

22

E.C.R.

# Eddystone User Group



## Newsletter

Issue No: 22.

### Featured Model:

- The E.C.R. -

- A Ten Valve Communications Superhet, Four Bands  
Covering 1.6 to 33 Mc/s.

- Released in 1936.

\*A non profit newsletter for Eddystone Users

\*Information quoted from Eddystone Literature by kind permission of  
Chris Pettitt, G0EYO, Managing Director of Eddystone Radio Limited

\*Please address all mail to:

W.E. Moore, Moore Cottage  
112 Edgeside Lane, Waterfoot  
ROSSENDALE, Lancs, BB4 9TR

\* FREE MEMBERS ADS \*

WANTED - help with repairs in my area (Glasgow), have non-working A.F oscillator and Frequency counter. GMØKMG, Bill Gibson, 180 Castlemilk Rd, Glasgow, G44 4NS.

SELL - by Ted Moore, a number of Eddystone Receivers, e.g. - 750, EC10, 770S, 840A, 990S, EP17R, 840C, 680X, 888, 40A, 640, 770U/2, 940, 1 off Black diecast speakers type 688, Ring Kathy on 0706-218290, evenings only after 6.0 p.m. There is one PROBLEM and that is, they must be collected, cannot send or deliver. Also one Trib 9R59DS valve receiver, one FAX-1 weather fax unit direct from speaker output of your set, software for FAX, CW, RTTY and it runs from 12 volts.

WANTED - Desperate to obtain for my ECR, drum dial, cabinet and front panel, please can you help, or suggest ? SELL - modules 1,2,3, &5 for model 964 receiver. WANTED AR88D any condx for parts or rebuild, will consider anything, ring Nick on 081-852-4065.

WANTED - Help with repair of my 770R, will pay or offer a 358X in payment, John Redmond, 38 Ochilview, Devonside, Tillicoultry, Clacks; Post Code FK13 6JD. Scotland.

SELL - Have 358X for disposal, needs work done on it, good winter project so if interested ring John on 0282-32166 or 414670.

SELL - Books Radio & Tv Servicing Vol II, Molloy & Poole, £5.00 also Modern Practical Radio & Tv, Vols; I,II,III, Caxton, £12. Contains info on many Eddystone sets, GMØKMG, Bill Gibson, address in ad above.

SELL - My late father's gear, AVO valve tester, uncased oscilloscope, signal generator, boxes valves, condensers, resistors, transformers, etc; If interested ring Ken Whyld on 0472-851374.

WANTED - handbook for 840A, ORIGINAL not photocopy, would swop for a spare EA12 handbook or buy. SELL - 840 in good condition and working order, new fascia plate, £85. Ring Anthony on 0686-630255.

SELL - 940 receiver, in immaculate condx; original box with handbook, plus Eddystone Guide to SW listening and warranty card, for a serious collector, £250. WANTED - EA12 receiver in GWO, would consider swop with cash adjustment. Ring John on 0252-844248, evenings/weekends.

WANTED - MATCHING SPEAKER FOR 830, EITHER 906 PLINTH TYPE OR 935 IN METAL CASE. INTERESTED IN PURCHASING 960 RX. TEL TONY. 0686 630255.

SELL - 770R MKI IN WORKING ORDER. BUYER COLLECTS £75. O.N.O. TELEPHONE PETER. 0792 206418.

- Whose Newsletter ? -

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- Another issue and I have to start by repeating that whilst the newsletter is put together by Kathy and myself most of the 'input' comes from you, the EUG members. Keep those interesting letters coming in, whilst you may not see your 'experience' in the following issue it will turn up eventually. You do not need to have your name quoted, some of you are quite rightly chary of advertising to others your interest in radio, okay by us. Many of the snippets in 'Sferics' are obtained from such sources, other times you may ask to have your name mentioned, just as you wish.

- Direct replies to your letters, okay if you so want but there may be a delay in you receiving the reply, and do please remember the S.A.E. Otherwise queries will be answered in a later issue.

- Schematics and manuals, okay we have either the instruction book plus schematic, or the full manual for most models, for a copy just write to Kathy.

- Queries such as, where can I get such and such a valve for my 640, or 840 or other model. It really is NOT necessary to write & ask me that. If you do not get one of the hobby mags such as PH, SWM or WM then you can in most cases see a copy in the reference or reading room of your local library, there are always ads for valves in these mags, transmitters too if yours is a solid state model.

- On the subject of solid state, no I cannot say that I am biased particularly against these models as one member did suggest, just that my preference is for 'hollow state' as my servicing years were spent mostly on these. There now I am showing my age.

- The featured model, as previously mentioned in a newsletter I pick them from the requests received, you want to ask for your model okay go ahead, and it will come up in a few issues.

- One member has asked if he can quote bits in a club magazine, no problem Ian, the idea is to help others interested in Eddystone sets so go ahead and quote, some members have been instrumental in getting others to join EUG in this way.

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- A Duff tuning Indicator on a 770R.-

- This had been U/S for some time and pure laziness is the only excuse for not tackling it sooner. The long winter evenings gave me the necessary impetus to hoist the 770 onto a work table and open it up. The meter is in a bridge circuit in the Kathode of a 6AU6 stage, it serves a dual purpose as an 'S' meter on AM and a centre tuning indicator on FM.

- Since it was inoperative on both modes I went first for the potential divider circuit which has R91 the balance pot as its central component. This pot was the first to be checked and it was found to be okay, but was cleaned with switch cleaner anyway. Next stop was R90 which connects this to chassis, it checked out okay and so I went to R92 which goes from the pot to HT line. Again this was fine but then I checked with my meter prod on chassis instead of, as at first, on the lead of the resistor. That was it, the soldered joint where R90 went to chassis was 'dry', it read a very clear 'infinity' on my Avo. The joint looked alright but I proved it by resoldering it to the tag and hey presto, a working meter again.

