

CODAR CR 70A COMMUNICATION RECEIVER

INSTRUCTION MANUAL



CODAR RADIO COMPANY

**THE SIGER CLOSE, MEADOW ROAD INDUSTRIAL ESTATE,
EAST WORTHING, SUSSEX**

PRINTED IN ENGLAND

CODAR CR70A GENERAL COVERAGE RECEIVER

GENERAL NOTES

Your CR70A Receiver is capable of world wide reception under normal atmospheric conditions. It will give excellent results under adverse conditions and good reception can be obtained with simple indoor aerial systems.

However, for consistent long distance reception and improved signal/noise ratio, an outdoor aerial is far superior. The actual length for general coverage is not critical but it should be as high as possible and kept clear of buildings etc. Space limitations determine the total length that can be erected, but if possible an aerial about 30 feet long will give excellent results. Avoid making joints in aerial wire unless soldered as eventual corrosion will cause crackling and intermittent signals. Insulators should be used at each end.

Where space is a limiting factor, vertical aeriels are capable of excellent results. The vertical wire can be installed from upper and lower windows, but should be spaced away from the wall with stand-off lengths of wood or plastic. One advantage of vertical aeriels is that they are less directional than the horizontal type, although the pick-up pattern can be effected by local buildings.

A good earth can improve results on all bands and will assist in reducing local interference. If a separate earth to a water pipe or metal pipe driven into the ground is not available, the third pin (the largest earth pin) on the mains plug should be used.

Short Wave reception varies on the different bands according to the time of day, period of the year and atmospheric conditions. It will be found that reception on one particular band may be excellent in the morning or afternoon and fade out as darkness approaches. At the same time reception on another band will steadily improve. Sunspot activity and electrical storms will also effect reception considerably.

A log book can be kept for station logging, giving details of the station call-sign, frequency or wave lengths, time of day etc. Many amateurs and broadcast stations throughout the world welcome reception reports and send an acknowledgement QSL card in return. The collection of these colourful and interesting cards is an additional hobby to the fascination of Short Wave Listening.

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160-80-40-20-15-10 METRES

Radio Amateurs throughout the world.

13-16-19-25-31-49 METRE BANDS.

North/South America, Far East, Australia, Russia, Africa
European and other Broadcast Stations.

90-180 METRE BANDS.

Shipping, Trawlers, Ship/Shore Telephone, Lifeboat,
Lighthouse and Met. Services, Airport/Aircraft.

190-550 and 1000-2000 METRE BANDS. Medium Waves.

Local and Continental Broadcast Stations.

CONTROL FUNCTIONS.

AERIAL TRIMMER.

Peaks Aerial circuit to the signal frequency.

TUNING CONTROL.

This is a two speed vernier control to provide fast tuning
to a required band and a slower reverse action for fine
tuning over a small part of the band.

FUNCTION SWITCH.

STANDBY/AM/CW/SSB

In the STANDBY Position, the H.T. is switched off, the
valve heaters remaining on at normal voltage ready for
instant use.

A.M. POSITION.

The A. M. Position provides for the reception of A.M.
(Amplitude Modulated) signals which is the mode of
transmission employed by the majority of Commercial
Broadcast Stations.

CW/SSB

In this position the B.F.O. (Beat Frequency Oscillator)
is switched on to provide the beat note or carrier insert-
ion necessary for the reception of these types of trans-
mission. To ensure maximum sensitivity with the inter-
rupted carrier characteristics of these signals, the A.V.C
and "S" meter are switched out.

For C. W. (Morse) signals the tuning control is adjusted
to provide the audio beat note as required.

For SSB Signals it is important to use the correct procedure
and a little practice may be necessary. Locate a reasonably
strong SSB transmission which can be recognised by the peculiar

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CW/SSB (continued)

sound of the speech which will be quite un-intelligible. There are usually amateur SSB transmissions on the 3.5/4.0 Mc/s band (80metres) particularly during week ends.

With the Function Switch in the CW/SSB position tune the tuning control very slowly over the transmission. Keep the I. F. Gain controls as low as possible and the A. F. gain control turned up to the required output level. There will be one point in the centre of the signal where the speech becomes intelligible, and the voice varying in pitch as the tuning control is moved slowly each side of this point. This correct resolution point is quite narrow and why it is important to tune over the signal very slowly.

