

ECONOMY 40 FM



Operators Manual

A/C/V

OPERATING PROCEDURES

1. Microphone Connector

Insert plug of attached microphone into the socket. To transmit depress the Push-To-Talk bar and speak in a normal voice.

2. On/Off Switch, Volume Control

Switch on the unit by rotating the Volume Control clockwise. Set the volume to a comfortable listening level.

3. Squelch Control

The Squelch Control should be slowly turned clockwise, until the noise disappears. Leave the control in this setting, and the receiver will remain quiet until a signal is actually received.

4. Channel Selector

Set the Channel Selector Switch to the desired channel. (Refer to channel chart of authorised frequencies in the UK)
Note: that in a common radio network all stations must operate on the same channel.

5. Digital Channel Display

Reads out the selected channel number.

6. Antenna Socket

Connect 50 ohm antenna transmission line, like RG-58/U with matching plug.

CAUTION: Please make sure your antenna is properly connected to your transceiver before making a transmission. Making a transmission without an antenna, or with poorly matched antenna (i.e. high SWR; over 2) can cause damage to your transmitter.

7. External Speaker Socket

Use 2.5 mm phone plug to connect any external speaker of 8 ohm impedance. Insertion of the plug switches off the built in speaker.

8. Power Lead

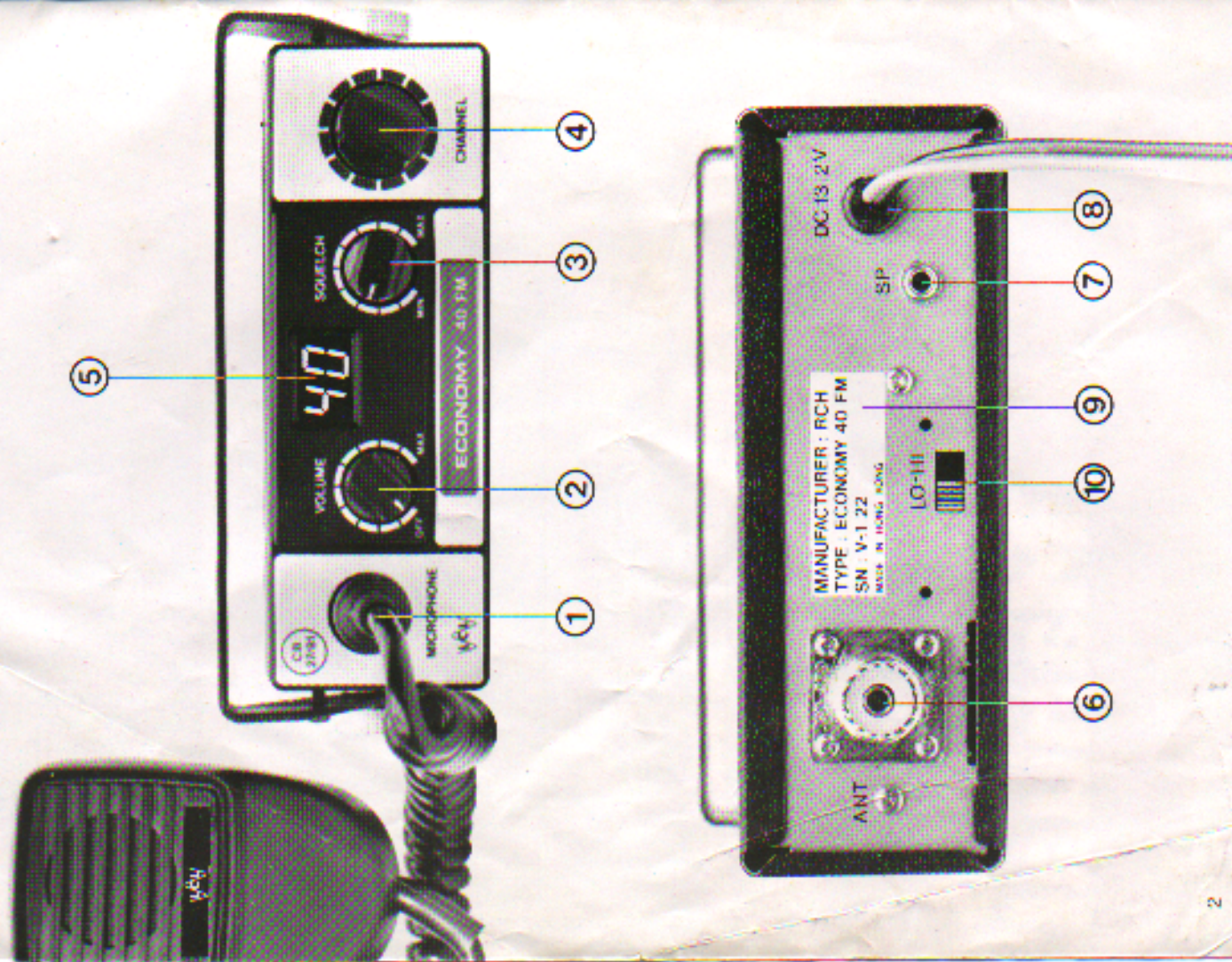
Connect the red Lead of the DC power input wire (with the fuse) to the +12 VDC battery supply. Connect the black Lead to the negative supply, this is usually the chassis of the vehicle.

