

Eddystone User Group Newsletter

Issue No: 35

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Graeme

Featured Model: 1570 AM/FM General Purpose Receiver



*A non profit newsletter for Eddystone Users

*Information quoted from Eddystone Literature by kind permission of
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FREE MEMBERS ADS - Please make sure that you put all the details, i.e. Sell or Wanted, Model & Suffix, Conditions, Collect or Deliver and last but not least your contact details - name, phone number preferably or address.

This is issue 35 of the newsletter and is the fifth of six issues for the year 1995/96. If you join after this issue you will get the back issues to and including no 31. Your subscription will end with issue no 36. Subscriptions are £10 per year UK and £11 per year overseas. Metals EUG badges are available at £2 each. Any remittances for subscriptions, badges or manuals must be by cheque or money order and in sterling. We cannot cope with foreign currency as the bank charges for conversion are more than the value of the subscription. Make your cheques payable to **Eddystone User Group**.

Copies of manuals and circuits are available for most Eddystone receivers through the EUG with discounts for EUG members. Manuals cost between £3 and £10 depending on size, and whether original or a copy. Most manuals are now copies. Back copies of all newsletters are available at £2 each post paid.

With this issue of the newsletter we are changing the administration procedures for the EUG. From now on all correspondence for the EUG should be addressed to Ted Moore, Eddystone User Group, c/o Graeme Wormald, Sabrina Drive, Bewdely, Worcestershire, DY12 2RJ. Graeme will ensure that all the mail requests for back issues and manuals and new member enquiries can get answered as soon as possible. Eddystone Radio will still print and distribute the newsletter and will be a source of archive materials for the enquiries you send to Graeme. We will also be manning the EUG stand and the National Vintage and Communications Fair at the NEC on May 5th. We look forward to seeing you at this regular get-together for EUG members. A mention of the EUG newsletter in the February issue of Practical Wireless brought in about twenty new members, welcome to them and thanks a lot PW.

Eddystone News.

Due to being stuck in a 'chain', our move date has got delayed until April. We expect to get the keys at the end of February and then spend March making some changes to wiring etc., As March is our busiest month of the year, we will not move the factory until April. I fully expect to be out of West Heath by the end of April. I regret that time just does not permit us to organise an open day for EUG members. We will probably take some photos instead and publish those. The new place will be a big, big improvement. No matter how quaint and unique it sounds, an old open air swimming pool is no place to try and run a high tech company. We made our first deliveries of a new HF SSB Transceiver this month, the ORION 7000. This is a 1.6-30MHz multi-mode 100W transceiver with digital signal processing (DSP) at baseband. It will sell for about £1500 to aid agencies and government departments in developing countries. A data sheet is enclosed for your collection.

Chris Pettitt - Managing Director

Late Adverts

- FOR SALE, Model 850/4 LF Receiver plus matching speaker and original handbook £120, or will exchange for Telegraph items/morse keys etc: Please phone Wyn on 01978-756330 (Clwyd).
- WANTED, scrap Eddystone receivers for spares, some doubles for sale, see other advert. Phone Peter Lepino on 01372-454381.
- WANTED, urgently handbook and manual plus schematic for model 720, also known as the 'Yachtsman'. Please write to EUG c/o Jim Murphy, 63 Wrose Road, Bradford, West Yorks; BD2 1LN

- Issue 35. -

- A New Year, and a new issue. Thanks to some hard work by the Volunteers at Eddystone you should all have had your Xmas issue in good time, also the Xmas Supplement. Maybe I ought to consider an alternative issue, sans period ads ? for the two members who are not too keen on this aspect of the N/L ?

- Only kidding ! seriously though it just is NOT possible to please all, but I do try.

- The chosen receiver to feature this issue is the model 1570, a rather more recent set than we generally deal with. Since we got 2 queries re this model last month and one member actually has acquired a 1570 then I guess that it is worth a mention.

- PLEASE, you overseas members. THIS is for YOU. Cheques sent to EUG via Eddystone please, not to me ! And another thing they MUST be in STERLING as any attempt to change other currencies in the bank will incur charges that are often more than the value of your foreign currency cheque.

- A cry from the heart from one EUGer in Eire, please will his Eddystones become useless with the advent of DAB ? Well the short answer is NO, since regular AM/SSB/FM broadcasts will be with us for many years yet. But hold on there Ken, what is this ? DAB in Eire ? What have you heard that we have not heard ? I know that it has begun on a small scale in the southern areas of the UK, but in Eire, I ain't heard nothin' pal !

- The new facility offered by member Jim Murphy, if you have a query of a technical nature, or you have an advert for the Free Members Ads, maybe even a contribution for the N/L ? By all means write to Jim and he will do the necessary. This will relieve some of the load on the Ladies at Eddystone & will enable you to get a more rapid reply from me. See the address on the last page of this N/L.

- Spares - this is a vexatious problem with the older models. There are very few available, new or second hand. You can try Howard Turner at Centre Electronics in Brum. The other possibility is to try a Wanted Ad in your Newsletter, apart that I shall try and help with suggestions if you write to me.

