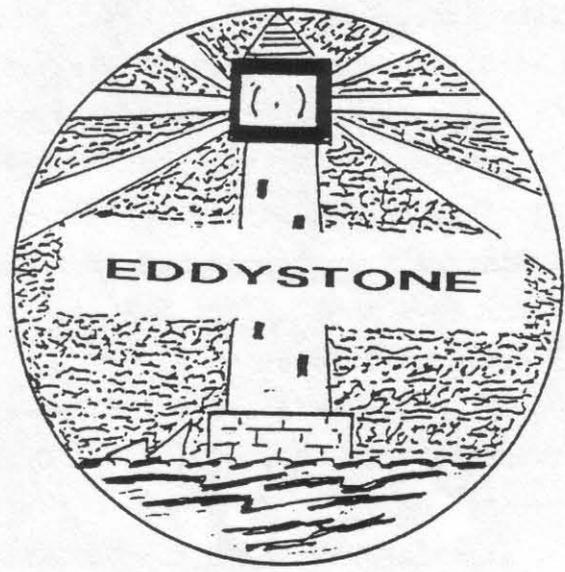


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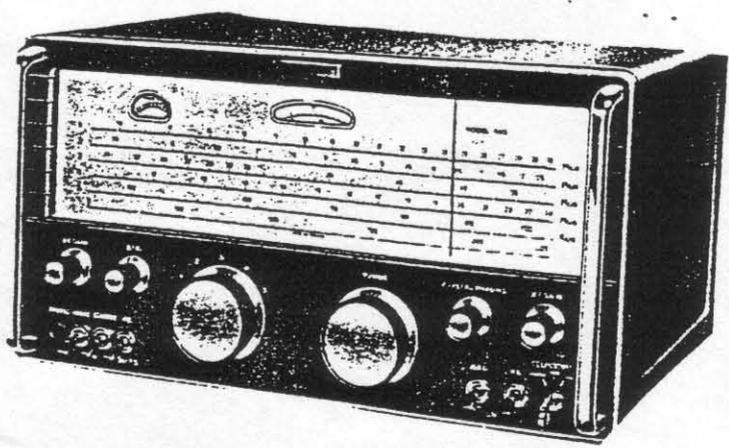
Eddystone User Group



Newsletter

Issue No.-16.

Featured Model,- 960.



- A NON PROFIT NEWSLETTER FOR EDDYSTONE USERS.
- INFORMATION QUOTED FROM EDDYSTONE LITERATURE BY KIND PERMISSION OF CERIS PETTITT, MANAGING DIRECTOR OF EDDYSTONE RADIO LIMITED.
- PLEASE ADDRESS ALL MAIL:- W.E.Moore, Moore Cottage.
112 Edgeside Lane. Waterfoot.
ROSSENDALE. Lancs; BB4 9TR.

- MEMBERS ADVERTS.-

- WANTED Eddystone short wave four pin coils for the higher frequencies, i.e. white, pink, green, brown or grey spot. Good price paid, or excellent 6 pin alternatives exchanged. Also wanted Eddystone 7 pin valve holder - 3 hole chassis mount type. Bernard Litherland. Wilts; 0225 891 254 anytime.
- SELL model 840A in good condition, need space for new Tx so only £45.00. Ring Bill on 041 649 4345. Also swop 688A diecast speaker for 899F type. STILL WANTED IF transfo for EC10 receiver as per previous issues.
- WANTED to swop my 640 in good order for any of the following models, 556, 659, 670, 710, 820, 870, 930. Graham on phone 0226 288 718 evenings only.
- WANTED by EUG, magazine review of the 960 and any known mods for this model, can copy and return. Contact EUG.

1

- The Newsletter. -

- Comments by a member at a rally that doing the newsletter 'must be a pretty thenkless task'. Well no it isn't, just the opposite as it is quite rewarding. The increasing amount of input from members means that there is a constant flow of mail back and forth , ideas are exchanged, items for the newsletter are received, quite often containing little snippets of info known but forgotten, maybe new to me . I am sure that I am helped as much by members as I am able to help them. And as soon as the one issue is sent off it is time to get on with another. Scanning the magazines also for items connected in some way with Strattons or Eddystone. Some members are even delving through their old copies of the various magazines for items to be used in the Newsletter. It is all welcome and will in time find its way into the EUG rag , as one keen member called it. Keep your letters coming in, a reply might take a few days but will come eventually. Quicker if you send an SAE or even a stamp though, otherwise it will be left till the weekend.

- SFERICS. -

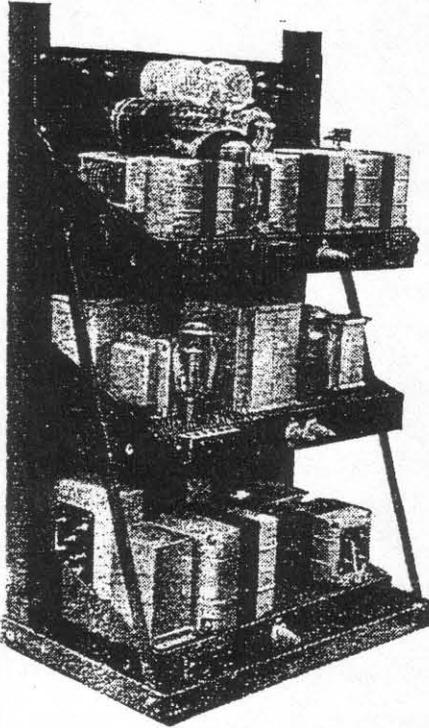
- Frank Storey wants to know of any replacement for the 'magic eye' EM34 on his model 659. It will cost him £10 for one with P&P. It is a standard octal based magic eye but any equivalent is going to be the same price or thereabouts and so that will not solve your problem Frank. A suggestion from way back , one used successfully on CRT and directly heated output bottles of the PX4 type is to run the valve, or tube on a slightly higher than normal heater voltage, AC of course, for several hours, this is supposed to 'reactivate' the Kathode material by boiling out the active, emitting stuff to the surface ! Okay so don't take me to task for this idea it appeared in many magazines of the 50s era. I believe that between 7.5 and 10 percent extra was recommended so that with 7 volts on the heater you ought to be okay, I did try it with an EM 84 some years back and it gave good results. How to get 7 volts ? well a transfo meant to run on 230 and run on 240 with all valves removed from the set except the EM34 and you will not be far off it.

- Who was 'Simmonds' ? A member who has a 356X says that the crystal band pass filter is described in the literature as a 'Simmonds Band Pass Filter'. Well it looks pretty much a standard run of the mill crystal filter as per the handbooks, cannot help you there but I have no doubt that somebody out there can and will.

Amateur Radio Equipment

Exhibits at the R.S.G.B. Show

It is not surprising that the emphasis was on transmitting equipment at the November exhibition held in London by the Radio Society of Great Britain. Of the fifteen firms participating the majority had something of interest



Odeon 50-watt output transmitter covering the 3.5- to 28-Mc/s bands and including modulator and power supplies.

to the amateur transmitter. Complete sets were shown ranging in size from a C.O.-P.A. set of 25 watts rating for the beginner to a large rack-built 150-watt transmitter shown by Odeon Radio and costing £230. Labgear had a multi-tier transmitter with a variable-frequency master oscillator, which by means of switching provides for operation on 10, 14, 20, 40 and 80 metres. An 813 valve is used in the output stage and the full 150 watts allowed by licence can be employed. Complete with modulator, all power supplies and a crystal monitor the price is £175.

In addition to the large transmitter Odeon Radio had a number of low-power sets, some of which are designed for the beginner requiring an unexpensive set for C.W. operation. An intermediate model of 50 watts output proved an

attractive set, covering as it does all the amateur bands from 3.5 Mc/s to 28 Mc/s. It is crystal controlled, contains modulator and power supplies and, assembled in a three-tier rack, costs £98. It is also available as a kit of parts.

