

Inside the Codar CR-66, completed according to instructions. It will be evident from this view that the receiver is very easy to put together, and the chassis and panel are supplied with all holes ready punched. The instruction manual includes a set of layout drawings, showing the assembly step by step.

THE CODAR CR-66/PR-30 ASSEMBLY

GENERAL-COVERAGE RECEIVER WITH TUNABLE PRE-SELECTOR

FOR some time now, we have been interested in the Codar CR-66 four-band general coverage short wave receiver, which comes at the extremely low price of less than £20 for the kit complete, for home construction from a 17-page manual telling you exactly how to do it. The parts and hardware supplied are of excellent quality, the slow-motion drives and dial assemblies being particularly good.

The circuit shows the design to be based on a simple mixer-oscillator, IF, detector/AVC and output arrangement, with incorporated power supply, involving five valves in all, or six with the tuning indicator as an optional extra. Band-spread is pro-

vided by a 17 $\mu\mu\text{F}$ twin-gang condenser in parallel with the main 325 $\mu\mu\text{F}$ tuner, and the coil-condenser values are such that tuning on the band-spreader is easy through all amateur bands, 10-160m. The input circuit can be trimmed up by an independent panel control, and BFO action is obtained by making the IF stage regenerative, this also controlling the inter-stage gain—see circuit pp.438-439.

To simplify construction, the coil pack and IF section are supplied factory-wired and aligned—and there is no question that this is a very important factor in the success of the CR-66, because if the assembly and wiring-up are carried out correctly and according to the instructions, there is virtually nothing that can go wrong.

At the top of the page is shown the layout above chassis, with the band-spread tuner to the left, and the aerial trimmer on the panel, above the coil pack, which is mounted across a cut-out in the chassis. This and all the holing is ready done on the chassis and panel as supplied. As can be seen from the chassis view, the layout is clean and straightforward with ample access — and space to

mount, say, a two-metre CC converter or a calibration oscillator to work with the receiver and off its power supply.

Our model as constructed and illustrated here—the front-panel layout is not shown in detail because it can be found in the Codar advertisement—proved to be sensitive and lively, with really delightful tuning controls, good front-end gain and more than enough audio output.

Hence, the CR-66 can be confidently recommended for the beginner-SWL who wants to build himself a good receiver, or for the amateur transmitter just starting on the air, who likewise requires a sound basic design to get him going.

It should be realised, however, that *because* this is a simplified design, too much should not be expected of it, and the CR-66 will not do everything. Its only real failing is the lack of adequate front-end discrimination (there being no tuned RF stage) and consequently second-channel interference can be very troublesome on some bands. Nowadays, of course, such QRM can hardly be tolerated in any receiver, and the problem is how to overcome it without undue complications.

RF Pre-Selection

Recognising this difficulty from the very beginning and wishing to avoid complicating the design, the Codar people offer a tuned RF pre-selector, the PR-30, as an optional ancillary, the point being that the PR-30 can be used ahead of *any* receiver capable of supplying it with necessary HT/LT. (A later version of this pre-selector is the PR-30X, which is self-powered, meaning that it only needs connecting in between the aerial and the main Rx input terminals, with a lead to an AC mains point.)

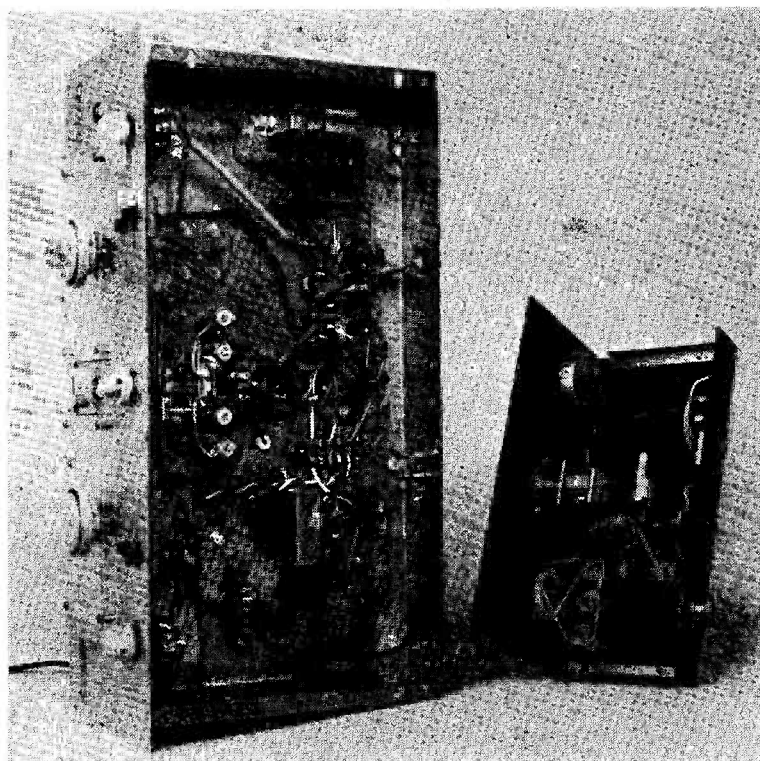
Used with the PR-30, the CR-66 becomes quite a different receiver, in that the second-channel trouble disappears and, with the extra front-end gain, it can be operated in a much "quieter" condition, which anyone accustomed to handling receivers on the short-wave bands so as to get signals out of them will understand.