- Repairs ? Well Graeme Wormald has done a few for members, he is not going to make a job out of it but he may be willing to listen to your tale of woe, maybe even arrange to help you out from your miserable dilemma. Another possible place would be the above mentioned Centre Electronics.

- VOA is hardly a subject for this N/L but Ian has written to say that he has been going bananas trying to hear VOA on the usual frequencies of 15205 and 15405 Kc/s without any luck - he was almost decided that his 940 was to blame when he heard over the phone that VOA has ceased all broadcasts to Europe as a result of budget cuts. Ian you can always try the frequencies given for the North Africa broadcasts, even the Middle East signals are often audible at good strength in the UK. Please don't assault your 940, it isn't to blame.

- Tandy, high prices and I don't appreciate their profiteering but they do have some advantages. If you know just what component you need then a quick trip to the local High Street branch will usually get you the item in question, it isn't nice to pay so much for say a penny diode but then if you sent off for it by post the cost would also be exorbitant. 1N4004 or 4007, 1N914 or 4148 diodes are a good example. You could get them for pennies at a Rally but if you need it, like, yesterday then go to Tandy. The one thing you must not do is to accept any of their staff technical advice, it usually is incorrect as they are just salesmen !

- Mains Earths. -

- Comments in the last issue about these being useless for RF equipment seems to have stirred up some members from their Christmas lethargy. Joe takes me to task for suggesting that members use a dangerous method of earthing. Well it would only be so in my estimation if the two systems, the mains supply earth and the shack ground earth were connected together. I am open to correction here but I have used a completely separate ground earth system myself for many years - with no problems at all. I just ignored the third pin on the socket altogether !!

- Another member who asks that his name be kept out of print has gone further. It may be illegal but Mr 'X' claims to have disconnected the house hold supply earth and connected a ground earth system for his domestic supply. He did this after finding that both his radio and Tv reception were being ruined by QRM from a neighbour. I AM NOT ADVOCATING THIS PROCEDURE, please note this disclaimer.

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- The Johnson 'Q' Antenna. -

- Just shows that some of you do 'chew' your newsletter quite thoroughly. In the ad on page 25, at the top, is a drawing of this antenna. It purports to be a half-wave doublet, yet looking at the connection it just is not so!

- Could be the artist committed a faux-pas, could be it isn't a doublet as we know it. Whatever it is a close look at the picture will show you what I am getting at. Any help from you aerial (insects have antennas not radios) experts will be welcome.

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- SPROGS. -

- Well there are two kinds, so far as I know. There are the "offspring of RAF types" or actual neophyte RAF types, or there are the electronic type of sprog - the spurious response. This latter sprog is a common enough occurrence on the modern black box sets, less so on the older analogue sets that we deal with in the newsletter. Misalignment can however cause sprogs on our Eddystones. In a recent case Arthur had acquired an 840C that had been 'attended to' by some unknown person. The local oscillator and mixer cores were all way out of place, funnily enough the miscreant seemed not to have touched the original settings of the trimmer condensers.

- Anyway the calibration was way off, there were also a number of sprogs audible on the lowest SW range. At the HF end there was a very wideband rough note - quite strong too. Many other noises off including whistles and multiple image signals convinced Arthur that a weekend spent on re-alignment would be helpful. A total of 4 hours was spent on the correct re-alignment of this 840C and the results are very satisfactory, the set is now in regular daily use having replaced the R.1155N that had been the station receiver for many years past. Arthur has also commented that the flywheel tuning of the 840C is a delight to use after his 1155 which was a good muscle builder !

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- Coaxial Cable and Long-wires. -

- Once more - coax is only a good conductor, with low loss, when it is matched to both the aerial at one end and the receiver at the other. Hence it cannot be used to feed a random or long wire aerial. If it is used in such a mismatched circuit then most of your received signals will go down the drain, not down the coax. A balun and matching transformer at the top with an ATU at the bottom of the feeder will match everything and you will get all of the signal that is picked up by the aerial, minus a little bit of loss.

- Age Related Behaviour, and the 958. -

- Problems with this set began shortly after it was bought, second hand from the skipper of a decommissioned trawler. Okay it did work but now and then it sort of 'misfired' - you know how it is when you get dirty petrol in your car fuel tank ? I put up with this for a few days but when I found myself preferring to use the shack standby receiver, a 940, in lieu of my 958 - then it was time to do something.

- I had the manual, or a very good facsimile thereof. I also had the list of common faults that came with the Xmas Issue 1994. BUT what do I find, the list stops at the 940 ! Not much help that, yet I still have one Ace to play. A letter to EUG eventually found its way to Ted, and back came a list of possible causes for the annoying symptoms.