Transmitters for the beginner were shown also by Radiocraft, some of their models being very modestly priced. The model 41 for example, which is a combination of triode oscillator and P.A. of flexible design and fitted with plug-in coils, costs only £7 1s 6d or £12 10s with a self-contained power supply, when it becomes the model 41P.

Receivers of various kinds were well in evidence and they ranged from a simple O-V-1 set to the most up-to-date communications receiver. Some of both varieties were seen on the Eddystone stand, the simpler sets and converters being assembled from the designs given in the firm's "Short Wave Manual."

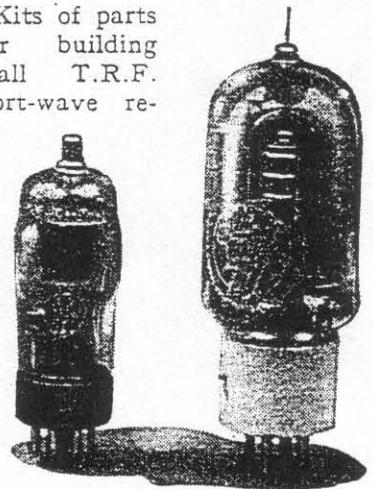
The Eddystone model 640 is an outstanding example of a communications set designed for the amateur and it embodies all the special features one expects to find in a set of this kind. It has an R.F. stage, two I.F. amplifiers on 1.6 Mc/s, noise limiter, B.F.O., crystal filter,

the price is £42 plus purchase tax.

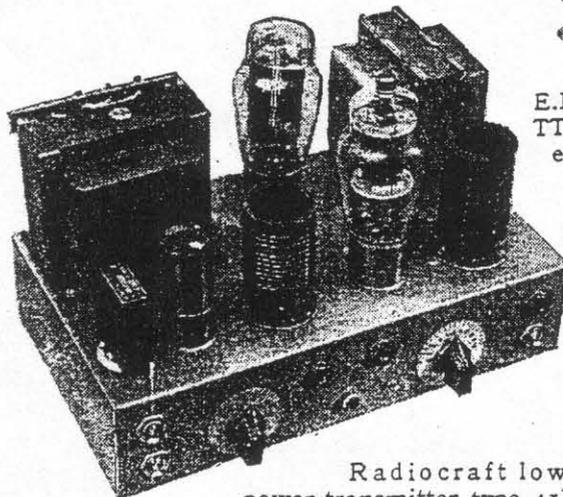
Denco were showing a prototype of a new communications set which covers 175 kc/s to 36 Mc/s in six ranges. A turret coil assembly is used and band-spread is provided by a cam-operated mechanism which rocks the stator sections of the gang condenser. The set has one R.F. stage, two I.F. amplifiers on 1.6 Mc/s, crystal and audio filters giving an 800-c/s band-width at high selectivity, noise limiter and B.F.O. The price is expected to be about £48. Miniature valves are used.

Another example of a modern communications receiver was shown by E.M.I. Sales and Service. This also has an R.F. stage, two I.F. amplifiers on 465 kc/s, noise limiter and crystal filter. It covers 550 kc/s to 30 Mc/s.

Kits of parts for building small T.R.F. short-wave re-



E.M.I. transmitting valves: TT11 tetrode and DET18 triode, equivalent to the American 35T.



Radiocraft low-power transmitter type 41P including power pack.

provision for headphones and covers 1.7 Mc/s to 32 Mc/s. Separate band-spread condensers are used and

receivers using plug-in coils and having bandspread are sold by Southern Radio and Electrical Supplies; an O.V.2 kit, for example, costs £5 17s 6d complete.

British equivalents for most of the popular types of American transmitting valves are now available. E.M.I. Sales and Service showed a range including the TT11 R.F. tetrode with top anode connector and on an octal base. It is

- The gap in 670 Coverage. -

- Funny that in less than two weeks we get two members who query this ! The gap in question on the 670 was between 2 and 6 Mc/s. A peculiar omission if you do not realise that this model was sold as 'a cabin receiver' for shipboard use. Well at that time most ship to ship and ship to shore traffic was carried on the band between these limits. Understandable in a way that the cabin receivers did not cover the frequencies likely to be used by the ships transmitter.

- The later MIMCO version of the 670 range did cover this gap, as Ross Paton reminds us.

- S504 Find ! -

- Tom Parks was lucky enough to find an outwardly nice looking, but non working S504 at a recent church sale. For £20 he became the owner and is now deeply involved in the restoration of this 1940s model. He has found no physical damage whatever inside or out but will have to replace a fair number of passive components and test the valves if he can locate a locally owned valve tester. The main restoration job is to be undertaken during the winter but he wants to get all the bits ready beforehand.

- Prices. -

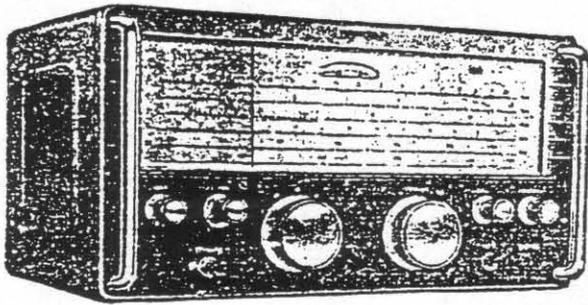
- In the same magazine there was an EC10 for £50 and an EC10 II for £40, same month but another magazine there was a 640 for £90 and a 770R for £100. They are there for sale if you keep your eyes open. I think that the two EC10 were both underpriced and the 640 about right. The 770R was a bit overpriced to my way of thinking. You can see them at any rally for between £35 and £60.

- Case for the 820.-

- This query from a member is of interest to EUC as well, did this model of AM/FM tuner unit ever come out with a case, or was it only sold for 'building in' purposes ? The EUC example would look far neater displayed in a case if there was one. Can any of the more erudite Eddystonefans out there help outwith this gem of information ? None of the adverts for the 820 show it in a case and I cannot ever remember myself seeing one 'housed'.

4/

HOME RADIO of MITCHAM



FOR ALL

EDDYSTONE

SHORT WAVE RECEIVERS
& COMPONENTS

MODEL 840C

Eight-valve Superhet Communications Receiver in modern styling and presentation. Built to highest engineering standards to provide a receiver of excellent performance at a moderate price. Built-in speaker and jack for phones. 5 Wavebands covering 10 metres (30 Mc/s) to 550 metres (480 kc/s). A.C. or D.C. mains, 110 and 200/250 volts. Full specification on request.

PRICE £58.0.0, carriage paid U.K.

Export packing, full insurance and freight overseas £6 extra.

MODEL 870A

A very compact high performance All-Wave Receiver that is equally at home ashore or afloat. Five wavebands covering 12.5 to 2000 metres. Wide clear scale with vernier logging device. Built-in speaker and attractive two-tone cabinet. Five valve circuit with high efficiency coils. A.C. or D.C. mains, 110 and 200/250 volts.

PRICE £30.17.6, carriage paid U.K.

Export price £26, plus 30/- packing and carriage.