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- Non Working 830/5.-

- The 830 was very much used, both by its former owners where it was on twenty four hours a day for many years, and by myself since getting it four years back. The problem came shortly after switch on recently, output disappeared after some minutes although there was noise from the speaker and a check on the AF stages showed they were still working. The usual checks were made with a meter and a signal generator, all was fine until I got back as far as the 6AJ8 second mixer - V3a pentode. (Hexode surely ? Ted.) Here the anode voltage was down considerably and there were signs that R25 the 3.3 Kohm decoupler resistor from HT line to LFT had been overheating. Sure enough I found that the 0.05 mF paper type condenser which decoupled this to earth was leaky, very leaky as it read less than 500 ohms. A replacement was fitted and the 830 came back to life. On the theory that there is no smoke without fire, (!!!), I intend replacing all the paper type condensers, a list has been made and I am purchasing them bit by bit, the job will be tackled when I have them all. Simon.

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- Featured Model - The E.C.R. -

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- Whether the ECR stands for Eddystone Communications receiver as is claimed by one former Strattons employee I cannot confirm, but this set was their first true effort at producing a genuine professional model. Designed in the mid 1930s it was a ten valve, five band superhet for AC mains operation.

-The circuit was quite conventional for those days, even to the 465 Kc/s IF, an RF amplifier, mixer and separate local oscillator, followed by the two stages of IF amplification, a double diode triode AF stage which fed the output stage - a tetrode valve no less.

- As befits a comms; receiver a BFO was included, as was the mains rectifier power supply. The chassis, coil unit and crystal filter unit were all made from aluminum diecastings. A foretaste this of models yet to come.

- Complete stability is ensured by very thorough screening of all stages, that this is effective is shown by the HF performance. This is the first Strattons model to use a switched coil pack, unlike most receivers of that era which had plug in coils. A full range of 1.6 to 33 Mc/s is calibrated in Kc/s, with electrical bandwidth provided throughout the range. A crystal gate filter can be switched in/out as required and a phasing control is provided, as is 'selectivity variation' - the term used in an ad for this model in 1938. Both RF and AF gain controls are fitted, together with switchable AVC. What was then called an 'R' meter, now known as an 'S' meter, was provided on the front panel. It was calibrated in dbS - but relative to what?

- The quoted specifications show that for its era the ECR was a top of the line model;-

- Overall sensitivity of 3 microvolts for 50 mW AF output.

- An IF sensitivity of 12 microvolts, or 15 with the crystal filter in, and phased.

- Selectivity of 9 Kc/s at 20 dbS down, or 16 at 40 down.

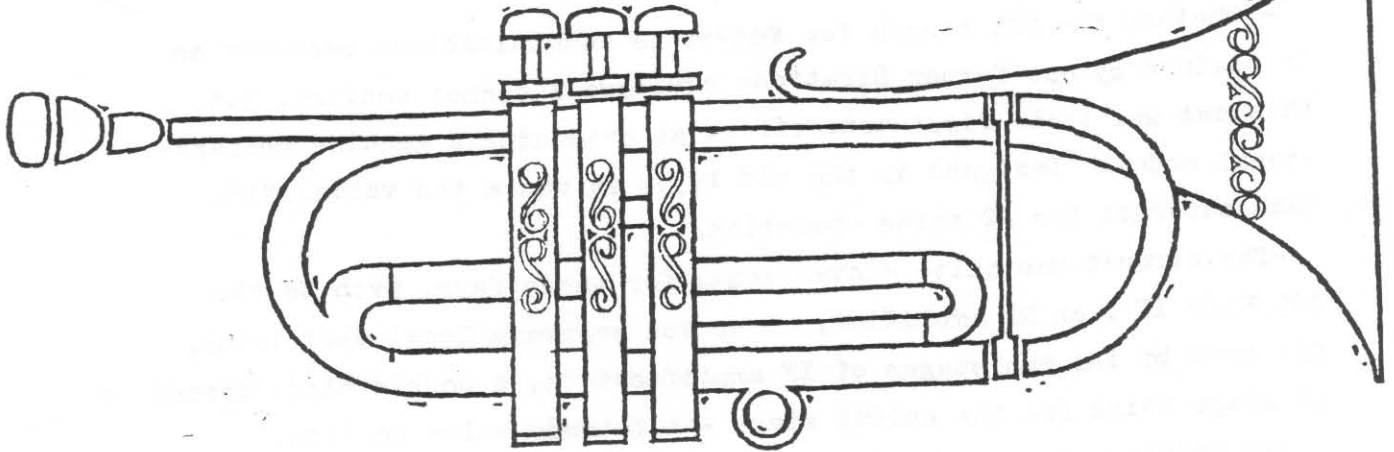
- AF output impedance of 2 Kilohm for phones or 120 ohms for speaker.

- Price of £45-0-0d, a LOT in those days.

- A block schematic of the ECR is in this issue, needless to say it is pretty rare, two known in working order according to members.

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**Opportunity  
to blow!**



It's not unusual to sound off about extraordinary achievements. So we're taking time out to say that Connollys have continually supplied telephone cables to the British Post Office for over 58 years! We also supply cables to most countries abroad.