- Opening up the 958 on the worktable it was immediately apparent that I had a long job ahead of me, no easy cures here. The 958 consists of a number of modules that are interconnected by cabling, many of the signal paths use a small diameter co-axial cable of the RG174 type. In almost every case the normally translucent polythene insulation of these interconnecting cables was now green at the bared ends, and as I later discovered, for some way into the cable length. Ted tells me this is possibly caused by the salt-laden atmosphere in which these marine sets lived, whatever it is I had no choice but to begin replacing all the co-axial interconnecting cables since a check with a DVM showed that there were very low resistance paths across each piece of co-ax. This was a time consuming and frustrating job which took several weeks, each of the multi-way connectors needed to be thoroughly cleaned up too as the green goo seemed to have an affinity for these. DON'T just whip all the co-ax out in one go, hoping to get it all wired up correctly afterwards, that way lies insanity ! I identified each one, removed it, cut the new length to size and trimmed the ends, only then after having cleaned up the connectors involved did I fit the new co-ax.

- A general clean up of the whole set was undertaken at the same time. It was deemed to be necessary since a considerable amount of dust and debris was found inside the case. As the job was being done I consulted the list of mods at the front of the manual, some had not been done and so these were incorporated where they were felt to be advantageous to future operation.

- All in all the clean-up, re-wire and mods have left me with a very complete knowledge of the innards of my 958, all good experience for locating any future problems that may arise. I am left with a new-looking and even improved working set that cost me some £10 in parts, the labour was really a labour of love and so cannot be costed. In conclusion it does seem that for a set which is reaching its 20th birthday this year, there is very little wrong with the electronics, all controls still feel 'new' and the let-down caused by the senile co-ax can hardly be attributed to Eddystone. It is a wonderful receiver to use on the air, beats any of today's fancy sets hands down. If you see one, and can afford it then do not hesitate. Colin.

- Re the Above. -

- Colin mentions incorporating some mods as he went along. I do hope that he did the mod that involves adding a 1N4004 diode into the TR20 drain circuit and down to ground. This mod was designed to prevent failure of TR20 during normal operation and should go from connector pin Q/L to chassis, or to the connector ground pin. It was fitted in later production runs of the 958 but if you have an early version it is worth checking. Mind you experience tells me that if TR20 was going to fail it would have done so by now !

Ted.

- It's All a BIG Wind Up ! -

- A tiresome chore, is how many people think of it. A challenge, is how others view it. Impossible to yet others who are confronted with the task of rewiring (or re-stringing) an Eddystone drive cord system.

- It really can be any of the above, if you are not prepared for the job. It can also be a 'doddle' if you go about it in a logical manner. I think that my record was about 45 minutes, but have to admit that this job was done just a few days after having restrung a similar model, when everything was in my mind, and all the bits were to hand.

- My worst doesn't bear thinking about as I had never tackled one before. I was the proud owner of an 830/2 that had been got at. The previous owners words had been to the effect that 'needs a few things doing to it'. That job lasted a few days ! I did it by comparing with my originally newly bought, and since unrepaired, 840A.

- If you get hold of any of the slide rule dial sets then make a point of opening it up, looking at the inside of the set from the rear you should sketch out the run of the drive cord, how many turns around each pulley, how it approaches and turns around each of the idler pulleys, and just exactly where the cursor is on the slider when you have the tuning knob turned so the set is now tuned to the end stop at the HF, or right hand, side of the scale.

- Okay let us assume that the worst does happen, and that through sheer bad luck, or ham-handedness on your part, the drive cord snaps. The first thing is to NOT keep twiddling. This could be disastrous as the wire may get into the gear mechanism and you will have chewed up nylon pulleys to replace, if you can get hold of them ! They are very scarce and only obtainable by doing a cannibalisation routine on another defunct Eddystone.

- Open up the set and once again looking at it from the rear, try to sketch as much as is still in situ of the drive cord path around the various pulleys. Of course if you are the 'look ahead' type you will have a sketch available. Whilst it is not a task I actually enjoy, not being a complete masochist, it is a task that when complete will provide you with a feeling of inner satisfaction.

- Before removing the old wire (cord) you should get yourself a supply of replacement wire (cord). Best bet for either of these commodities is a trip to the nearest fishing tackle purveyor, honest you would be surprised what goodies you can get there. I once got some nylon pulleys that were an almost exact fit for an EC10 ! Your other choice, if there is one locally, is a good model-makers emporium. Not the 'toyshop' kind of place but one where genuine model-makers congregate to talk and occasionally buy the bits and pieces to make up their own models.

- Having got the necessary wire or nylon cord, buy plenty as it will be quite cheap, then you are ready to begin the real job. That of carefully removing the remnants of the old broken drive cord. If it is a wire drive and the cursor is soldered to the wire then it must be carefully unsoldered. Take care here as the metal from which those cursors are made is fragile ! Put the cursor aside for now, in a safe place. It won't be much use to you if it falls on the floor and gets your size 9 stamped on it. Oh Yes, it has happened to me, but only the once, I took care ever after.

- Next job is to disengage the ends of the wire or cord from the two pulleys, these can be temporarily removed by unscrewing the flat headed screws in the centre of each pulley.

- You might want to open up your Issue 25 of the Newsletter now to help you along with the re-stringing. It is all there, complete with the necessary text and diagrams. Follow it word for word, double checking your actions in every case - this applies especially to the point where you are about to cut the wire to length. You actually need around 3' 9" for this set but a wise move is to make it 4' and clip the end off when the final securing screw is tightened up. SEE, IT AIN'T SO DIFFICULT AFTER ALL !