9. Home Office Approval Mark/Type Indication Label

Mark indicates compliance with the specifications. Label shows type number, name of manufacturer and serial number.

10. Lo-Hi Switch (0.4-4.0 Watt RF Output)

As part of Home Office Regulations, a device or switch must be provided which can be used to reduce power by a minimum of 10dB, for use, where necessary.



FREQUENCY RANGE

Your Citizens Band radio will provide you with trouble-free performance, and will operate on the following authorised frequencies:

Channel	Frequency in MHz	Channel	Frequency in MHz
1	27.60125	21	27.80125
2	27.61125	22	27.81125
3	27.62125	23	27.82125
4	27.63125	24	27.83125
5	27.64125	25	27.84125
6	27.65125	26	27.85125
7	27.66125	27	27.86125
8	27.67125	28	27.87125
9	27.68125	29	27.88125
10	27.69125	30	27.89125
11	27.70125	31	27.90125
12	27.71125	32	27.91125
13	27.72125	33	27.92125
14	27.73125	34	27.93125
15	27.74125	35	27.94125
16	27.75125	36	27.95125
17	27.76125	37	27.96125
18	27.77125	38	27.97125
19	27.78125	39	27.98125
20	27.79125	40	27.99125

All these frequencies are generated, and accurately controlled by the use of a phase lock loop (PLL) circuit, using the latest integrated circuit technology, ensuring excellent frequency stability on all of the above channels.