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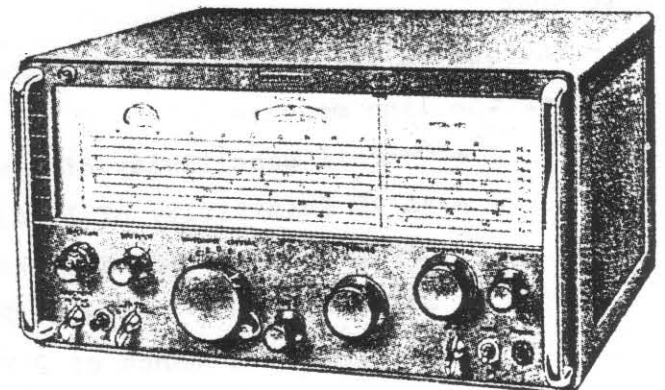


## Eddystone 830/7

### Wide range communications receiver

#### PRIMARY FEATURES:

- **I.F. SELECTIVITY:** Over-all bandwidth continuously variable within the limit of 1.3 kHz and 6 kHz and narrowed to 50 Hz when using the 100 kHz crystal filter.
- **VERSATILE TUNING:** Incremental control allows tuning to within one kHz with main tuning standardized against internal crystal calibrator.
- **CRYSTAL CONTROL:** Instant changeover to crystal-controlled operation with rapid selection of up to eight spot frequencies.
- **HIGH STABILITY:** First and second oscillator circuits can be crystal-controlled for high stability operation.
- **SENSITIVITY:** Better than 3 microvolts for a 15 dB signal-to-noise ratio.
- **RECEPTION MODES:** Accepts C.W, A.M and S.S.B modes.



Comprehensive technical data available from:

Eddystone Radio Limited, Eddystone Works, Alvechurch Road, Birmingham 31. Telephone: Priory 2231. Telex 33708

A MARCONI COMPANY

LTD/EO32

P.O. JOURNAL. JAN. 1968.

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- A Holiday Receiver, the 870.-

For more than 20 years my 870 has accompanied me on my annual summer holidays and the occasional spring breaks. That is until last April, it had been tried out for a few hours at the home QTH the evening before we left for Scotland.

Upon arrival I fired the 870 up from the socket in the Hotel, result was a wisp of smoke and burning smell - but deafening silence. Some 300 miles from home with but a screwdriver & wirecutters I had expectations of a holiday minus my favourite SW programming.

When opened up it was soon found that the 'hash filter' input choke was charred up and seemingly open circuit, but why? Some more continuity tests with a bulb and battery showed that the rest of the A.C input circuitry seemed normal. It was decided to short out the choke sections in both live and neutral lines - for good measure I also snipped the end of C44 going to the live side of the choke.

The set was powered up again and this time operation was normal, just as it had been at home the day previous. Now something had caused the choke sections to overheat & char, but what? Anyway the important thing for the moment was that my 870 could be used at my holiday QTH.

Two weeks later - at home - the 870 was given a 'proper' check with an Avo and it was found that the 0.05 mF, C44 was reading only a few hundred ohms across it. No doubt the cause of the charring, but why had it gone like that? Anyway I refitted a 0.05 mF polystyrene of 750 v.w. A.C and rewound the double choke myself using a slowspeed drill and wooden core. All is now back as it should be and the 870 is working but I am collecting a complete set of replacement paper type condensers and resistors for a complete re-build job, hopefully in time for my summer holiday. This brings up the point that paper type condensers after some thirty years of life must always be suspect and if at all possible should be replaced.

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- Dial lights for the 670A.-

My 670A was acquired quite recently from the Leicester Rally and, whilst in good working order it does niggle me that no scale lighting was/is provided. With a view to rectifying this situation the circuit diagram was consulted and the 'opened-up' 670A was examined.

Like so many models which do not have scale lighting there are actually cutouts for bulbs to be fitted, just along the top of the scale. All that is needed is the bulb holder and the bulb, plus a thermistor of the type already fitted.

The 670A was designed for use on 230 volt mains of that era. It

6/ is in fact being overrun on 240 volts. I decided that the addition of a 6.5 volt dial bulb, rated at 0.1 amps, and shunted by a thermistor would help reduce that extra 10 volts. It was easily done as the thermistor and bulb wired together would clip into the 'niche' provided and the two wires would then be routed down to the underchassis area. The wires went down below and past the speaker and then up towards the ballast resistor. The wire from V5 to the bottom end of the ballast resistor contains the thermistor shunted by R36, a 560 ohms. This was cut and the two wires coming from the bulb/thermistor combination were then joined to the two ends of the cut wire. No problems were encountered here as a small 3 way tag strip was anchored under a nearby screw and used as the connecting point. Upon power up all was okay and the 670A had its scale light, sufficient for operation in a darkened room as is often done here. It would have been possible to fit two 5.0 volt or two 6.5 volt bulbs and operation would still have been okay, but as I had just the one Eddystone type bulb holder in stock I made do with that. No circuit is given as the above text is self explanatory.

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- Dead on Arrival 680X.-

- This had been bought 'as seen' but with the added statement that it had until recently been in daily use. Well it was dead when I got it home and plugged in. They come no 'deader'. I had first tried with phones plugged in and then attached a speaker but to no avail. A quick check on the valve filaments showed a healthy red glow and the stabiliser valve was giving its normal purple glow so some HT must be present. I decided to check the anode screen volts starting with the p/p output bottles and working back. Anode volts on the p/p anodes was marginally high at 230 volts, as was screens at 225. I checked the kathode volts and found that there was over 200 volts there on the strapped kathodes, this instead of about 11.5 volts. The set was switched off and one end of the bias resistor, R51, was disconnected. The Avo showed it to be a good open circuit - if such can be called 'good'. A replacement 560 ohms was tried as no 520 wirewound was to hand. the 680X fired up immediately and worked well on all bands. A suitable 620 ohms, 1 watt wirewound was purchased and fitted later in the week. No further work is needed and the set is now functioning daily and giving a very good performance when compared with my FRG8800. Operation of the 680X is far more user friendly than it is with the FRG, I can never get used to any set which does not have the facile tuning that exists on the old Eddystones.

