax.

M.W. SENSITIVITY

Input 15 uV modulated 30% at 400 cycles, output to be not less than 0·8 V.

L.W. ALIGNMENT

Wave-Change switch to L.W. position, tuning carriage fully withdrawn.

OPERATION	FREQ. Kc/s	CARRIAGE POSITION	ADJUST FOR MAX. OUTPUT
1	300	Fully Out	TC4
2	180	Tune In	TC2 — See Fig. 5
3	300	Fully Out	L3

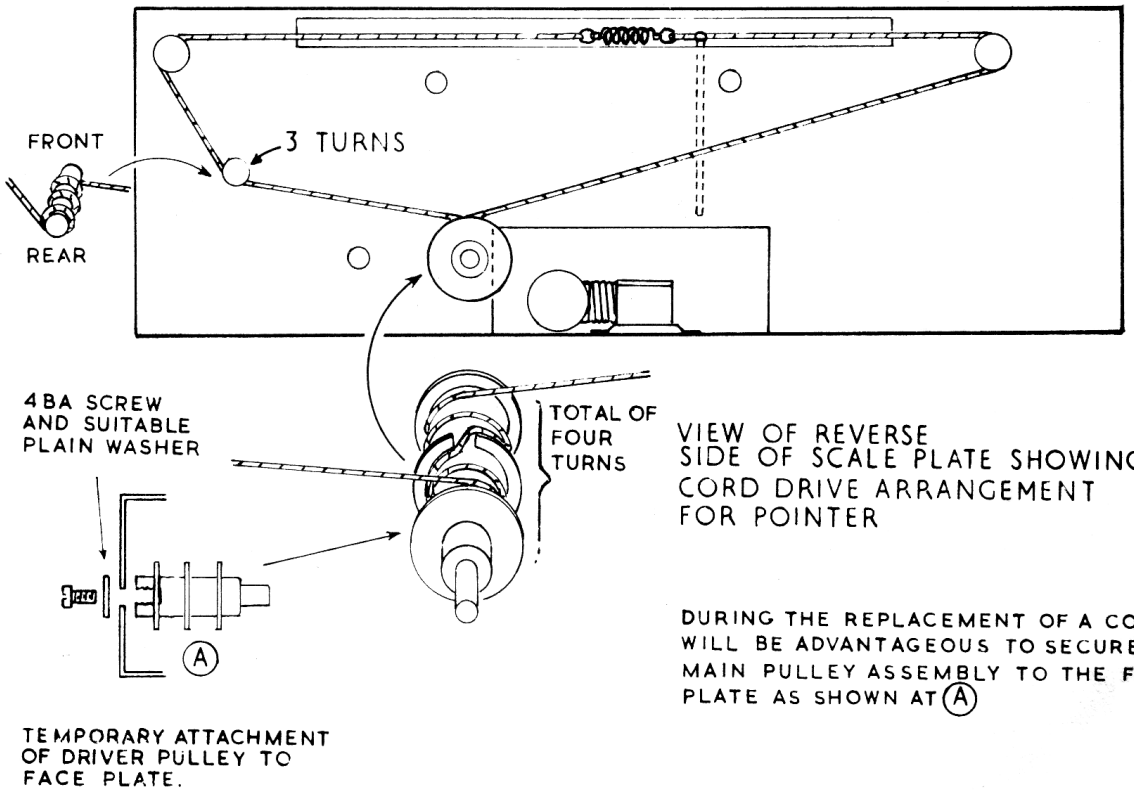
L.W. SENSITIVITY

Input 50 uV modulated 30% at 400 cycles, output to be not less than 0·8 V.

Should it be necessary to replace the drive cords, this may be easily effected in the manner shown in the illustrations.

NOTE: The diagram below shows the simple method employed for retention of pointer drive pulley assembly when scale plate assembly requires to be removed.

Check tuning calibration at approximately 250 metres and reset pointer if necessary.



VIEW OF REVERSE SIDE OF SCALE PLATE SHOWING CORD DRIVE ARRANGEMENT FOR POINTER

DURING THE REPLACEMENT OF A CORD IT WILL BE ADVANTAGEOUS TO SECURE THE MAIN PULLEY ASSEMBLY TO THE FACE PLATE AS SHOWN AT (A)

TEMPORARY ATTACHMENT OF DRIVER PULLEY TO FACE PLATE.

General Information

Smiths Radiomobile Service

All enquiries about your car-radio will be handled with efficiency and speed by your Radiomobile Distributor or by the Dealer who sold it originally. These official representatives of Smiths Radiomobile have an expert knowledge of Radiomobile equipment and performance and will supply genuine replacement parts from their own stock

Conditions of Guarantee

The conditions of guarantee for Smiths Radiomobile Car-Radio in countries outside Great Britain and Northern Ireland are defined individually by the official Smiths Radiomobile Distributors in those countries. You can obtain full terms of these conditions from either the Distributors concerned or the Dealer who sells the equipment.

Service under Guarantee

1. All normal applications for service under guarantee should be made either to the appropriate Smiths Radiomobile Distributor or to the Dealer from whom your equipment was originally bought.

2. If you cannot get in touch with an official Smiths Radiomobile representative, any reputable car-radio service station should be competent to examine your equipment, with the help of the technical section of this Manual. S. Smith & Sons (Radiomobile) Ltd., cannot accept any liability for labour costs, but free replacement components will be dispatched at once if you make a valid application direct to our Export Department, Cricklewood Works, London, N.W.2. Your application must also give full details of your car-radio, including particulars and date of purchase, Model or Type No., circuit reference of defective part/s and details of the vehicle to which it is fitted.

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