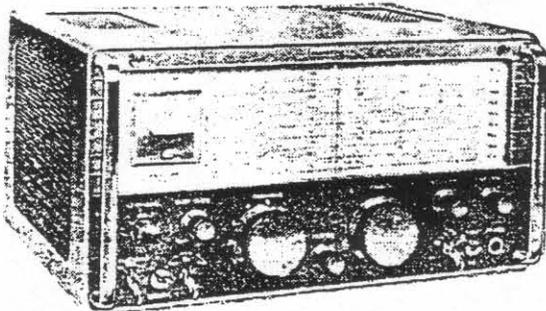
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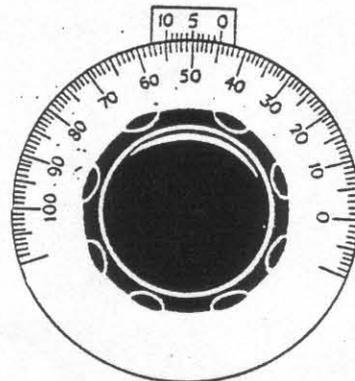
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EDDYSTONE 843 VERNIER SLOW MOTION DRIVE
Anodised satin finish, hard aluminium dial 4" diameter, with scale having 100 divisions over 180°. Driving head is ballbearing epicyclic type, totally enclosed and giving a reduction ratio of 10 to 1. Price 17/9
No. 841 Pointer Knobs. Price 10d.
No. 842 Dial, 1 1/2" dia. Price 8d.
DENCO miniature dual purpose coils. We have the full range in stock. BLUE, YELLOW, RED and WHITE. 3/11 ea. All ranges in GREEN 4/9 ea.

DENCO No. 11 Chassis. 10 x 8 x 2 1/2" in aluminium, 8/9.

DENCO 3 gang 315 pF Tuning Condenser. Price 18/3.

Please send 2d. stamp for detailed list of all parts. Despatch by return C.W.O. or C.O.D.

SPECIAL OFFERS—

Valveholders, B9C (EF50), laminated paxolin, 6d. each.

Sprague Condensers, .1 mfd., .01 mfd., .02 mfd., 9d. each.

75 pF Air Spaced Variable Condensers, 1/6 each.

24 brand new Erie Resistors, assorted, 4/-.

24 brand new assorted Condensers, 6/-.

Limited quantities available.

HOME RADIO OF MITCHAM

187 London Road, Mitcham, Surrey MIT 3282

Open every day including Saturday until 6.30 (Weds: 1 p.m.)

Drifting on a 670.

This 670 had been renovated about three years back, new paper or polystyrene decoupling condensers, many new resistors and all new valves, with frequent use since then.

Listening had been mainly on range 1 or 2 to such as V.O.A DW or R.Moscow. No problems had been noticed until that day when it became impossible to hold a station and frequent retouching became necessary. It was obvious that something was causing this and the likely place was the local oscillator.

I decided to sleep on it and dig deep the next day. A good job I did because next day the fault did not appear until after two hours of operation. After several tests and with my temper rapidly becoming frayed I disconnected the one end of C38, a 100 picofarad silver mica condenser. This was in the grid circuit of the local oscillator section of the triode hexode.

An ohms test at cold showed that it had a leakage of about 30 kilohms, warming the component with the tip of my iron whilst it was still across the meter I saw the resistance drop down to almost 12 kilohms. A replacement ceramic type has been fitted and seems to have cured the drift problem. This must be the fourth or fifth time that I have experienced problems with silver mica types in the last few years. On this same 670 I have disconnected the centre tap of the AF pot and put in a series 0.01 micro farad polycap, with a fixed grid leak of 470 kilohms. This has made some slight improvement in tone and reduced noise from the ageing carbon pot.

Those P.U. Sockets.

Several members have written in with their variations on the theme of what to use these sockets for. Most Eddystone models are fitted with P.U. sockets and it is interesting to note that in most cases they can be used as a source for a fixed audio output to feed ancillaries such as a RTTY decoder, or for the tapping direct of off-air signals. The fact that the audio take off at this point is independant of the AF gain not is useful for these external units. Another member who 'lives' in a back garden shack has coupled the P.U sockets via a twisted

pair to a loudspeaker in the kitchen which is housed with a matching transfo and toggle switch in a plywood box. This one -way intercomm enables his wife to call him up when he is needed. This works quite well since the receiver used is a second one and is left on for background. No lack of ingenuity amongst EUG members is there ?

Comparison of my EC10 with others.

Bought for £45 complete with both mains psu and battery box this receiver did need a few repairs done to bring it up to spec; first off was a new drive cord. This was not so difficult as I had expected since the original cord was still in situ, both frayed ends hanging down beneath the chassis. I first drew several diagrams of the cord layout to help in re-stringing then removed the two pieces and measured the total length. A new length of cord was measured off and cut. Re stringing took about an hour with no real problems except the correct setting of the pointer. This was done using a BC221 to mark the ends of the ranges.

Next was the push button switch for the audio filter, this refused to remain in when pushed. a small piece of phosphor-bronze spring was soldered to the body of the switch mechanism to hold the locking ratchet in. Maybe the original owner had been a C.W fan. Audio output was low and distorted, two new CC83 type transistors were fitted and audio became normal. Checking the I.F and R.F cores I could see no signs that they had ever been tampered with. In the event only a touch up of the trimmer condensers was needed on ranges 1 and 2.

By now I was ready to do some comparisons with my other receivers, an EB35 and a Heath Mohican. This latter one looks classy with its big dial and many scales but I found it no match for either Eddystone as regards stability or resettability of a frequency. The logging scales on both of the Eddystones enable you to return to a previous setting with an accuracy that the mohican could not match. Above 14 Mc/s sensitivity dropped on all three receivers but the reduction on the mohican was such that it produced nothing at all on 20 Mc/ s whilst a stateside beacon was still audible on the EC10. The EB35 of course does not go beyond 22 Mc/s but even

at this frequency I was able to hear broadcast signals, HCJB in Quito Ecuador was there, on the mohican it was just about audible. Some actual measurements gave me, at 14 Mc/s, a figure of 10 microvolts for 20 dbS S/N on the mohican. The EC10 gave 3.5 microvolts and the EB35 just over 4 micro volts.

What really set the EC10 above all the others was the C.W. filter, this enabled me to sort out and copy signals on 7.0 Mc/s which were just a part of the general babble on the others. It is preset at about 800 c/s which might be a little too high for some of the old timers. Like many older wireless ops, they prefer to copy at a frequency around 500 to 600 c/s. Despite this the filter certainly does its job well. Whilst I would not expect to be able to set the EC10 to a frequency of, say, 14.210 Kc/s from the scale markings, I would certainly be able to reset to any frequency once located by means of the accurate logging scale. The mohican is very vague as to the actual frequency location and resettability is difficult as it depends on how accurately you set the main tuning before using the bandsread control. One last point is that second channel problems on the mohican are so bad above 14 Mc/s that a quite false impression of liveliness is given to the unwary. Only when you can find World Service at six or seven points between 15 and 16 Mc/s do you realise what is happening. Of the three the EC10 is much the best for amateur listening, the EB35 would be a good choice for broadcast listening, and the mohican - well it's for sale.

Big Brother and my 770R !

For some weeks I had been curious about a modulated carrier and ticking noise on a frequency just below 50 Mc/s on my 770R. Using a multiple-dipole vertical up the side of the house I was getting S7 signals day and night. Prolonged listening one evening produced sounds of breathing, later on a baby crying and a conversation involving christian names. It became evident with a little sleuthing that the transmission was a baby minder type device, left plugged in permanently in the home of a near neighbour. Near relatively since it was a hundred yards up the road. Knowing them slightly I decided to let them in on the fact that their home life was being broadcast to all

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the locality, that anyone with a suitable radio or scanner could listen in. Their surprise turned to annoyance when I invited one back home to listen to the other talking. The device has not been used since and was I am told returned to the store from which it came.

Servicing Tips.

Faced with a dead set, but where the valves are 'lit-up' and H.T is present I always start by touching the centre tag of the A.F gain pot; a buzz in the speaker is a pretty fair indication that the A.F stages are functioning okay. Step two depends on what test equipment is available. If a signal generator is to hand it is possible to inject an I.F signal from the stator of the local osc; or mixer tuning gang. If a signal is produced from the speaker you have proved the I.F as well as the A.F stages. Step three, if a scope is to hand will be to check for a signal from the local oscillator, by putting the scope probe onto the stator of the local osc; gang several volts should be produced, take no notice of the actual frequency since the probe capacity will change this anyway. Should neither scope nor sig; gen; be available then a simple signal injector can be used. A circuit for one is included in this issue. The method is the same, start from the output stage and work back to the aerial input. Just one word of warning H.T voltages can be dangerous, be safe. A good tip from one member is to wear thin rubber kitchen gloves.