TECHNICAL DATA

General

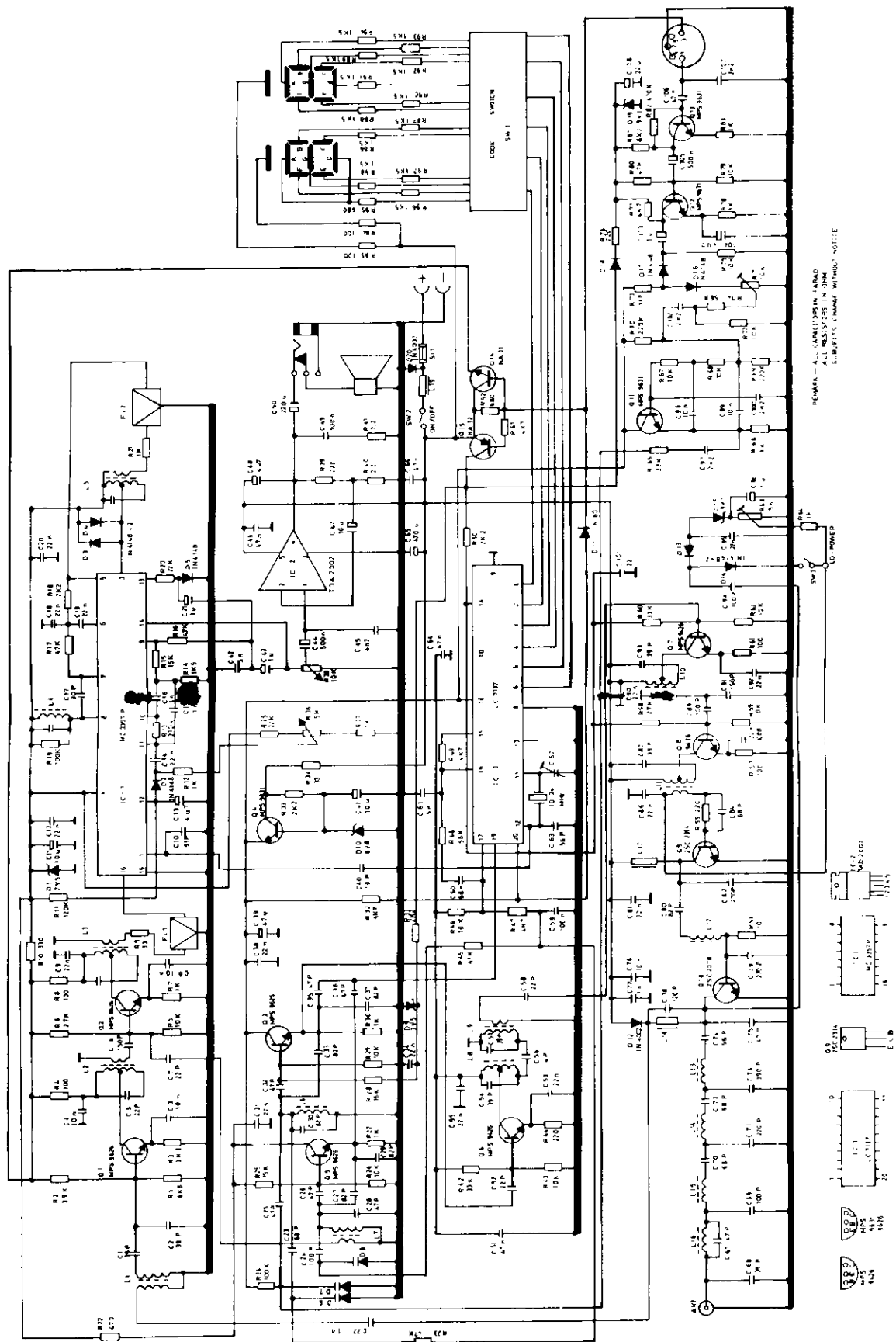
Frequency	26-28 MHz/operational 27.60125-27.99125 MHz
Channels	40 switched
Frequency Tolerance	0.001%
Operating Temperature	minus 10°C plus 55°C
Operating Voltage	12 Volt Battery/13.2 V nominal
Operating Voltage Range	11-16 VDC
Dimensions	185x49x139 mm
Semiconductors	15 Transistors, 19 Diodes, 3 IC's,
Ceramic Filter	1 Channel Display
Weight	2 1,000 g

Receiver

Sensitivity	Better than 0.4 μ V for 10 dB S+N/N
Selectivity	± 3.6 KHz 6dB, 10KHz-65dB
Adjacent Channel Rejection	70dB
IF Frequencies	10.695 MHz/455 KHz
Squelch Adjustable	0.1-1.2 μ V
Image Rejection	Better than 85 dB
Audio Output	2 Watt/8 ohm