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- The ECH35 - 6K8 Problem. -

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Those older models of Eddystone which use the octal series of valves frequently utilise a type 6K8 valve as frequency changer followed by the familiar EF39 and EBC33 types. On many occasions a type ECH35 has been fitted in place of the 6K8. The set does work, no doubt there, BUT, there are differences in between these valves as a look at the manufacturers data will show. I found that whilst my 640 was quite easily set up to meet the specified figures for overall sensitivity with the 6K8, it was down on gain with a type ECH35 fitted. Additionally there was a slight calibration difference on 28 Mc/s when the ECH35 was used.

- S Meter fault on a 770R Mark I.-

The 770R was normal in all respects with the exception of the 'S' meter which could not be zeroed on AM nor centered on FM. A change of V11 the control valve, a 6AU6, changed nothing and so a check was made of the passive components in the circuit. It was found that R91 the setting pot had a cracked track at the earthy end, a new pot was eventually located by phoning around. When fitted the 'S' meter circuit was fully functional again. Time taken was about three hours and cost including postage of the pot was £1.50.

- Low Gain 820 Tuner Unit.-

This 820 had been working normally for more than 25 years in my shack, not even a valve change. During one hot summer afternoons operation the gain gradually fell off to the point where it was no longer possible to tune in the local R2 FM signal at all. I set to whilst the 820 was still hot and this did help, as I checked the anode and Kathode volts on the various stages I came to R18 the feed to the local oscillator section of V3. This had full HT on one side and just 28 volts on the anode side of it. Far too low as the spec says it should be around 79/80 volts. Having powered down and chopped out the still warm resistor it was put across the Avo and measured at over 100 kilohms. This for a 27 kilohm item. A replacement 27 kilohm was fitted and the 820 was working. Out of curiosity other resistors were checked and a total of 9 were found to be well out of tolerance, these were R14, R16, R21, R26, R30, R31 and R35. A funny one was R36 which according to the schematic should have been a 500 ohm wirewound. It turned out to be a marked 270 ohm component. My 820 has been in my possession since purchased new and this item was original.

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-Computer Hash on a S.640.-

This was a recent problem and was found to come from a newly acquired computer owned by the next door teenager. Use of the computer seemed to be mainly during the evenings and since this coincides with my listening periods something had to be done.

A first step was to decide how the 'hash' was getting into my 640, easy enough to disconnect the aerial and 'voila' - no hash reduction at all. So my aerial system, located on the far side of the house from the offending noise generator appeared to be okay. With the aerial disconnected a check was made and it was found that the hash was present all the way from the LF end of the receiver coverage right up to some 16 Mc/s.

This meant that the wide band noise must be coming into the screened 640 case via the mains. A check on the circuit diagram and in the 640 showed that not only was the mains transfo screened but that an inter winding screen was also employed. The eventual cure was sufficiently effective for me to again go Dxing on top band in the late evenings, but many different permutations were tried before this cure was finalised.

My 640 ended up with 4 extra condensers and 2 RF chokes, but the 10 to 12 hours spent on the set have cleared up all the hash except a very weak warble on 6.0 Mc/s, this is the frequency of a crystal used in the computer, since it is so weak as to cause no 'S' meter deflection and there is no trace at all of it on the 12 Mc/s harmonic position I feel that it is useless going any deeper into my QRM elimination.

I now have a pair of 0.001 mF mica condensers from live and neutral wires as they come into the 640, with 10 microhenry RF chokes soldered directly to the primary input of the transfo so they are in series with the incoming mains, a third 0.01 mF mica is across from live to neutral of the primary. This did clear most of the hash but a final addition of a 0.001 across the pins 1 and 8 on the octal rear mounted socket, where HT is brought out for auxiliary use, was the clincher. It was all done in such a way that should the set need to be put back to original at any time then minimum work would be needed.

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- More Selectivity for the EB35 series. -

- Two letters in recent weeks have mentioned this, in the one case a member with an EB35 II which he uses for Medium Wave Dxing of Transatlantic stations, in the second case a member who uses his EB37, (very similar to the EB35 but minus the FM band.), for SWLing with a home made kit type of external BFO when listening to amateurs.

- Suggestions made have varied from the use of the various ceramic type filters on the market to an audio filter as is used on the EC10, this again has a similar circuitry to the EB35 sets.

- I cannot see, from looking at the schematic of this model, that either of these would be easy to fit into the circuit with out some major modifications. As you know I am not in favour of mods myself but still, if a member wants to do it on HIS Eddystone, so be it.

- The idea of the L-C type CW filter on the EC10, well it would be fine for just CW listening of course and no problem to fit, a copy of the EC10 schematic is all the guidance you would need, & some practical know how. It would not help on AM Dxing though, a too narrow bandwidth and tendency to ring on speech/music rule it out.

- The ceramic filters, well again some surgery would be necessary but it does offer more hope. With a six decibel per Kc/S bandwidth and a six dbs insertion loss some improvement could be made. From the circuit it would not be just a case of snipping a track and inserting one in the IF amplifier strip. At the least it could involve replacing the fitted IF transfo with one of the combined units containing input and output transfo plus ceramic unit. These are made in a number of different IF frequencies, I have seen 455 and 468 in catalogues, from one reader of the newsletter I learn that he has a 465 Kc/s unit.

- If any member does this mod successfully maybe he will let EUG members share his results, successful or otherwise. But I have to say I will not be trying any of these mods on MY EB35.

- EB35 / EB35 Mark II. -

- One of the letters re the above mods did query the difference between the original model EB35 and the later version the Mark II. (There is a later version also the Mark III but it is altogether a different animal.)