A.F. Filters.

The Eddystone type of LC audio filter is an integral unit preset to about 800 c/s and sealed in a can. They have at this frequency a very high 'Q' and with the B.F.O correctly set it is possible to produce that much sought after single signal effect. Use of this filter on a C.W signal produces results which must be heard to be believed. The problem is the fixed 800 c/s frequency. One member has opened up one of these filter units and is experimenting with lowering the passband to accommodate his preference for a 550 c/s C.W note.

Name, Brand and Model	Type of Circuit	Frequency Coverage	Receiving Modes	Input and Output Impedance	Sensitivity and S/N Ratio	Number of Valves and/or Semiconductors	Gain Controls	Country of Origin	Additional Information
830/7 (Price on request)	Superhet Double superhet	300kHz-30MHz (9 ranges)	A.M. C.W. S.S.B.	75Ω (I/P) 250Ω I.F. 3Ω A.F. 600Ω line Med. Z phone	3μV for 15dB 3kHz bandwidth	15 Valves 4 Semiconductors	A.F. I.F. R.F.	U.K.	Built-in P.U. Built-in L.S. "S" meter Crystal cal. Crystal filter. Noise limiter. Image rej. > 70dB and > 60dB. Provision for crystal control.
850/4 (Price on request)	Superhet	10-600kHz (6 ranges)	A.M. C.W.	75Ω (I/P) 300Ω	< 5μV for 15dB above 100kHz (A.M.) < 5μV for 15dB (all frequencies C.W.)	11 Valves	A.F. I.F. R.F.	U.K.	Built-in P.U. Built-in L.S. Crystal filter. Provision for crystal control. Image rej. > 75dB at 600kHz.
940 (Price on request)	Superhet	480kHz-30MHz (5 ranges)	A.M. C.W. S.S.B.	75Ω (I/P) 100Ω A.F. 2.5Ω A.F. 600Ω line 200Ω phone	< 3μV for 15dB	13 Valves	A.F. R.F./I.F.	U.K.	Built-in P.U. Built-in L.S. "S" meter. Crystal cal. Image rej. 90dB at 1MHz, 40dB at 20MHz.
958 (Price on request)	Superhet Double superhet Triple superhet	10kHz-30MHz (10 ranges)	A.M. F.M. C.W. S.S.B. F.S.K. (optional)	75Ω 600Ω Exl. synth. 3Ω A.F. 150Ω line 600Ω line 75Ω I.F. Low Z phone	3μV for 10dB at 3kHz bandwidth (A.M.) 1μV for 10dB at 3kHz bandwidth (C.W./S.S.B.)	97 Semiconductors	A.F. I.F. R.F.	U.K.	Built-in P.U. Built-in L.S. "S" meter. Crystal cal. Crystal filter. Ranges 1-4, local oscillator has drift cancelling loop locked to harmonics derived from oven-controlled crystal oscillator. Image rej. > 60dB below 1-6MHz, > 70dB up to 18MHz, > 60dB to 30MHz.

continued on page 309

Name, Brand and Model	Type of Circuit	Frequency Coverage	Receiving Modes	Input and Output Impedance	Sensitivity and S/N Ratio	Number of Valves and/or Semiconductors	Gain Controls	Country of Origin	Additional Information
Eclystone Radio Ltd continued 990S (Price on request)	Superhet	230-510MHz 470-870MHz	A.M. F.M.	75Ω Low Z I.F. 3Ω A.F. 150Ω line 600Ω line 1kΩ video Low Z I.F. Low Z phone	< 5μV for 10dB at 1MHz bandwidth (A.M.) < 4μV for 10dB at 1MHz bandwidth (F.M.)	42 Semiconductors	A.F. I.F. R.F.	U.K.	Built-in P.U. or 12V battery operated. "S" meter with log or linear scale. Image rej. > 60dB. A.G.C. characteristic. < 12dB variation of O/P for I/P variation of 70dB above 10μV.
990R (Price on request)	Superhet	27-240MHz (4 ranges)	A.M. F.M. C.W.	75Ω (I/P) Low Z I.F. 1kΩ video 3Ω A.F. 150Ω line 600Ω line Low Z phone	< 5μV for 10dB at 30kHz bandwidth	52 Semiconductors	A.F. I.F. R.F.	U.K.	Built-in P.U. or 12V battery operated. "S" meter. Built-in L.S. Crystal cal. Crystal filter to suit 12.5, 25 or 50kHz spacing. I/P for ext. osc. Provision for crystal control. Image rej. 50dB up to 200MHz, 45dB above 200MHz.
1830/1 (Price on request)	Superhet Double superhet	120kHz-30-3MHz (9 ranges)	A.M. C.W. S.S.B.	75Ω (I/P) 3Ω A.F. 150Ω line 600Ω line Low Z phone	3μV for 15dB at 3kHz bandwidth	53 Semiconductors	A.F. I.F. R.F.	U.K.	Built-in P.U. or 12V d.c. supply. Built-in L.S. "S" meter. Crystal cal. Provision for crystal-controlled channels. Image rej. 60dB-70dB.
C.10 Mk 1 (Price on request)	Superhet	550kHz-30MHz (5 ranges)	A.M. C.W.	75Ω (I/P) 400Ω Low Z phone (O/P)	5μV for 15dB above 1.5MHz 15μV for 15dB below 1.5MHz	13 Semiconductors	A.F. R.F.	U.K.	Battery operated, mains P.U. optional. Built-in L.S. Image rej. 50dB at 2MHz, 20dB at 18MHz.
C.10 Mk 2 (Price on request)	Superhet	As Mk 1	As Mk 1	75Ω (I/P) 400Ω	As Mk 1	15 Semiconductors	A.F. R.F.	U.K.	EC 10 Mk 2 and EC 10 A Series differ from the Mk 1 by the addition of (a) fine tuning control, (b) carrier level meter, (c) standby switch.
C.10 A Series (Price on request)	Superhet	330-560kHz 1-30MHz (5 ranges)	A.M. C.W.	5kΩ record Low Z phone As Mk 1	As Mk 1	15 Semiconductors	A.F. R.F.	U.K.	EC 10/A/2 RM has two additional speakers for ship intercom system. Additional information otherwise as for Mk 1.

10 /
- Featured Receiver, 960. -

- This was the first production transistor model by Eddystone. Using the classic styling of the 940 general coverage model the 960 is in many ways similar to the 940, it is a single conversion superhet covering 500 Kc/s to 30 Mc/s in six ranges with overlaps at both ends of each range. Coverage is split as follows,-

Range 1. - 20 to 30 Mc/s.

Range 4. - 2.2 to 4.2 Mc/s.

Range 2. - 9 to 20 Mc/s.

Range 5. - 1.13 to 2.2 Mc/s.

Range 3. - 4.3 to 9 Mc/s.

Range 6. - 0.5 to 1.13 Mc/s.

- The IF is at 465 Kc/s with a switched band pass crystal filter for CW use.

- A total of 12 PNP type transistors and seven diodes are used in the circuit. five of the diodes are germanium signal types whilst two are silicon power diodes. These provide an overall sensitivity of better than 3 microvolts for a 15 db signal to noise ratio, except on range 6 the IF range where a sensitivity of better than 6 microvolts is given.

- Selectivity figures as quoted by the factory are ,-

6 db down at 2.5 Kc/s.

30 6 ..

60 14 ..

use of the crystal filter gives a 6 db figure of 500 c/s and a 40 db figure of 4 Kc/s. Image rejection is quoted as being better than 20 db at 18 Mc/s and 50 db at 1.65 Mc/s.