As the PR-30 complete costs less than a fiver, our advice to anyone either possessing already a CR-66, or contemplating going in for one, would be to have the PR-30 as well—if not immediately, then later on. Since a tunable RF pre-selector is always a very useful accessory in any station—

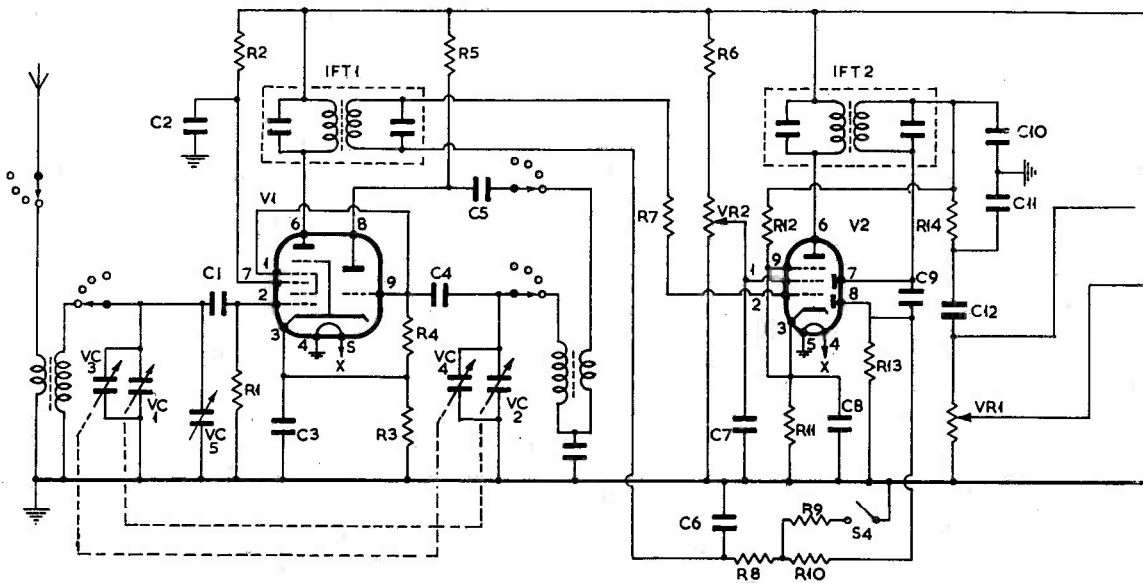
particularly where the existing main receiver is a hoary old HRO, an SX-24 or something of that vintage—it is as well that it be self-powered, to save having to take power from the main Rx or provide a separate HT/LT pack. This is where the PR-30X comes in; not only is it self-powered, but it has outlets giving extra HT/LT for the operation of accessory items, *e.g.* a VHF converter, which works very nicely with the CR-66, provided it is of the crystal-controlled variety. (The point here is that a CC/VHF converter requires no tuning control and hence no disturbance of the CR-66 panel is necessary.)

The photograph below of under-chassis layout and wiring of the CR-66 also illustrates the inside of the PR-30, this being one of the earlier models of the pre-selector. We understand from Codar's that in the current production the front panel is anodised which would greatly improve the appearance. A photograph on p.438 shows the hardware associated with the CR-66/PR-30, the central item in this view being the very smart speaker unit which goes with

[cont'd. p.439]



Showing under-chassis wiring of the CR-66 (left), as carried out from the assembly instructions. The coil-pack is the central unit nearest the front panel. Tag strips are extensively used as connection and anchoring points, and all iron-cored items (mains transformer, smoothing choke and output transformer) are near the rear chassis drop. On the right is an inside view of the associated Codar PR-30 Pre-selector, which covers the same frequency range as the main receiver and gives considerable gain, with much-improved discrimination.