- Well I do have one of each myself so here goes, very similar

circuitry in both of them with the exception of a booster single transistor stage in the FM IF amplifier line-up. This is just an OC171 type tranny with a few associated resistors and condensers which follows the VHF tuner and precedes the IF strip proper. Some minor component differences too, a more standard 8 ohm speaker in lieu of the 10 ohm fitted earlier, AC type trannies replace the OC variety in several places. Externally the Mark II has certain subtle changes in styling, a brushed silver front panel is used whereas the EB35 had a black panel. The Mark II has the earphone jack removed from the front panel and fitted at the rear. Coverage is the same and there is on the dial glass the designation EB35 Mk II in the lower left corner. One other difference is worth noting - mine has the NATO stores reference 5820-99-523-7337 stamped into the lower centre of the front escutcheon, below the TONE knob. I do not think all EB35 II had this as the photo of one in a Company pamphlet does not show it.

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 - MIMCO models, of Eddystone Origin. -

- Despite being an Eddystone group with an interest in Eddystone products, many queries that come in from members do relate to the various models which were produced and 'badged' for other companies, not just MIMCO. At a quick glance through the listing I can count some 15 companies worldwide whose logo has appeared on Eddystone products, the final number is probably many more than that of course.

- When - and where I can help I do so by providing the equivalent Eddystone manual or circuit. Sometimes this cannot be done because neither the writer nor I can match up the model numbers. In such cases it would be helpful if when writing for information you do quote not only the MIMCO, (or other company), model but also do a few freehand sketches of the front panel layout, state the band covered, sketch the valve/IFT layout, show the rear panel connection layout etc; This was possible recently with a 670 picked up by one member in its Marconi guise. If any members do have info on these dual/triple identity models then let EUG know please.

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\* - SFERICS. - \*

- No, I do not believe it either. One member wrote in to say that he found it difficult to believe that Eddystone were going to market a Ham band receiver. Where on earth did he hear that ? There would just not be a sufficiently large market for one, at the price that such a model would command. Anyway there is, and has been for several years such a glut of Jap Black Boxes on the market that they are reduced to price-cutting wars to clear the stock.

- All Short Wave stations are going over to SSB and soon there will be nothing to listen to on the oldies, such as 670, 870, which have no BFO. Well a smidgen of truth here, the trend is to SSB and some are already using this mode, viz; HCJB in QUITO Peru. But, never fear it will take years for many others to change over since there is no cheap and easy way of modding those expensive high powered transmitters to SSB. Many of these Broadcasters are operating on reduced budgets anyway. No, your old faithful AM receiver will still be usable for many moons.

- GAM I, the ionospheric research station on 3.8123 Mc/s, has anybody heard it yet ? Only one member has mentioned it in his letter so far, his QTH is Norway. Do listen out for it, and I understand that reports of its reception are of interest to the RSGB.

- Halcyon Electronics, in Wimbledon. I have had mention of this firm in several letters from members. Seems they do have various older Eddystones at times, but from what the letters say the prices are a bit over the top. I can quote one member who paid a £100 plus carriage of £30 for an 840A. He could have had one advertised in a recent magazine personal advert for £45.

- Time on your hands ? (wish I did, never have enough.) Why not use the time to clean up your receiver, remarkable just how much muck can get in through those louvres over the years, the removal of several spiders webs from the cone area of a venerable loudspeaker in a 670A did wonders for the quality of the audio output.

- The EA12, some of us think the best valve type Hamband receiver ever, there is a very nice one on show in the new RSGB headquarters. It is with a Labgear Tx - anybody recal that one ? I must be showing my age.

\*- SFERICS.-\*

- Many letters re the addition of a BFO to one of those not so fitted, like the EB37. It is an easy job, kits are available on the market, at a price. Why not make one yourself though for pennies, and fit it internally. Several members have written saying that this has been done successfully. All you need is a general purpose transistor, an old IF transfo from a cheap tranny and a few other R & C items.

- Super Dooper Loop Aerial for MW Dxing ? Well here is an idea for you. Stewart Davies has used an 18 inch square of single sided copper plated PCB sheet. He drew on and then etched his 40 turn loop, starting from close to the outer edge and going inwards towards the centre. He then etched this in a large flat photo developing dish, a two gang miniature PCB mount condenser and slide switch are also mounted on this 'PCB' so as to switch in more or less tuning capacity. Result a Hi-Q frame aerial assembly, light weight too as it can be hung on the wall. PCB sheet cost him £2 at a rally and the other items were in use already.

- Oscilloscopes, some good cheap second user ones on the market these days, usually not wide band stuff but good enough for the basic needs of a valve radio repair job. Even if you know little about the theory side they can be of help. Just waving the probe in the vicinity of the oscillator gang of a tuning condenser with the scope sensitivity turned up, will show you some kind of trace if the LO is working, a non-runner - no trace. Works the same on the IF and AF stages, stick to valve control grids to avoid nasty anode volts and you will be okay.

- ICs are being developed nowadays with a built in test and display fault circuitry. Wouldn't this have been nice if available on some of those ex WW II surplus receivers that we all bought in the 40s era. Mind you it would have taken all the fun out of it.

- An EC10A recently acquired with all the trannies blown, seems to have been put on something like 24 volts as some of the electrolytics have succumbed too. Quite a challenge to refurbish this one, just getting the right trannies will be a job and a half these days.

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- 888 Amateur Bands Only. -

- As bought from an old-timer at the club the 888 did work, he swore it had never been opened from new, and from the condition of the screw heads I had to believe him. When powered up I found that whilst it worked okay on all bands there did seem to be more noise than signal on range 1, the ten metres band.