- Calibration accuracy throughout the range is well within 1 percent, with a frequency stability of 1 part in 10^4 per degree centigrade.

- The 960 is powered usually by eight 'D' type cells or the equivalent in dry or rechargeable cells, this giving a nominal 12 volts supply. The battery box is internally mounted usually but there is provision for it to be mounted outboard if so desired. Alternatively a 12 volts supply from an external source may be used.

- Printed circuit boards are used for both IF and AF stages but the RF stages are wired directly into circuit to minimise losses.

- Aerial inputs follow the standard Eddystone practice and are 75 ohms unbalanced or 75 ohms balanced for use with a doublet or twin feed line. An alternative is a random wire and earth.

- One RF stage followed by mixer and separate local oscillator with the output of the mixer fed into three stages of IF amplification, the crystal filter using two 465 Kc/s crystals in a balanced band pass circuit may be switched into the first IF stage. A separate AVC amplifier controls the RF stage and the first & second IF stages, two audio amplifier stages feed the push pull output stage which has about 1 watt available at 10 per cent distortion. The BFO stage feeds into the second IF stage

960 cont;

as is conventional practice for similar models. Audio output can be into the internal 3 ohm speaker or into an external 3 ohm load. If phones are used then the 3 ohm output is cut off. Provision is made for low level audio to be fed into 600 ohm lines if need be.

- Standby provides desensitisation but if used in proximity to a transmitter it is recommended that two back to back diodes are fitted across the aerial input terminals, this is done on later production versions but not on my early model.

- Unusually for Eddystone a total of eighteen mods are listed for the 960 in the manual. Possibly this is explained by the 'newness' of semiconductor technology in those days. They are all worth while doing on any early production model and so the manual is a must for this set.

- The usual block schematic is included in this issue, but it does not do justice to the 960 and the care and quality workmanship that went into it in those 'changing times'.

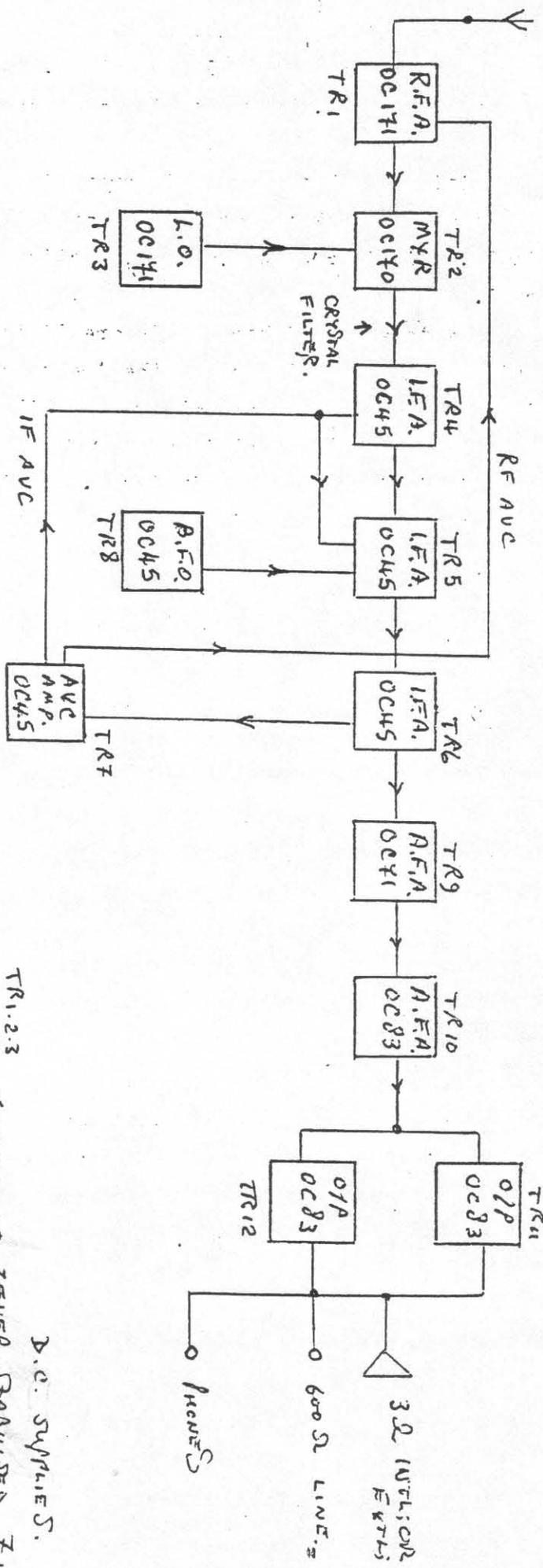
- Front panel controls are as follows, RF gain, BFO tune, Power ON/ AF gain, Crystal filter on, NL, Standby, BFO on, Range, Tune, AVC on.

- E.U.G does have a large number of manuals thanks to Eddystone and others so if you are stuck for information just get out your pen and write to us, an S.A.E will get you a quick reply and if your query is detailed enough it is quite often possible to suggest a cure for your problem there and then. Many faults occurring on these models are well known and documented by now, the faults and their cure is in many cases on file here ! Others may be cleared by consult the relevant service data in the manual or service sheet, your answer may be just a letter away.

- PERIOD ADVERTS IN THE NEWSLETTER. -

- It is not possible to please everybody , as I have found out since this newsletter has been going out. Many of you have written in about the period ads, some say they like them to be printed in context, complete with the surrounding text as originally published even though the rest of the page may not refer to Eddystone products. Others object to this and ask that we only carry the Eddystone bits and build up a composite full page of ads from various sources. Well it's about fifty / fifty so I guess that the ads will continue as before, some complete page as per the original and some pasted up composite. The general drift of the mail coming in though is that they are liked by most members, for many who do not possess any old literature they are the only source of information on the older models and their 'new' prices. And the ads do seem to have inspired many newer members to go out looking for an older model.

75Ω BAL; UNBAL;
OR Random Wires.



MODEL - 960.
(out 1962.)

TR1, 2, 3
4, 5, 8. ← D.C. SUPPLIES.
ZENER STABILIZED, 7.0V.

TR6, 7, 9, 10, 11, 12. ← NON-STAB, 12.0V.

- A Super S 750 Receiver ? -

- AGAIN ! This is the second time that I have heard of this model, and do you know I still doubt that it exists ! Billie Morris has now written to tell me that such a model was mentioned in an article in one of the radio magazines several years ago when it was question of choosing a good second hand receiver for a 'not too expensive' station. It is supposed to have a built in 's' meter and slightly 'upmarket' front panel knobs and switches. In my years of Eddystones and in all the literature that E.U.G has now collected there is no mention of a 750 other than the bog standard one we all know. Come on you experts on things Stratton and Eddystone, if such a model does exist then tell us about it and we will tell the world, literally so. It was in fact solely due to our members in the antipodes that we found out about the 680/2 and the 680/2A, which had not until then figured in the known lists. It is still not quite clear what the differences are between these two variants and the basic 680.