Transmitter

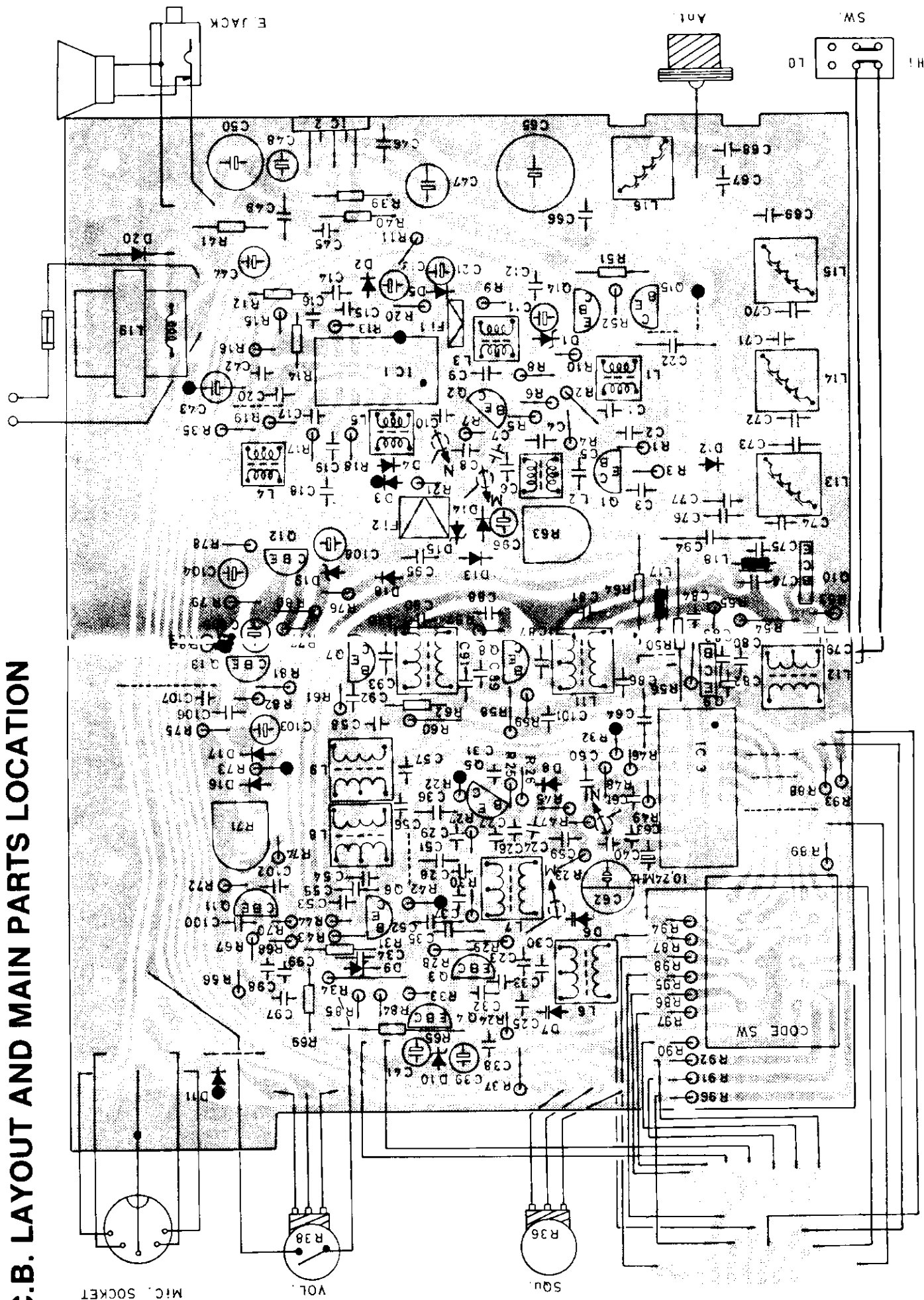
RF Output	0.4-4.0 watt (Lo-Hi)
Type of Modulation	Frequency Modulation (FM)
Modulation Deviation	2.2 KHz max.
Harmonic, Spurious Rejection	Better than 5x10 ⁻⁸ /2.5x10 ⁻⁶ Watt
Antenna Impedance	50 ohm



SCHEMATIC DIAGRAM ECONOMY 40 FM

PARTS SUBJECT TO CHANGE WITHOUT NOTICE

P.C.B. LAYOUT AND MAIN PARTS LOCATION



Dear CB Friend.