- Taking it out of its case for what must have been the first time since leaving the factory I did a valve test on all 12 valves, after some 35 years all still showed 'in the green', an amazing thing when I consider that several of those in my R 1155N have been replaced regularly over the years for low emission.

- Next came some checks on alignment, all seemed okay except that the top end of range 1 was down on sensitivity, but tracking checks showed something wrong. After several wrong forays I finally reached the grid feed condenser to V3 the local oscillator, this is a silver mica 50 puff type. A replacement silver mica 47 puff of more recent manufacture effected a complete cure, checking on the capacity bridge showed that it was reading less than 20 puff. (for those who are not aware of the fact, 'puffs' are picofarads, I guess Don has got some trade servicing time in, Ted).

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- An 870, mini set, maxi fault. -

- The 870 as bought had not been used for many years, storage had been in a variety of places, latterly a damp garage.

- No attempt to power it up - the sight of the rubber covered mains lead was enough to deter anybody from what would have been a near suicidal act. The set was opened up and a list made of items that could be seen to need replacement. The mains lead was first, the dropper too, the resistance wiring was loosely curled around the ceramic former, R21 a 1500 ohm wire wound looked in a bad way, all bubbled up and some of the infamous green goo did not augure well. Checks on CH 1 the inline mains filter choke showed that it was okay, to be sure it was removed, resoldered the joints, left overnight on a radiator to rid it of any residual damp, and then given two coats of varnish to seal it. New mains lead was fitted, a replacement for R21 was obtained and fitted easily across the thermistor. Last was the dropper, well did I need it ? after all the 870 was going to be run from a 12 to 110 volt inverter unit, for caravan use. The lack of a replacement decided me, I left it out of circuit but did

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Cont;-

remember to put a large sticky label on the rear saying '110 Volts Only'.

- Both dial bulbs had silvered over internally, these when new had been 5 volts at 0.15 amps; types but all I could locate were 6 volts at 0.15 amps; in the event they work okay. The 870 was checked for insulation resistance between outer case and chassis, all seemed okay there too but for safety I replaced the C4, 0.01 mFarads paper type condenser with a similar value 'x' rated polystyrene type. When the 870 was finally powered up from its inverter psu there was no problem with noise, something I had worried about as these invertors are quite notorious noise generators. The IFs did not need touching, the RFs and mixer trimmers on both range 1 and 2 did need a touch up at the HF end of those bands. One last item I spotted before boxing the 870 up was the short screened lead from the centre of the volume pot; to C35, thence to the V3 grid. It looked very unhealthy with cracked insulation and was replaced with a scrap length from the junk box.

- The 870 is now operating nicely in its caravan QTH, after some three months no problems have surfaced and much pleasure has been had from it, aerial is about 30 foot of wire to a nearby tree. The selectivity is good enough for most purposes but I am considering a look at increasing selectivity by increasing, maybe even removing the damping resistor across the secondary of T1, the first IF secondary winding. Has anybody got ideas about this? I think it might help on short wave when trying to separate the stations.

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- Rarely does a month go by without several queries as to this model. My own sample soldiers on happily, with but a few valve changes and some paper condenser replacements some five years back.

- Recent mail has included details of faults affecting a number of 840A receivers, of interest to others who own this model, and might experience similar malfunctions.

- An 840A which developed very severe AC mains hum, starting at a low level on warm up but increasing to high, nuisance level within 20 minutes. This was eventually traced to C61, a paper type of condenser which is directly across the anode and cathode of the half wave mains rectifier valve. When removed from circuit and tested it was found that a mere 24 volts across the end wires caused the C61 to go from near perfect insulation, measured on a low voltage DVM, to around 50 ohms leakage value. A replacement polystyrene AC working type was fitted to cure the problem.

- Another sample of this set came in with the report, 'okay on phones but no L/S operation. An easy one this for me at any rate. The phone jack was removed and sure enough the dreaded green gunge was in evidence on the break-jack contacts, green gunge or gremlin goo as some call it, is usually in evidence when a set has been in a humid atmosphere, in this case the owners shack was a garden shed and heating was from a paraffin stove, notorious for producing water vapour as the paraffin burns.

- Yet another 840A owned by a member recently became somewhat undependable in that whilst it would occasionally fire-up okay when powered up, more often than not it stayed 'dead' as a dodo. No valve heaters even. After trying all of a spare set of valves to no avail the mains dropper and dial bulb were checked, just by accident the end wires of the thermistor were jogged by the end of a screw driver, whilst power was applied. Sure enough the set came to life. The end wires on the thermistor are simply wound on the rod ends and soldered, good contact being effected by the combined contraction of the wire when cooled from solder temperature and the expansion of the rod when at its operating temperature. A thorough resolder job on both ends of the CZ1 cured the problem, be warned though. DO NOT USE modern low melt PCB type solder for this job. Use a high tin content high melt solder as used on valve equipment.

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16/

- SSB reception on the 888A.-

- As all owners of this excellent model will know the problem with using it on SSB is that in this mode there is no AVC action. Confusing to many who do not realise that their inability to resolve SSB signals comes not from a fault on their 888A but from their own incorrect operating techniques. Tune in an SSB signal of just fair strength, say Shanwick, and the distortion produced is quite disconcerting, making correct speech resolution impossible.

- This is nearly always because either, or both, the RF and IF gain controls are too far advanced, but all is not lost. There is a correct method of resolving SSB on this, and similar models.

- Firstly turn back both RF and IF pots to about '9 o'clock, at the same time turn the AF pot up to almost full, lets say for comfort we put it to the  $\frac{3}{4}$  full position. The signal should now be tuned in 'on the nose' - that is for max signal with the BFO off. Switch on the BFO and tune for maximum intelligibility whilst adjusting the IF and RF pots for a suitable level of AF output, any temptation to turn up these controls should be resisted and level control should be effected using the AF pot.