Simon.

- Metal Valves. -

- A warning from Steve that you should not use any of these as replacements in any receiver, not just Eddystones here, without checking out the pin 1 connection to the valve holder. For all the metal 'M' types this pin should go to chassis earth direct as it earths the metal case. Examples are the 6V6, the 6K7, 6K8, 6J7 or the 12 volts equivalents of these types.

- In many cases where the receiver in question has been designed to utilise the 'G' or 'GT' series the pin 1 tag on the valve holder may have been used as a tie point for other components. If it happens to be a component carrying HT then you are in for a nasty shock - literally so - if you touch the metal case of a valve in this position.

- Copyright of the Newsletter. -

- No problems here if you just want to copy and use an article or bits of info but honestly there is a limit. One overseas member has apparently paid his own subscription and is then making extra complete copies for sale to his pals, to recover his subs costs! Bit cheeky that is, and many thanks to Ken for telling me about this. A letter has gone off to the member concerned expressing my hurt feelings. But don't let this stop you from using any bits of the N/L in your club magazine. You are very welcome to do so.

- The EP17R Panadaptor. -

- Got one? Does it sometimes refuse to fire up when you turn on the power switch? Bert thinks he has the answer, but only after much frustration.

- He has traced the lack of secondary voltage to feed the HT supplies to a faulty CZ6 thermistor in the earthed center tap of the transformer secondary windings.

- This component was inserted to give a 'soft-start' facility to the semiconductor diode HT supply. In effect immediate application of the HT to a circuit where the valves do take a finite time to warm up, well this is just not on - or so think the electrolytics! The CZ6 has a high resistance when cold and it warms up as current is drawn by the valves, this lowers the CZ6 resistance until it is a few ohms.

- One problem with these thermistors is that they do operate HOT, this means that fatigue will eventually loosen the soldered on wire ends, also possibly soften the solder in the joints holding the component into the circuit.

- A new component, or the modern equivalent can be obtained and fitted but Bert suggests that the solder used must be of the high-melting point type, not as used on PCBs. It will also help if the thermistor is mounted on longish leads and away from actual contact with any other components.

- Replacement rod type thermistors of the CZ or VA series are marketed by RS/Electromail and other suppliers, check their catalogues.

- Nicads (NiCd) Batteries. -

- If you have one of the battery operated types such as EC10/EB35/960, then consider fitting Nicads into the internal battery box in lieu of the usual R20 or LR20 (D type) cells. A simple connection will even allow of their being trickle charged from the mains via a plugtop type of power supply.

- Severe Drift Problems on a 960. -

- Since new the 960 had never needed any attention, and all temptations to twiddle with the innards of the set had been resisted. Now there was real trouble and apart from reading the manual a few times I had absolutely no knowledge of the circuitry.

- What had happened was that after a recent period of thundery weather I had noticed severe drift on all ranges. On the LF bands it was enough to produce distortion on a MW signal (range 6). On SW bands it made the set unusable since attempts to follow the signal across the scale on range 1 meant constant adjustments to the tuning.

- Use of an AVO 7 across the main Negative rail to earth Positive showed that this was a more or less normal 9.2 volts, when operating from mains power. Next step was found from an examination of the schematic, the supply for the BFO and RF stages was derived from a 6v8 zener diode (D1 = 0AZ204). which was fed via R13 a 270 ohms, $\frac{1}{2}$ watt, 10% carbon type. In the event a voltage of only 5.7 was measured across the zener (D1). First off I thought of a duff diode but before chopping it out I checked on R13. Good job that I did ! the resistor measured out at almost 1200 ohms, but this varied up and down according to how I wiggled the ends.

- Out with the miscreant and substitution of the carbon type with a new type $\frac{1}{2}$ watt resistor of the correct value. At switch on the needle of the AVO went up to near enough the 6.8 that was needed for correct operation of the RF stages.

- Since I have been informed that the probable cause for some resistors going high is heavy current drain caused by leaky condensers down-line of the said resistor, I determined to do a few checks on those likely to be duff. After a whole afternoon checking out all of the paper and electrolytic types I found nothing wrong. Current flow through R13, as determined by the voltage drop across it, appeared to be normal and stable too, after almost 4 hours of soak testing. I boxed the 960 up again and have had no further drift problems since the repair was completed some months ago. What had been the cause of the duff resistor ? Not thunder surely ? Although it is just remotely possible for a mains spike to have blown a diode I cannot see such a spike making the resistor go high, no way ! It has to be assumed now that the 960 'happening' was simply a coincidence - that the thunder storm had been innocent.

- Whatever the cause I have added a small mod to the RF input circuit of this 960, peace of mind for 14 pence. I have fitted two parallel connected and cross polarised diodes of the 1N4001 series directly across the aerial input socket pins. These have no effect whatever on signal strength but they will provide some possible protection against static on the aerial lead in. As I use a fairly long slant wire, high at the chimney end, I consider this a prime target for static discharges. I do plan to purchase one of those mains spike eliminator units to operate the 960 from, cost is a pretty important matter here as I am now retired - a visit to the next Leicester Rally is planned to locate what I need. Derek.