We wish to thank you for selecting this product, and welcome you to the growing family of satisfied CB users around Europe. We feel certain you will get maximum enjoyment from this new addition to your home or car. Please read these operating instructions very carefully, and be sure to keep them handy for convenient reference.

You have purchased a first class article, which used correctly, will provide you with endless pleasure.

Radio — where and when you wish to use it!

You are in communication with the world at the touch of a switch — isn't that wonderful?

Your CB friends are enthusiastic, and have pleasure in each conversation. Whether you wish to be highly technical, or just wish to have a chat — at any time, it's always possible. Remember your partners in CB are friendly, helpful people, in particular during times of distress, and we know you will be helpful to others too. Therefore join in the great circle of CB enthusiastic.

Be assured, your CB radio is made by one of the leading manufacturers in the world with the greatest knowledge in this sphere.

The Citizens Band lies between the shortwave broadcast, and the 10-metre amateur radio bands, and was established in the U.K. during the Autumn of 1981. Acquiring a CB licence, requires no technical knowledge, or a knowledge of Morsecode, that is required for an amateur radio licence.

INSTALLATION

Location

Please take care to plan the location of your radio and microphone bracket before starting the installation work. Select a location that is convenient for operation, and does not interfere with the driver or passengers in the vehicle. In cars, it is usually mounted below the dash panel, with the microphone bracket beside it, for easy access. Take care to mount your unit away from the direct heat of any interior heater.

Mounting and Connection

Your transceiver is held by a universal mounting bracket, and four screws are provided, to enable the unit to be adjusted to the most convenient angle.

The bracket must be mounted to the vehicle with nuts and bolts, for the mounting must be mechanically strong, and should also provide a good electrical connection to the chassis of the vehicle.

When you have selected the most convenient location in your vehicle, hold your transceiver, in its mounting bracket, at the exact location desired. If nothing interferes with the unit, remove the mounting bracket, and use it as a template to mark the mounting holes. Before drilling the holes, check again that nothing will interfere with the installation of the mounting bolts, also take care with the drill to ensure any wires etc. are clear behind the dash panel.

Connect the antenna cable plug to the socket on the rear panel. Most CB antennas are fitted with a type PL-259 plug, and mate with the socket on your transceiver.

Connect the red lead of the DC power input wire (with the fuse) to the +12 VDC battery supply. This wire extends from the rear panel. In some cars, the 12 V may be obtained from the accessory contact on ignition switches.

Connect the black lead to the negative supply, this is usually the chassis of the vehicle. Any convenient location with a good electrical contact will do, but be sure to remove any paint.

ANTENNA

Since the maximum permitted power output is limited by the Home Office Regulations, an antenna is an important factor affecting the transmission distance. Only a properly matched 50-ohm antenna system will allow maximum power to be transferred and radiated.

Mobile whip antennas use the metal body of the vehicle as a ground plane. When they are mounted at the corner of the vehicle, they become slightly directional, in the direction of the mass of the body of the vehicle. For all practical purposes however, the radiation pattern is non directional.

If your transceiver is not mounted on a metal surface, it will be necessary to take a separate wire from the unit to a good electrical ground point in the vehicle. When installing your transceiver in a boat, it will be necessary to provide an efficient ground plate, unless you have a steel hull. Before attempting to install in a boat, you should consult your dealer for information concerning suitable antennas, and ground plates.

BASE STATION OPERATION

(Operation from the domestic electricity supply)

To enable you to use your transceiver from your home or office, using the 240 Volt 50 Hz mains supply, you will need to obtain a suitable power supply. This power supply should have an input for 240V A.C. and deliver an output of 12-14 VDC at 2 Amps. Simply connect the red and black leads to the corresponding terminals of the power supply.