The important points are:-

Very slow tuning over the signal. I.F. gain down, A. F. gain up (consistent with the signal strength) aerial trimmer peaked correctly on signal for maximum output. A slight adjustment of the tuning control may be necessary over a period of time should the speech raise or lower in pitch.

I. F. GAIN.

This controls the gain of the I. F. stage and receiver sensitivity.

A. F. GAIN.

Controls the audio output to the required level. In the fully anti-clockwise the receiver is switched off.

HEADPHONES

Headphones should be the high resistance type 2000 ohms up to 4000 ohms. Low resistance Headphones are not suitable. The loudspeaker can be disconnected if required for headphone listening only. It is advisable not to have the receiver on with both the loudspeaker and the headphones disconnected, but both can be used together if required.

CHASSIS REAR. Viewed left to right.

Aerial/Earth Terminals. (Aerial extreme left).

Four way power take off socket.

"S" Meter zero adjustment control.

Co-ax take off socket for external amplifier/tape recorder etc.

Loudspeaker terminals for 2/3 ohms loudspeaker unit.

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CHASSIS REAR. (continued)

(Viewed left to right).

The four way power take off socket is provided to supply H. T. and L. T. voltages for auxiliary equipment, such as the P.R.30 R.F. Pre-Selector etc. The rating is up to 230 volts, the maximum current 20 M/A. 6.3 volts A.C. maximum current .75 amps.

Viewed from rear:

Top left. H. T. Negative chassis.
Top right. L. T. Live. 6.3 volts A. C.
Bottom right. H. T. Positive +
Bottom left. L. T. Common chassis.

"S" Meter adjustment.

Remove aerial, select A.M. position on Function Switch.
I. F. Gain control at maximum (fully clockwise).
Adjust zero control for zero meter reading.

CO-AX TAKE OFF SOCKET.

This socket provides A. F. output suitable for feeding direct into an external amplifier or tape recorder. A useful feature is that as this output is independent of A. F. Gain control, the receiver loudspeaker can be still used for monitoring etc. at any required level without affecting the signal level being fed to the external amplifier or recorder. Headphones can be used, of course, in place of the loudspeaker.

To avoid 'hum' the cable from the external equipment to the co-ax socket must be of the screen type, standard co-ax cable being quite suitable and easily fitted to the co-ax plug supplied. Cable is available if required, 1/0d per yard plus postage.

VALVE LINE UP.

ECH81 Triode Heptode Frequency changer.
EF183 Frame Grid I. F. Amplifier.
OA81/1GP5 Diode Detector/AVC.
ECC81/12AT7 Twin Triode A. F. Amplifier and B.F.O.
ECC81/12AT7 Twin Triode "S" Meter Bridge Amplifier and A. F. Output.

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Interference and Images

It may be found that on some Broadcasting Stations there is continuous steady whistle. This is due to an adjacent station carrier producing an audible beat note and is not due to the receiver. This type of interference can appear or disappear according to prevailing atmospheric conditions at the time and the distance between the two broadcast stations.

Image interference occurs when a very strong station is on a frequency exactly twice the receiver intermediate frequency (I. F. 470 Kc/s x 2 = 940 Kc/s) higher than the signal frequency and is usually more prevalent on the higher frequencies above 10 Mc/s.

The effect is that, for example, a powerful station transmitting on 19 Mc/s can be heard when receiver is tuned approx. to 18 Mc/s. Very long aerials will aggravate this condition and are not really necessary under normal conditions.

It is also important that the aerial trimmer is correctly peaked for maximum output. An efficient R. F. Pre-Selector ahead of the receiver, will boost the signal strength and increase the image rejection considerably. Provision to add the PR30 R. F. Pre-Selector has been made at the rear of the receiver chassis.

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We trust your CR70A will give you many hours of listening enjoyment. If you should have any queries or should the Receiver develop a fault, write first to the Service Department, giving full details, stating date of purchase, whether from a Dealer or purchased direct, enclosing S.A.E.