- Mains Spike Eliminators ? -

- The 'spike eliminator' need not be an expensive, external unit as Derek seems to think. Have a look in one of the catalogues, Maplin or RS Electro-mail for instance. You will find a device that is known as a Varistor or Transient suppressor, cost is about 50 pence each and one is about the size of a small ceramic condenser so can be wired directly across the mains input under the chassis. Ted.

- Featured Model, The 1570. -

- This was a 1980s low cost, fully solid state, AM/FM, enhanced performance general coverage receiver. Model variants cover the requirements of both the professional and the semi-pro users.

- Advanced techniques and components of the type usually found only in professional communications equipment are utilised in the manufacture of the 1570. Added features include such facilities as unambiguous digital readout LED display of the tuned frequency, LED indication of the selected waverange, wide frequency range coverage of long, medium, 4 short wave, and the full international VHF/FM broadcast band. An S meter is included for peaking in of weak signals, a BFO and a product detector for both CW and SSB reception. An efficient AFC system works on both FM and AM signals, this is switchable from the front panel.

- The receiver is compact, lightweight and is elegantly styled in the modern trend. The audio stages can be used independently for use with an auxiliary AF source and provision is made for a tape recorder feed. AVC may be manually controlled or automatic by push switches on the front panel, dual filters for wide or narrow IF bandwidth are also switchable. A front mounted monitor speaker is provided but facilities for an external speaker connection are on the rear panel. Phones users will find a phones socket on the front panel for use with low impedance phones. Actual AF power output is @ 2.5 watts at the expense of slight distortion, 1 watt is available at minimum distortion (1% is quoted). Response is level within 6 db over the AF range of 100 - 12,000 cycles.

- Power supply may be derived from the normal AC mains at levels of from 100 to 250 volts, at 50 or 60 c/s. A provision is made for operation from a built-in rechargeable NiCd battery of 12 volts. An external 12 volts with negative earth may also be utilised.

- Actual Ranges covered are;-

FM	- 88	to	108 Mc/s.
1	- 14	to	30 Mc/s.
2	- 8.5	to	18 Mc/s.
3	- 3.5	to	8.5 Mc/s.
4	- 1.5	to	3.5 Mc/s.
5	- .55	to	1.5 Mc/s.
6	- .15	to	.35 Mc/s.

- Sensitivity figures quoted are;-

FM	- 5 microvolts for 30 db S/N (22.5 Kc/s deviation).
AM	- 3 " " " 12 db ".
CW	- 2 " " " " "

- IFs are 10.7 Mc/s for FM and 455 Kc/s for AM, IF breakthrough is quoted at around 90 db at 90 Mc/s on FM and @ 70 db at 2 Mc/s on AM.

- Selectivity figures are as follows,-

FM	- 250 Kc/s at -6db.
AM	- Wide, = 10 Kc/s at -6db, 28 Kc/s at -40 db.
	Narrow, = 4 Kc/s at -6 db, 12 Kc/s at -40 db.

- Image rejection is better than 80 db at 90 Mc/s on FM, better than 50 db at 2 Mc/s on range 4, better than 25 db at 22 Mc/s on range 1.

- AVC performance on AM is quoted as less than 8 db change in output for an 80 db increase in RF signal input.

- There are 2 variants of the 1570, the /1 has a digital display resolution of 10 Kc/s on FM and 1 Kc/s on AM. The /2 version has an FM resolution of 100 Kc/s. The 1570 quality build and design are in accord with the British Defence Specification 133-L2. First supplies came onto the market in 1979 and by 1980 the 1570 was being supplied to all branches of the UK military as well as to many countries within the NATO Alliance.

- No attempt will be made to provide a block schematic due to the complexity of the circuit.

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- Criticism ? ! ? ! -

- Yes it does happen, and it has happened over the Xmas issue ! A rather hard comment from one member that there were too many period ads in issue 34, and that they are merely filler. All I can say is that there are many, many letters from other members who ask for MORE of these Eddystone ads from the 1930s to the 1970s. Filler ? well any item can be called filler if it is not what the particular reader wants. Another letter complained about the tales of individual members faults and cures, asking for more input from Eddystone manuals.

- Yet another letter comments upon the subject chosen for the Xmas Supplement. What can I say ? A number of letters are received each year asking for the origin of the choice of the name and logo, yet other letters, not from members, confuse Eddystone with another similar manufacturer. I often get letters for the "Edison Users Group" - one just last week from a non-member who wanted to advertise a round diecast speaker for sale at £75. I readily accepted the offer of Graeme to research and provide the article for this supplement, a new model list each year is a bit much is it not ?

- On the matter of the Xmas Supplement, Graeme Wormald is now becoming a regular contributor, providing me with ready typed articles. This much reduces the burden upon me, YOU out there, can do the same by supplying articles for the NEWSLETTER, it is YOUR N/L after all. Anything that will interest members of EUG will be considered - typed on A4 paper, neatly, or better still done on a computer with a good legible print-out.