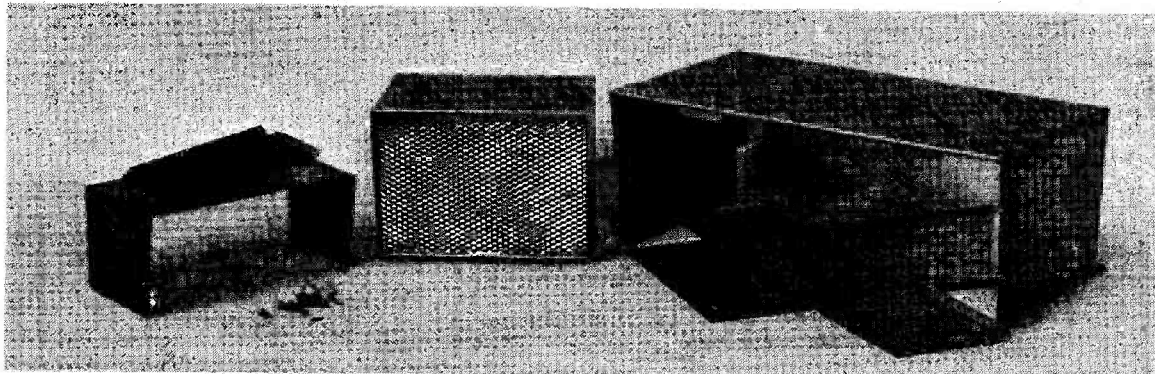
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The Codar CR-66 is basically a simple superhet receiver, involving the minimum of valves and tuned circuits. It is put out as a kit, complete to the last detail (which includes nuts, bolts and wire) with an instructional manual explaining exactly how to build it up to the finished job shown in the photographs. The frequency coverage, in four switched bands, is 540 kc to 30 mc, with electrical bandspread (VC3, VC4) giving good coverage of the amateur bands from 10 to 160 metres. The IF stage V2 is made regenerative, for gain control and BFO action, and neat switching enables the set to be used under amateur operating conditions. For best results, a receiver of this type (mixer-oscillator without a tuned RF stage) should be used either with an ATU as a "passive pre-selector," or in conjunction with the manufacturers' PR-30 Pre-selector, which amounts to a tuned RF stage giving considerable extra front-end gain and discrimination — see text.