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- The FM tuning/Carrier level meter on the 770R.-

- The changeover of function for this meter is controlled by the 'd' wafer of switch S1, the mode switch. This switching function is in the kathode circuit of V11, a 6AU6 pentode. Basically it puts the R91, 'S' meter adjust pot; or the R89, FM tune adjust pot; into circuit. Its operation is further controlled by S1 'c' wafer which feeds V11 from either the kathode of V9 the FM discriminator valve, a 6AL5/EB91, or on CW/AM from the second detector stage.

- Lack of operation on CW/AM, accompanied by malfunction of the 'S' meter can often be traced to a faulty second detector diode, CD1. This semiconductor does seem to have a limited life when used in the 770R as I have personal experience of many receivers where the CD1 has had to be replaced. One of the modern germanium type diodes can well be used here with no adverse operating effects.

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17

- From Your Mail. -

- Why not put a list of second hand prices in the newsletter ? So we know what to pay for a receiver ? - Well it just doesn't work, as an example one member asked me what he should pay for an 820 AM/FM tuner unit he had been offered. I could only quote the latest prices that I knew had been paid recently for this item, I said from £25 to about £35. Next letter I got said " the 820 was in such good nick & I did want it so much that I gave in and paid the asked for £50" - I think that was over the top but he is chuffed with it. Same with a member who asked re worth of a 940, I told him what I thought and later on met him at a rally, he had been happy to pay the price asked for since the set was mint and with original paperwork - He paid the sum of £200 for it ! It all depends on how much you want it, how deep your pocket, or that of the buyer if you are selling.

- Paid £65 for a 680X but the carriage by commercial carrier cost me another £48 on top, well that seems about the going rate but did you know that a set such as, say, the 770 can be sent by Royal Mail Parcel Post ??? Fact !!! Only cost a third of that too. If packed well in bubble wrap it will be okay, a hard piece of ply in front of the scale is advised.

- Cost of copies of manuals is high, so says one member. Well I bought a 12 sheet photocopy manual for a non Eddystone recently and it cost me £7.50 plus postage. A 58 sheet manual cost me £20 from one of the biggest advertisers of manuals in the hobby mags; so I think EUG ones are a bargain, we don't get them copied free you know.

- Which is best for me the 680X or the 888A ? this query from a younger member who is new to SWling and Eddystones. If you are to be content with JUST the ham bands then the 888A but if you want to have broadcast reception too then it must be the 680X, a 680 might be cheaper and will give almost equal performance, assuming you can find one for sale.

- A tape recording outlet on my 750, where should I wire it ? A simple answer here you can use the socket meant for P.U input with no mods at all, since you want to record utility signals and are not interested in quality reproduction then just take the A.F out from here, it works I am using a morse decoder from this P.U socket with great success.

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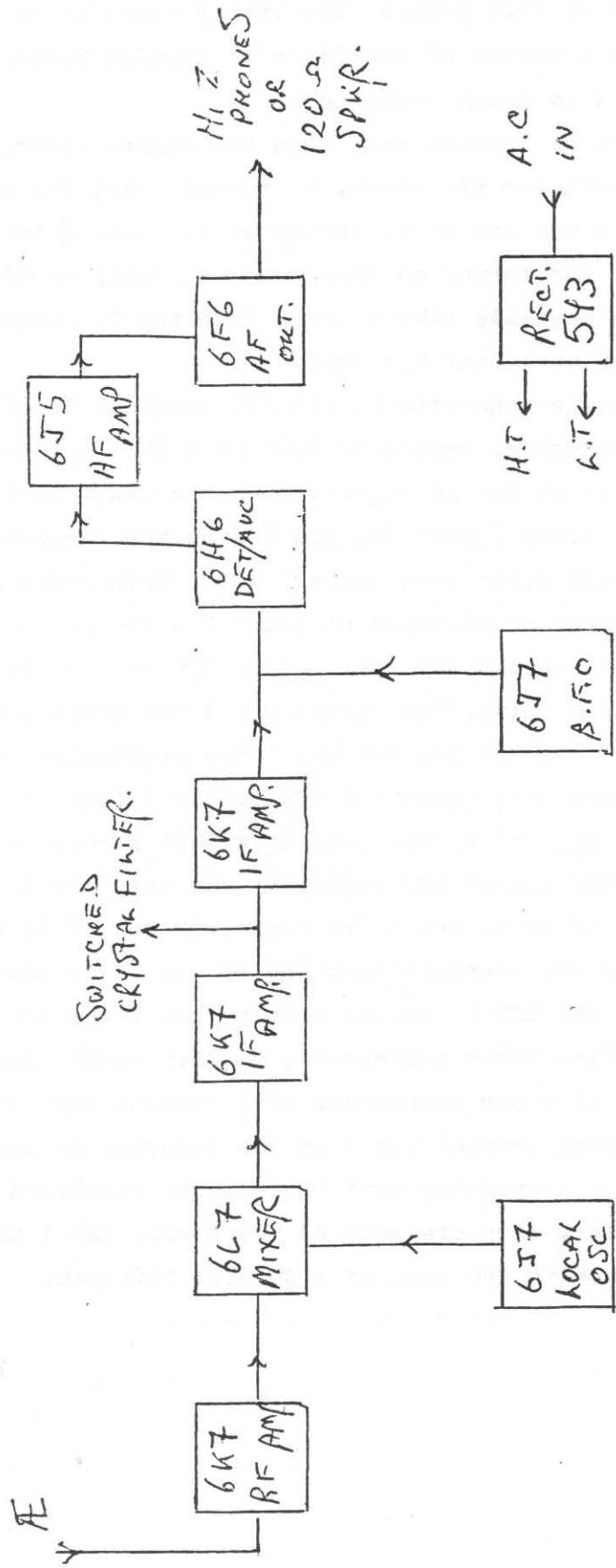
- Help, I was told that I could replace the UAF41 type valves in my 670 with the more easily obtainable UAF42, now I find that the performance is far worse than with the old valves ? Check whether there is a link on the valve base pins between pins 4 and 7, if not then fit it, on each valve base. (alright, socket if you want !)