- Last Issue's Featured Model, EB35 III.-

- Here we go again, I find that the cover photo as provided by Eddystone Radio is different to my Mark III, and as depicted on the Instruction Manual that I use here. Have we found another variant ? Those knobs are definitely different to the knobs on the manual photo, as is the scale. The scale has a bottom logging scale numbered from 0 to 1500 in 100 increments, on the Issue 34 photo. Yet on my manual photo we have a logging scale numbered just 0 to 500, in 100s and I think the graduation on the two micro scales in the half moon cut-out are different - possibly a different reduction rate in the gearing also ?

- Over to you the members now, can anybody throw any light on this matter, are there two varieties of Mark III ? There is absolutely nothing in any of the literature that I have which mentions 2 - or more maybe - versions of this last version of the EB35 series, but then we never did suspect that there was an ATLANTIC TWO model did we ? It must be a case of Watch This Space !

- A Big Job ! -

- Some comments from Graeme Wormald who is doing a re-furbishment job on an EB35 II for Jim Murphy. "Why do they do it ?" was the most plaintive one, and he wonders why those without the necessary skill or knowledge will commit sacrilege by doing irreversible mods ? Still if the info in his latest letter is correct Graeme has done all that is possible to restore an ailing set to 'normality'. A Xmas meeting between Graeme, Jim and myself almost completely dominated by discussions on this set. A nice get together though ! Thanks.

- Non- Directional Beacons.-

- Several queries from members recently about these, one member has now got an 850/2 explicitly to seek out and log as many of them as possible, in Dave's case he has been hearing them for some time on his EB37 and wants a bit more gen on them.

- There are two distinct types of NDB, those for Maritime use, and those for Aeronautical use. In the main the former group have 2 letter Ident; calls and are nowadays mostly a repetitive CW transmission of the Ident letters plus a longer dash period for Dfing the signal. In the UK at least they operate in groups of 4 or 5 on the same frequency with all of the group using the one frequency being in the same sea area.

- The second group, of Aeronautical beacons are usually of 3 letter Ident calls if they are main airport or waypoint beacons, if they are local beacons for orientation at a particular airport then they will have 2 letter calls. Most of these air beacons are MCW signals.

- Since the maritime beacons operate at sea level and are worked by shipping they tend to have slightly more power than the Aero beacons which operate to aircraft in flight and often have a 'line of sight' path between beacon and plane.

- The matter of frequency allocations is a rather vexed question, an international agreement gave them the band from about 180 Kc/s to about 400 Kc/s, with the maritime beacons being limited to an upper limit of about 320 Kc/s. In practice however - as with all radio frequency allocations the powers that be in the various countries have their own ideas and there are many exceptions to the above limits. There are some Russian NDBs operating up as far as 1 Mc/s, the middle of the MW broadcast band. Even in the UK there are still NDBs that operate in the lower end of the MW band. At the other extreme I remember some low power approach NDBs that were in West Africa in the 60-70s where the allocated frequency was as low as 220 Kc/s !

- Whether they be Maritime or Aero beacons you will find that all of them use the international morse code for Ident purposes, slow morse at that ! So slow that no real knowledge of the code is needed to identify and read the call sign letters. Many NDB chasers simply copy down the dots and dashes as such on paper and then translate them into letters of the alphabet.

- What do you need to go NDB Dxing ??? Well an 850/2 or /4 would be nice, it would be ideal, but it isn't necessary at all. Almost any of the Eddystone models that cover the longwave band, and many do go up to 350 Kc/s, will do fine. Oh Yes ! you will need a good outside aerial. As long as possible and as high as possible naturally, fed straight into you set or preferably via a specially made low frequency ATU - more C and more L !

- What can you expect ? Well wherever you may be in the UK you will be within range of several beacons, so start by identifying them, the list published every few months in the SWM will be of great help. It is best to listen on phones (Please, not the Hi-Fi type !) as this will aid to concentration by cutting out extraneous noise. Once you have located all those local NDBs & have identified them you can start after the Dx ones. Ignore all of those published figures for 'Usable Range', this will not concern you at all. Many of the maritime NDBs have quoted ranges of 15 or 25 miles, but for us they are often audible hundreds of miles away, those in Norway are easily heard, it is not so easy to hear the Greenland beacons but a bit of late night patience will pay-off. Ah yes ! 'late night' is the best time for NDB Dxing as the low frequencies used provide best propagation in darkness.

- Some Dxers swear by a loop aerial for NDB chasing, I think it is a case of 'you takes your pick' as an outside wire will certainly pull in much stronger signals, stronger by a factor of 100 in some cases, but you cannot null out any co-channel signal as is possible with a rotating loop.

- Try it sometime, even if you get nothing more than the High power LEC Consol station at Stavanger you will learn what these signal sound like. If you live anywhere near an airport or RAF base you will hear the Aero beacons.

NDBs cont;

Sets such as the EB35, 36, 37, the 358/400 series, the 670 series, the 720, the 909, the 730/7 & 9 sets, the 830/4, any of the 850s, the 870 & /A, all of these can be used for this aspect of our hobby, just take your pick.