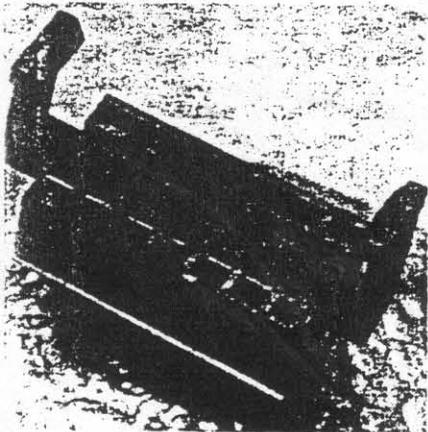
- Computer QRM, Again. -

- Don Milnes says that somebody in the vicinity of his QTH must have acquired a new home computer. How does he know ? well each evening after about seven it comes up on his 940, about S3-4 and covers from about 2.0 Mc/s down to long wave, worse on his wifes 'tranny' as it interferes with her Radio 4 ! Only last year he was forced to go out QRM DFing with a portable and found the offender to be a commodore model five houses along the road. The owner in this case came and listened to the QRM , apologised , bought a Nickel based aerosol and sprayed the plastic casing of the computer, earthed it and Hey Presto a cure. This is not the same guy though as he and Don are now good friends and a check has been made. In a case like this , once you have determined who and where the offender is the best line of approach is 'diplomacy'. The friendly kind not the 'gunboat' kind. Invite the owner to come and listen whilst somebody operates the computer, an open phone line can be useful so that operation of the computer can be checked against its unauthorised emissions. And the point should be tactfully made that they are that. Unauthorised and Illegal. Point out that it is far better to have such things sorted out between neighbours rather than involve the dreaded 'Authorities'.

New ¹⁴ Products

Cordless soldering gun

A soldering gun now available from Greenwood Electronics is rechargeable, feeding solder automatically and illuminating the working area. The Isotip MK III, as it is named, has powerful, rechargeable, nickel-cadmium batteries which can provide power for up to 400 electronic joints. A 'dead' soldering gun can be fully recharged overnight. By operating the trigger of the gun, the Isotip achieves soldering heat in five to eight seconds. On squeezing the trigger a little further the solder feed tube automatically positions the solder for quick accurate work. A choice of four different snap-in tips is offered; the tip operates under low voltage and is isolated to eliminate electrical leakage, so reducing the risk of damage to electronic components. Price, including



High-stability receiver

Sept -77

A general-purpose, high-stability communications receiver, operating over the frequency range 100kHz to 30MHz, has been developed by Eddystone Radio Limited. The receiver, type 1837/2, combines very high stability and a digital frequency readout with a continuous tuning system, which allows absolute freedom for search purposes. It provides reception facilities for c.w., m.c.w., and a.m. signals together with upper and lower sideband reception of A3A, A3H and A3J signals. The receiver can be operated from any 100/130V or 200/260V, 40-60Hz a.c. supply or from a 12/24V direct source using an external inverter.

There are nine frequency ranges on the instrument and once one is selected the receiver is operated in the search mode as a normal medium stability receiver, the tuned frequency being displayed on the digital readout. When

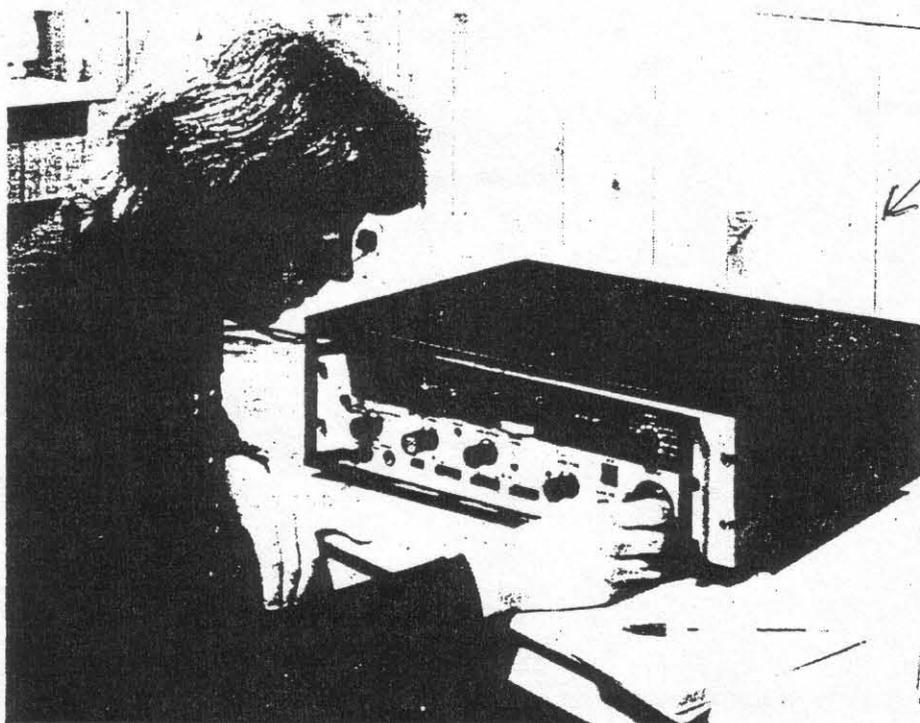
the lock control is pressed an error-correcting circuit locks the receiver to the tuned frequency at that moment and the high-stability mode comes into operation. The receiver continues to function in this mode until the lock facility is dispensed with, when it reverts to a medium-stability receiver, enabling search to be continued. The receiver conforms to the climatic, shock and vibration requirements of MPT1201, MP1204 and CEPT draft recommendations and it is designed generally to meet British Defence Specification 133 Class L2. An optional f.s.k. unit, suitable for transmissions having frequency shifts of 85 to 1100Hz with baud rates in excess of 300, is also available. Eddystone Radio Limited, Alvechurch Road, Birmingham, B31 3PP.

solder feed, spool, recharger, one high temperature bevelled tip and one chisel tip is £33 plus v.a.t. Greenwood Electronics, Portman Road, Reading, Berkshire, RG3 1NE. WW 302

Retaining clips

Retaining clips in the RC series, from Astralux, are designed to prevent 'walk-out' - the tendency of cable plugs to separate from their sockets regard-

less of the retention forces of the socket contacts on the plug pins. Although a force of at least 4.5kg is required to overcome the effect of one of these clips, the cable plug can be removed at any time by a simple procedure. Four sizes of clip are available and a selection chart indicates which clips can be used with different manufacturers' cable plugs. Astralux Dynamics Limited, Brightlingsea, Colchester, CO7 0SW, Essex.



- The 670C. -

- A reader who has recently bought one of these is querying the knobs on his receiver. Point is that all four are the same size , and all other models that he has seen have the main tuning and the range switch larger than the others. Well if you had the 670C instruction manual with the photo on the front then you would see that all four were the same size ex factory. However I do have to admit that the one I have , and many I have seen elsewhere have had the two central knobs replaced by the larger type as on , say, the 840C. Purists would say that it is wrong but I find it does approve the appearance and appeal of my 670C.

- A query from an owner of an 870. -

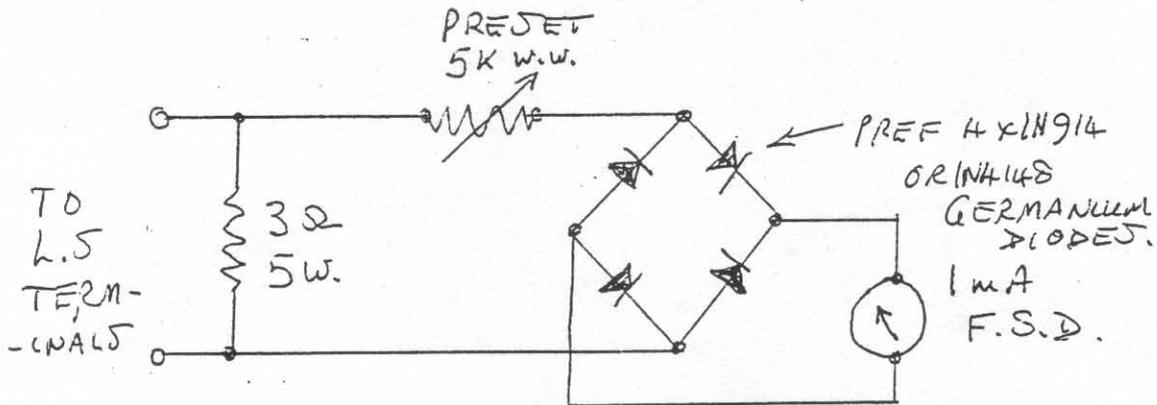
- This 870 has been recently revalved by its owner and the L.O trimmers were reset on range 1 whilst the set was on the bench , not much adjustment was needed even after a valve change and ageing over 33 years of use. He asks the purpose of the slug tuned coil at the rear of the underchassis space which is separated from the tuned circuitry by a dividing screen, he admits his theory is a bit short and wonders if this can also be needing adjustment. Get a manual for your 870 and all will be explained ! This is L9 on the schematic and together with C2 it forms a series I.F rejector circuit across the aerial input. Not so much nowadays but up to about 25 years ago much of the ship/ship and ship/shore traffic was carried on the marine band around 400 to 520 Kc/s on C.W or M.C.W, earlier still with I.C.W. Several Coastal radio Stations used 464 Kc/s as their 'send' frequency and since many domestic sets of the time had an I.F of 465 Kc/s it was not unusual for the Coast Radio morse signals to 'breakthrough' the first stages and be amplified by the I.F stages and detected normally thus appearing in the loudspeaker superimposed on the broadcast signal. It should be tuned to the same frequency as the I.Fs but should be tuned for minimum output, not maximum .