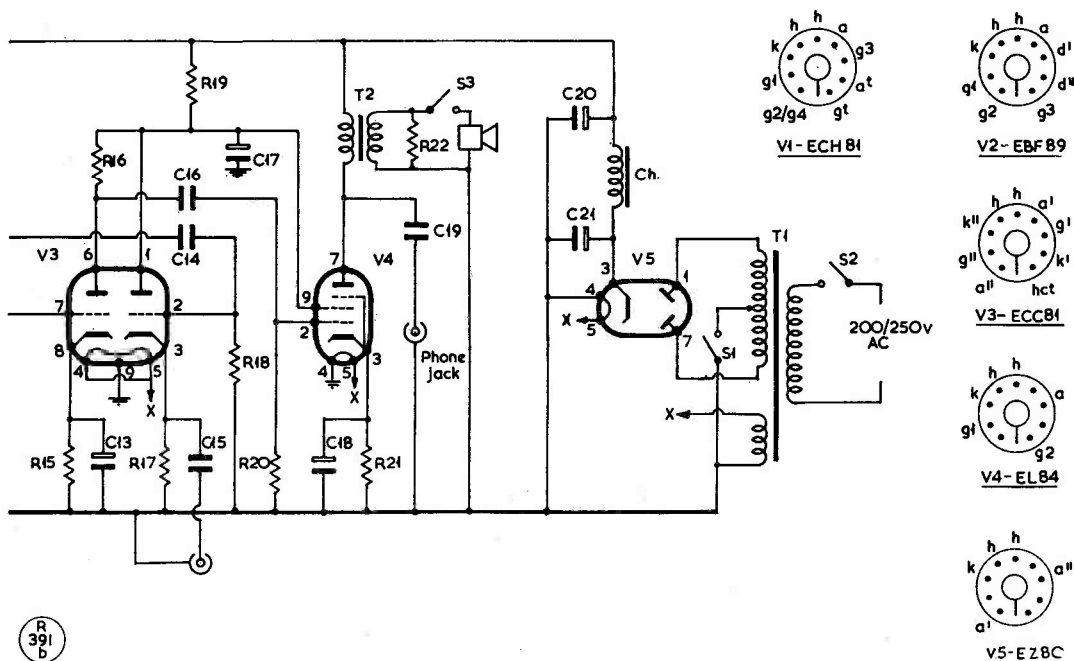
Table of Values

The Codar CR-66 Main Receiver Circuit

C1, C5 = 100 μ F	VC1, VC2 = 325 μ F, var.	R8 = 100,000 ohms	IFT2 = 470 kc (supplied)
C2, C3, C6, C7, C8, C19 = 0.1 μ F	VC3, VC4 = 17 μ F, var.	R10, R12, R18, R20 = 470,000 ohms	T1 = Mains xformer (supplied)
C4 = 56 μ F	VC5 = 50 μ F, trimmer	R14 = 56,000 ohms	T2 = Output xformer (supplied)
C9 = 22 μ F	R1, R13 = 1 megohm	R15 = 1,000 ohms	Ch = Smoothing choke (supplied)
C10, C11 = 270 μ F	R2 = 39,000 ohms	R16 = 220,000 ohms	V1 = ECH81
C12, C14, C15, C16 = .01 μ F	R3, R11 = 150 ohms	R21 = 220 ohms	V2 = EBF89
C13, C18 = 10 μ F, elect.	R4, R6, R9, R17 = 47,000 ohms	R22 = 10 ohms	V3 = ECC81
C17 = 8 μ F	R5, R19 = 22,000 ohms	VR1, VR2 = 500,000-ohm potentiometers	V4 = EL84
C20, C21 = 16/32 μ F	R7 = 4,700 ohms	IFT1,	V5 = EZ80



The metal-work, at left and right respectively, associated with the Codar PR-30 Pre-selector and the CR-66 receiver. At centre is the matching speaker, which is a complete unit and an optional extra. The three units together — Pre-selector, Receiver and Speaker — make an attractive and effective receiving assembly.



the receiver, as an optional extra; in fact, any reasonably sensitive 3-ohm speaker works well with the CR-66. It just happens that the PR-30 and CR-66 with the matching speaker make up a neat and good-

looking Rx assembly. And, as we know, many an SWL station is so equipped—and many experienced amateurs have found the PR-30 an excellent investment for receivers already in use.

PARTY PIECE

We are asked to say that Wayne Green, W2NSD, of 73 Magazine, is bringing over a large party of W's (with xyl's), who are paying for a flying visit round the capitals of Europe. They will be in London over October 7/9, and for the evening of Tuesday, 8th, a get-together has been arranged, by the G3NMR's, at a place called "The Melodie Inn," near Gantshill Station, Ilford, on the Central Underground Line. If you would like to be in on this—the American charter-flight party totals no less than 75—get in touch right away with Mrs. G3NMR (QTHR) or ring Crescent 0882.

SCOUT JAMBOREE-ON-THE-AIR

This sixth annual event—which is by way of being an international QSO party organised by and for the Scout movement—will take place over the week-end October 19-20, midnight to midnight. The idea is simply that Scouts and Scout groups throughout the world should get in touch with one another via Amateur Radio. All bands 10-80m. will be used, and stations participating will call "CQ Jamboree." The international Hq. station is VE3WSB, Ottawa, with two transmitters on the air throughout the 48 hours, and covering all bands, depending on conditions and the QSO possibilities; modes used will be AM/SSB/CW, in the appropriate areas of the HF bands. A number of U.K. stations

are already lined up for the event, with GB3PBH operating from Baden Powell House, Queen's Gate, London, S.W.7. Others are GB3OLT (Solihull, Warks.) and GB3GBS (Great Yarmouth). There will be many more, as this year there has not been time for advance details to be notified, in most cases. Anyone with an interest in Scouting or the Scout movement may take part, and amateurs in all parts of the country are asked to invite local Scouts to their stations for demonstration QSO's. For further information and details of the event, get in touch right away with the U.K. organiser: L. R. Mitchell, G3BHK, Katoomba, Tyneham Close, Sandford, Wareham, Dorset. Last year 63 countries were represented in the Jamboree, with about 80 stations in the U.K. alone operated by Scouts or on behalf of Scout groups.

"MCC"—MAGAZINE CLUB CONTEST
 Rules and general information covering the Eighteenth Magazine Top Band Club Contest appear in this issue — see pp.442-443. This is a fast-running event, and many clubs will have their plans laid, with dummy-runs organised to test equipment and operators, well before November 16/17. This contest is always very good training for the less-experienced operators in competitive working.