- - - - -
- VHF / FM Dxing with an Eddystone.-

- In the 1970s whilst on the beach just below the Royal Palace at Rabat, in Morocco I was idly tuning a cheap handheld Japanese trannie, there was only the one Moroccan FM station but the band was chock full of signals, in several languages. These signals were from the 88 Mc/s LF end up to about 95 or 96 Mc/s Only - after that, and up to 108 was dead.

- Idly tuning I said, and that was it, until I heard the easily identified tones of the BBC! There were several Beeb station at the low end of the band, there were French and Spanish station, even some Italian stations.

- All this remember was on a cheap trannie with a simple whip aerial. Okay it was mid-summer and it was hot and sunny, but I was surprised. There are various modes of propagation which can account for this long distance reception of what is normally short distance, line of sight signals. Ducting is my chosen one for what I was hearing, it lasted from around 11.00 to well after 14.00 with the best Beeb signals at around midday to 13.00.

- If it was this good with a cheap and nasty 12 transistor receiver then I wondered what I would be getting on a good set and with a better aerial? A few days later back on the 43 foot Chris Craft that was my 'toy of the moment' I had another go. We were now even further south, moored outside the Harbour bar at Casablanca port. Outside because, as those of you who know Casa will know, it just isn't easy to get in unless the sea conditions are co-operative. They were not at this time. Anyway the available sets were a Collins general coverage receiver, an EB35 II (I am listening to it right now! - the very same one!), and an Eddystone 1570/1. For an aerial I had to make do with a crossed dipole, 3 element beam designed for 2 metres. Not the best but all I had on board. The Collins was a no-no, had no VHF/FM, the EB35 and the 1570 could both be used though. Don't know it, the 1570? It is the featured model this month!

- Spanish stations and a few Italians were audible from early morning - I began about 08.30 local time. The UK station and the Frenchies began to fade in around 10.30 to 11.00. From then on the Beeb signals were good enough to listen to with some degree of enjoyment. The fading, very slow and deep, I had experienced with the trannie and a whip was absent bar a slight flicker of the S meter on the 1570 so I assumed that it was due more to changes in polarisation than to reduction in strength. This rotating polarisation is a common feature of 'ducting' in my experience and I found that by aiming the 2 metre beam slightly 'up in the air' I got even better reception.

- We cannot all be blessed with such exotic Dx locations nor can we have a private yacht to operate from - but no matter. In this country, in early summer, with an elevated position be it home QTH or a portable QTH on a nearby hill, then VHF/FM Dx is easily possible, I know I have tried it from several places including the Lake District, Scotland, even on the hills of the Peak District. I have used the EB35, I have used cheap oriental trannies, I have even used a Hacker Portable with some success.

- As we are still in the early months of the year you will not get much of this exotic Dx but you can get ready for it - get your receiver ready, operated off batteries if you are going out to try it. A good aerial aimed South or slightly East of South will help. One idea is a full wave loop of wire, total length just over 3 metres will do and it will match the input to the EB35 type of set, it will give better directivity and signal pick up than will a simple whip, of course if you have one a 3 element VHF/FM aerial will be best of all.

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- Blown Valves on a 740. -

- The writers QTH is in rural Norfolk and the electricity supply is at the end of a line which supplies several other houses before coming into the home QTH. The result is that measured mains voltage can be anything from a high of 250, down to a low of 215 volts. Any value between these extremes is possible during the 24 hours, depending on time and available daylight.

- The 740 has for a long time been set on the 230 volts tap, with no real problems, a change in dial lamp brilliance is sometimes discernable but no more.

- With 2 of the homes on this power line empty it would seem that the ratio of high to low voltage periods has increased considerably. The 740 has begun to protest this increase in voltage by blowing valves. First to go was the EB41, V7. This was replaced from a spares box at no cost, it was but a week later that the EZ40 gave up the unequal struggle, another o/c heater. The difference was that this time I had no spare and was forced to buy one by mail, £3.50 plus p&p of £2 was a bit steep but there was no choice.

- The cost of a replacement valve made me consider possible protective devices to swallow up, or at least limit the higher than normal mains supply to the 740 mains transformer primary. A little bit of mental arithmetic have me an approximate value of 35-40 ohms as being suitable to swallow up some 10 volts of 'overvoltage'. The nearest available resistor in the junk box was a 33 ohms at 5 watt - it originally came from an old 'telly' chassis that was cannibalised for useful bits.

- Next stop was to decide where the resistor was to be fitted, there seemed no alternative to its being put inside the set. In a temporary hook-up the resistor did not appear to get over warm even when the mains was up at around about 250 volts, it had 9 volts across it once the set was warmed up and operating. Eventually it was decided to fit the wirewound resistor on its wire leads over the transfo terminals - keeping it spaced away from the other nearby components. High melting point solder was used and the wire ends were made physically secure before being soldered.

- A check on heater volts seemed to indicate that when warmed up the top voltage limit is about 6.7 volts, not too high above the recommended value, and infinitely better than the 7.2 that had been there before.

- This is a 'reversible' type of mod that can be done and undone without occasioning any harm to the 740. It will in no way affect the potential resale value of the set, not that I have any real intention of selling it after having it from new.