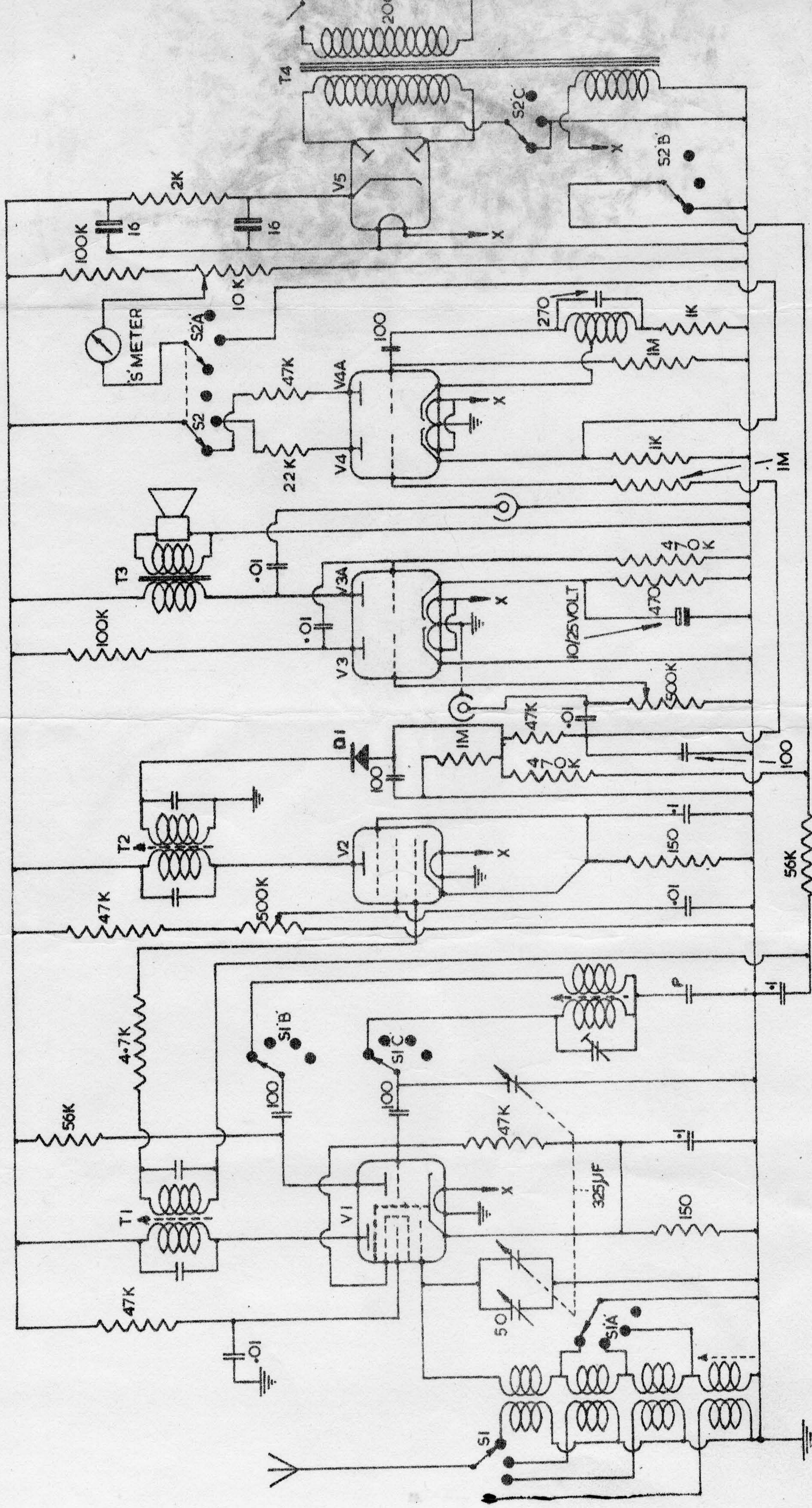
The Service Department may be able to assist by mail and if it is necessary to return the Receiver, the Department will issue a Return Label and instructions. Do not return the Receiver until notified by the Service Department.

GUARANTEE

CODAR RADIO COMPANY GUARANTEE TO REPAIR OR REPLACE ANY DEFECTIVE PARTS WHICH FAIL, DUE TO FAULTY MATERIAL OR WORKMANSHIP PROVIDING THE DEFECTIVE PARTS ARE RETURNED WITHIN A PERIOD OF 12 MONTHS OF DATE OF PURCHASE.

This Guarantee excludes any valve, Cathode Ray Tubes, or transistors used in the equipment, these being covered by their respective manufacturers.

CODAR RADIO COMPANY



CCR CR70A SCHEMATIC