- Date of Manufacture of 750. -

- Well it possible one or two came out of the Bath tub in 1949, as you say Dave. The official launch date however according to company literature was 'early 1950'. It is a quite fantastic performer and I have never understood why it has never acheived the popularity of others like say the 680X.

- Audio output meter. -

- Coincidentally two letters in a week querying the '50 mW' output level so often mentioned in Eddystone manuals as the level used when re-aligning a receiver. The point in both letters being how to be able to measure it when no calibrated output meter is available ? I guess the simplest way of all would be to put a 3 ohm 5 watt fixed resistor across the speaker output terminals as the recommended load and then to measure with a high 'ohms/volt meter on a low AC volts range, the required output of approximately 50 mW will be a reading of 0.39 volts. A simple output meter could be made up as below and then calibrated for 50 mW centre scale by using it in conjunction with the above test , when you get a set output level of 50 mW on the AC voltmeter, that is a reading of 0.39 volts. Remove the meter and dummy load, without changing any settings on the receiver or sig gen substitute the output meter, set pot to a reading centre scale on its meter, mark this on the scale. The pot can be sealed in this position with a dab of nail varnish on the spindle.



- 888A Bandspreading. -

- Unless you have owned and operated one of these receivers then you will not realise the vast level of bandspread which exists on the full length per band scale. Each of the six amateur bands which existed in 1957 has the full length of the almost twelve inch long scale. On top band the logging scale gives four divisions per Kc/s, at 80 metres it is still a healthy 0.7 Kc/s per division . On 40 metres this is 0.33 Kc/s to a division on the logging scale. Whilst on ten metres a division is still only 2 Kc/s ! The use of a built in calibrator and a front panel local oscillator frequency adjust control enables a precision of frequency setting which is still today quite adequate for most SWL or amateur purposes.

- INFLATION. -

- A call from a non member who had seen the recent 'blurb' in a radio magazine re E.U.G has left me somewhat astonished. The offer was for a 670A plus round Eddystone speaker and he wanted £200.00 for the pair !

- My reaction was one of amusement but at the same time I am coming to realise that the very existence of E.U.G has been sufficient to give some people the idea that they should ask inflated prices for Eddystone products. Some time ago I got offered a fantastic sum for my EA12, the recent offer of £35 for one of my catalogue number 669 'S' meter units from a member had already set me thinking.

- Not so long ago Halcyon Electronics were advertising 'round Eddystone speakers & S meters - £39.' Maybe members should begin to think of their model 680 or 750 as items to be included on their House contents insurance policy. Putting a value on these things for 'replacement' purposes is not easy of course but it ought to be possible.

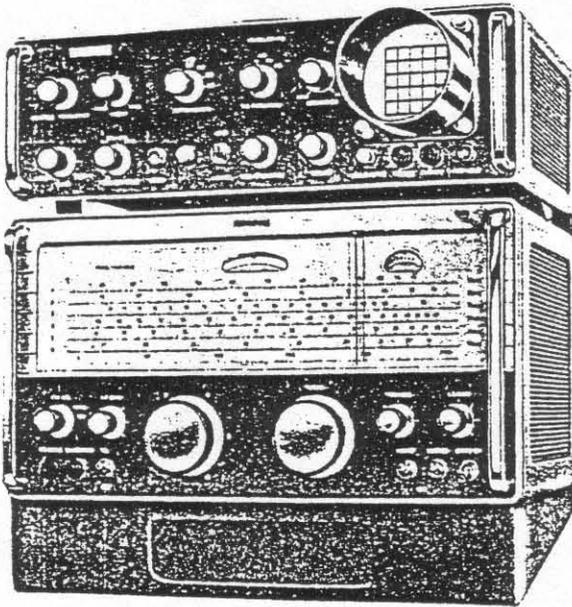
- E.U.G has been compiling a listing for two years now of all second hand prices of Eddystone models as seen at rallies , in adverts , & as reported us by members. If any of you out there do need help with putting a value on your receiver (Eddystone only) then an S.A.E and you will get what info we can give you on the particular model . I am not going to get together a list for inclusion in the newsletter since prices are so variable but I will give you the last few prices for that model as notified to me.

- N.S.P.C.E. ? -

- There really ought to be such a society , for prevention of cruelty to Eddystones. A recently purchased 870A had been painted in a violent purple colour, quite a good paint job except for the colour. The perpetrator of this had gone to the trouble of removing the case to do it, the knobs had also been removed to permit the painting. Why , and what had the poor 870A done to deserve this ? Electrically the set was in lovely condition and had almost certainly never been touched or twiddled since new. Due to the 'orrible colour I paid only £10 for it, not the asked for £18. Ordinary turps had no effect on the stuff and so I had to get it done at a garage paint shop, well worth the asked for £3.50 as the original colour scheme is now restored and the 870A is functioning very well . A valve test is scheduled for the set of five valves and possibly a replacement set. This will have to await the next visit to a local club member who has a very nice looking and much in use, Mullard Valve Tester. The 870A used with a 30 foot external aerial is in use most evenings as background whilst in the shack messing about. Once warmed up and set to my favourite VOA station on 15 Mc/s the stability is exceptionally good and even after a 3 hour listening stint no retune is necessary. Billie Coleman.

Eddystone

PANORAMIC RECEIVERS



The display unit is designed for secondary use as a "wobbulator", to check the alignment of the receiver unit, with the advantage of knowing thereafter that the overall performance is at a maximum. The addition of the display unit does not in any way affect the operation of the receiver for standard applications.

Three complete combinations of receiver and panoramic display unit are offered, with details as follows. Other combinations can be supplied to special order.

The complete installation is relatively compact and blends well with other equipment. Tie-bars at the rear make for a rigid assembly and, with the inclusion of the speaker plinth, the backward tilt leads to ease of viewing and ready operation of the controls.

EPR26 (v.h.f.)

The illustration shows the EPR26 Panoramic Receiver, which comprises a standard 770R Mark II receiver, EP17R display unit, and Cat. No. 906 speaker plinth. Visual display is obtained over the normal ranges of the receiver, from 19 Mc/s to 165 Mc/s. Maximum scan is one megacycle and the other characteristics are as set out elsewhere in this Catalogue. Total power consumption is approximately 150-watts.

EPR27A (h.f.)

The second panoramic receiver is the EPR27A, a combination of the 830/7 receiver and the EP20 display unit. The appearance is similar to the illustration and the frequency coverage is from 300 kc/s to 30 Mc/s. The maximum scan is 30 kc/s (as dictated by the selectivity characteristics of the receiver) and a high degree of resolution is possible. The EPR27A is of particular assistance in correctly setting up h.f. equipment for s.s.b. and f.s.k. operations.