- On my 870 the dial bulbs, one or the other, keep blowing, can I try 6.5 volt bulbs in place of the stated 5 volt types ? Will it help the problem ? - Not really, what I guess to be wrong is that the shunt resistor, it is called a thermistor actually being a temperature variable resistor, this may be open circuit or more likely from experience one of the soldered joints to it will be a dry joint.

- The earth connection on my 740 seems to reduce the signal level whereas operating the set minus an earth gives me more signals on the HF bands, Why this ? - A case of something not being correctly matched probably, do you use an ATU with the 740 ? this would be a big help on SW and use of aerial and earth would allow you to match them to the receiver input correctly, anyway a good earth should help in combating QRM from local sources - if it is GOOD. A high resistance earth will maybe cause your problem !

- My 730/4 is an ex MOD set, (aren't they all ?), when I push the calibrator switch the tone is intermittent and I can smell something burning. - Another one of those switches with what I think was some kind of ebonite insulation, the brass contacts leave a track of powdered brass across the insulation, the HT finds a path to earth and then the ebonite begins to burn away, sometimes it actually sizzles - whatever it does I suggest a change, try the RS or the Cirkit catalogue for a suitable type, better still contact Bulgin, they made the original and may recommend a replacement from their lines.

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F.C.R. comp's; Revf; circa 1936.

- A Muted 820 Tuner Unit -

- My 820 AM/FM tuner is nearly 40 years old but has been in storage for some 25 years of that period. The last 5 years it has spent in my shack, coupled to a simple AF amplifier to provide broadcast background listening whilst I am doing bench work.

- The first sign of trouble came when the signal strength dropped noticeably one midsummer afternoon, this meant that for my 'easy' listening the gain pot had to be turned up to about  $\frac{3}{4}$  full. The next day when the unit was turned on there was no signal at all. Both AM & FM were silent, a magnetic mike plugged into the PU socket proved that my 6j5 into 6F6 AF amplifier was okay.

- Checking from the schematic in the 820 handbook I decided that since the only two valves common to both AM & FM, V3 & V4, were also the only two which carried the AM signal, then the fault must be thereabouts.

- Several hours later I gave in, had I done the correct thing, checking the voltages on each stage then maybe I would have saved myself some time. The HT voltage as measured at point P - the output of the RC smoothing circuit - should have been circa 190 volts. It was not ! My reading was around 85 volts, the reason why I was getting no output was simply that the HT was too low for the local oscillators to oscillate.

- Component checks were begun and eventually I found that R4 the anode feed to the first half of V2 was reading almost normal on the Avo but that it was dropping almost 100 volts and was very hot to the touch. It was found that C7 which decouples the lower end of R4 to chassis, had gone leaky and was bleeding away the HT via R4 to chassis.

- This restored the 820 to normal working but I was now suspicious of the remaining tubular paper condensers, further checks showed that two more of the 0.003 mF paper condensers were reading low even on the Avo, these have since been swopped and I am now enjoying my background music as before. Hardly surprising that these paper insulated condensers are starting to leak, they are some 40 years old, and I am sure that they were designed with the idea of a 40 plus lifespan.

NOT

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- QRX. not QRT. -

- No need to tell some of you the difference, will be with you again in two months, and it will be the 888A featured in issue 23.

- Any items for the newsletter, your experiences or your ads, then get them off during the next calendar month to ensure their being in that issue. A reminder to those who need it, the subs year ends with issue 24, and both this and the next two newsletters will have a reminder, so many write in a couple of months late saying, sorry forgot - please can I have my back copies. Nice to know that you miss the newsletter however, even nicer to know that some of you appreciate it enough to have paid up two years in advance. Thanks to those who have.

Eathy & Ted.

# EDDYSTONE

## Radio Products

Stratton & Co., Ltd., West Heath, Birmingham, makers of the well-known "EDDYSTONE" SHORT AND ULTRA SHORTWAVE RECEIVERS, TRANSMITTERS AND COMPONENTS have pleasure in announcing that they are now commencing to deliver components, and in the near future will be in production with a new Communications Receiver—the "504."

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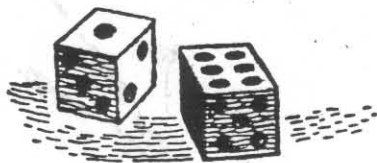
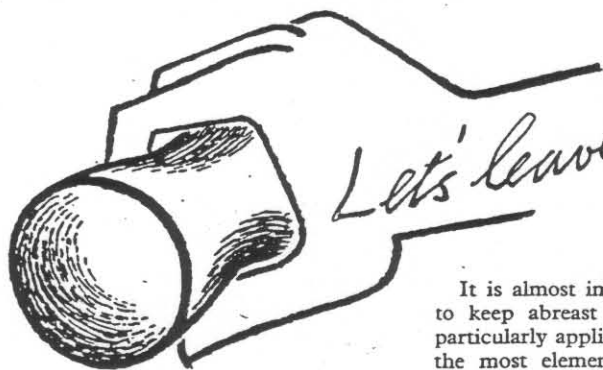
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