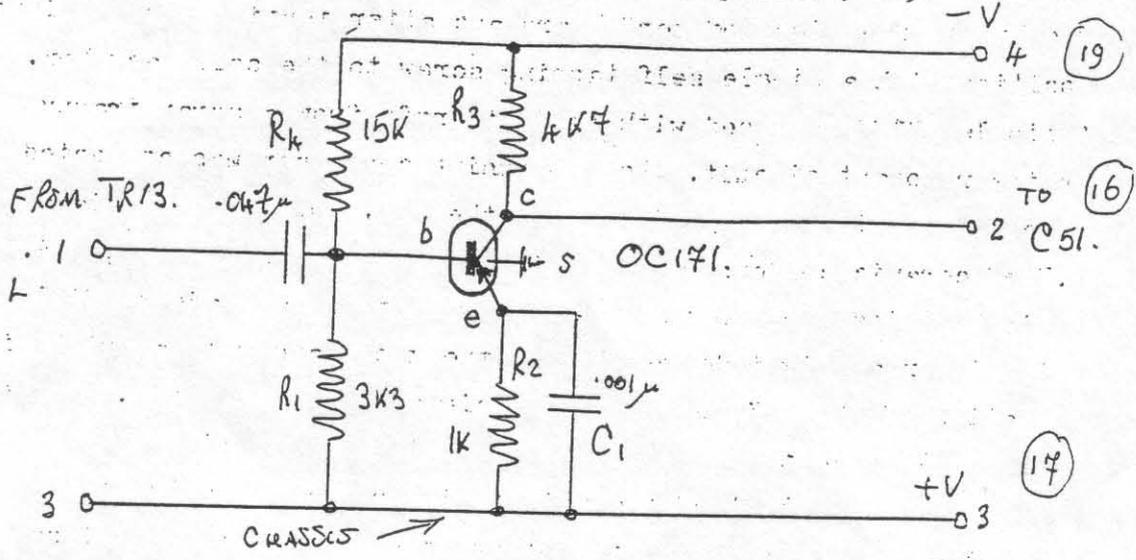
EPR29 (u.h.f.)

Panoramic reception over the range 230 Mc/s to 870 Mc/s is provided by the EPR29 receiver, which combines the 990S receiver, EP17R display unit, Cat. No. 939 I.F. Converter Unit, and Cat. No. 906 speaker. The overall sensitivity is high and both AM and FM signals can be studied in detail. Total consumption is about 110 watts.

In both the communications and laboratory fields, a complete panoramic receiver will often allow tasks to be carried out quickly, simply and effectively, in a way only possible otherwise with a range of expensive equipment, which, where it exists, may well not be available at short notice. Visual monitoring; measurements of frequency, carrier amplitude and modulation; presence or absence of spurious responses and emissions; setting up transmitters and receivers for correct operation on s.s.b. and other modes of signal; studying the character and level of interference; are some of the applications which readily come to mind. It will be appreciated the higher apparent overall sensitivity of the panoramic receiver, whereby a signal barely audible can be clearly seen, is a considerable asset when carrying out bridge measurement operations. The practical communications engineer will obviously find the combination of much value in his work. Again, as an aid in teaching, the panoramic receiver can be very useful and save much time. A student can observe at a glance variations brought about by changes of amplitude, modulation depth and character, bandwidth, insertion of filters, and other factors.

- EB35 Mark II. -

- The main circuit difference between this mark II version and the basic EB35 is the addition of a pre-amplifier stage between the VHF/FM tuner output and the first IF amplifier, TR3.



- This untuned 10.7 Mc/s IF amplifier is on a 3 inch by 1/2 inch PCB mounted on the same chassis frame as the normal IF/AF PCB. The new PCB is marked as 7532P/L on its top, component, surface and 7532P/W on the track side. A type OC171 transistor is used and a total of four resistors and two condensers are used in the circuit. Whether this was in fact fitted to all of the first mark II models off the production line is not at all sure. I have been shown a mark II with a very early serial number which does not have the pre-amp !

- Noise limiter on an EB35. -

- A quite professional mod appears to have been done on one EB35 and it has been done in such a way as to blend in with the original front panel. The front casting does have a pre-drilled hole to the left of and lower than the main tuning Knob. This position is used on the mark III version for the AFC on/off switch. A single pole, single throw toggle switch is fitted & a simple series type noise limiter circuit is fitted in the detector output. The toggle switch is wired across the diode so as to short it out when the toggle is in the up, off, position. A type OA90 diode has been used but any signal type should be satisfactory.

- BFO on an EB35. -

- The front casting has a pre-drilled hole between and below the on/off and volume controls, a hole was made through the escutcheon and a small 20 pF variable condenser was fitted with a matching Eddystone type knob. The simple 465 Kcs oscillator was built on a piece of perf board and after testing was put into position with a single self tapping screw to the coil pack box. A single BC108 was used with an IF transfo from a scrap tranny as the resonant circuit. The BFO tuning condenser was connected across the main primary winding of the IFT. Coupling was via a 4.7 pF ceramic condenser to the input of the first IF amp, TR4. A single white spot on the BFO tuning control was made by filling with Tippex a slight depression on the knob made with a drill bit. Operation of the EB35 on CW or SSB signals is now a snip, the use of a double pole toggle switch mounted in the predrilled hole below and to the left of the main tuning control enables one pole to be the BFO power on and the other pole to be the AVC off switch which disconnects the normal AVC and earths the AVC line via a 10 K resistor.

- EB35 Indicator lights. -

- The spring loaded push on switch has long been a 'nuisance factor' to me when using my EB35. Since it is used with the power supply unit for AC mains there is no problem over the high current drawn by these lamps. A similar type of switch without the spring loaded position was obtained for 50 pence, they can often be found at rallies. This was fitted and I am now able to operate my EB35 in the dark, a very useful option since this is my bedside radio! If it is still required to operate the EB35 from battery supplies then a mod that will cut down on the heavy current drawn by the two filament bulbs is to replace them with two green or amber LEDs if mounted in series and with a series resistor then the two will draw no more than 20 milliamps, just one fifth of that needed with the original bulbs. At this level they can be operated in the permanently on state.

- THAT is IT again for another issue & another year, Happy Xmas to all of you from Kathy & I, a prosperous New year and may it feature a new Eddystone for you. What will E.U.G bring this next year? Well for a start next issue features the 730/4.

- MEMBERS ADVERTS. -

- WANTED, Eddystone 830 or 940, also Eddystone diecast speaker and diecast 'S' meter to match. Ring Anthony on 0686-630255.
- WANTED, Component values and valve data for the Eddystone ECR model of circa 1936-38. Also info on 8 valve battery superhet as described in Practical and Amateur Wireless, and Practical Television of August 1936, set was 'tropicalised, with AVC and push-pull output and was on stand 23 of the Wireless Show of that year, write to Andrew c/o EUG. Can copy and return.
- WANTED, urgently info on the MIMCO badged model 3873a which appears to be a 670C model for AC only use and with MIMCO spec; differences. Can copy and return, Peter c/o EUG.
- Wanted for reference purposes by EUG - copy of Brimar valve data book, 1950s vintage, mainly interested in the octal, B7G, B8A, B9A types as used in various Eddystone models. Contact EUG.
- WANTED, CIRCUIT DIAGRAM FOR THE 770S model. THIS IS URGENT to get a 770S working. Have the manual but no schematic. PLEASE HELP. John c/o EUG.
- WANTED, for model 750, the IFT3 transformer, part number 1535 in Strattons catalogue. H.S Hartwell c/o EUG.
- OFFER from member of two 4 pin coil formers and bases, can also get some valve type output transfos, write to K.A. Sugg. 28 Well Close. Winscombe. Avon. BS25 1HQ.