- The Lighthouse Supplement. -

- Very nice to hear from those of you who enjoyed the Xmas Supplement this time around. Thanks for your complimentary comments - fact is that it was almost entirely the work of Graeme, G3 GGL. It now turns out, quite coincidentally, that Graeme went to Leeds Grammar School. Guess who was a pupil there many years ago - One John Smeaton! To add to the coincidence it seems that whilst at school Graeme was in Smeaton House. What a small world.

- Some 730/4 Mods; - All Reversible. -

Knowing the aversion that Ted has for mods that permanently alter the physical condition of any Eddystone model I decided that those I intended doing to my /4 would all be of the plug-in or out variety. Good job that I am a 'squirrel' who cannot bear to throw out even valves with o/c heaters as 3 of them were needed now.

The intention was to lower the overall power consumption of the /4 set, since the past very hot summer had shown me just how hot the mains transfo did get after prolonged operating - yes operating ! I use the /4 as the receive half of my rig, the transmitter being nothing more complicated than a 6F6 VFO followed by 6F6 buffer/doubler and followed by a 6L6M P.A stage.

A look at the schematic diagram for the /4 showed that the rectifier itself took 10 watts of heater power, this could be replaced by silicon diodes of the ubiquitous 1N4000 series. In the event I chose the 1N4007s, 2 of them.

Going further I decided that the 2 double diodes could be replaced also by germanium (or as my XYL says 'geranium') diodes, the junk box had a packet of these, new and unused GEX types. Another almost 4 watts saved on the heaters of these 2 x 6AL5s.

Going even further I came to the 5 range indicating filament bulbs, 6 volts at - I believe - about 150 mA, not a big saving but might as well go the whole hog. I decided to fit green LEDs here run from a mini bridge rectifier unit and a series resistor, they now take just 15 mA at 2 volts.

- The actual dial lights are 3 in number, all are 6.5 volts at 0.3 amps type. I decided that some 6.5 volts type at 150 mA would be adequate for my usage. That they were available from my junk box made it a quick choice, I am after all a Scot !

The 1N4007s and their accompanying series resistors of 5 watt dissipation, were wired into the old valve base that I removed from a defunct 6L6M - it was made of some obviously heat resistant material and the components were mounted vertically, self supporting and well spaced for cooling.

- For the 6AL5s I used two old RS plugs made for use on B7G sockets, minus their metal shroud. It was comparatively easy to wire the GEX34s across the pins of these sockets - BUT DO GET THE POLARITY CORRECT !

- I was contemplating swopping the hard to get 6AM5 output valve for a lower power 6AM6 (yes i know it isn't meant for AF use but it performs well as a low power output bottle in my old AM, QRP Top Band Rig. However I then spotted that I would be going the other way, using more heater current, as the 6AM5 uses but 0.2 compared with the 0.3 of the 6AM6 - now work that out you theorists ! I decided that enough was enough as I have now lightened the load on the mains transfo by about 18 watts, and yes it does run noticeably cooler.

None of the above mods are irreversible so Ted and the other EUG purists have no axe to grind, I shall be happy if the mods detailed help extend the useful life of my mains transformer. I have costed out the re-winding of such an item and it was horrific - a quote of approximately £35 was the best one of three quotes I got. Ian.

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Nota Bene,- I don't like the idea of mounting wire wound resistors, or semicon diodes, vertically. Just my idea that heat rises and so all of it will go to the top end of the component with the attendant possibility of premature failure. Ted.

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- Distorted Audio on an 870A.-

- This model is one of the most uncomplicated post-war sets that came out of the Bath Tub. A very basic 4 valve plus rectifier which covered the long wave band, medium wave band and short waves from 1.3 to 24 Mc/s, this was a later version of the 870.

- Mine had been in almost daily use since bought new in 1963, had performed brilliantly through 3 house moves and had only required 2 valves to be replaced during that time.

- Of late the AF output had tended to become rather shrill, with a decrease in volume almost as soon as the set had warmed up properly. If left on then the AF output became very distorted and even with the volume turned up full it was hardly enough to drive the speaker. With the volume turned down a fair amount of hum became audible from the speaker.

- I put off the task of curing this malaise as long as possible, that was up to the weekend, by saturday morning the case had been removed and the 870A chassis was exposed on my work table.

- Apart a fair layer of dust, soon cleaned away with the help of a new and unused paint brush, there was nothing visibly wrong. All the valves looked to be well 'burnt-in' - as did the dropper resistor - but there were no visible faults.

- Being a believer in valve swops, I went off and bought a new 19AQ5 and a new 35W4. The first was not so easy to find but eventually both were tracked down in an emporium on the Edgware Rd. Fitting first the rectifier and then powering up showed that there was no difference, same symptoms as before. It was next the turn of the output valve to be swapped over, this did little to cure the distortion or low volume but it did eliminate the hum that became very apparent when the volume pot was turned to zero. I decided to leave the new 19AQ5 in situ.

- Further checks showed that the 2.2 Mohm (R12) which goes from the V4 anode to the V3 anode was open circuit and this was replaced, there was no difference in the distorted output and a check was now made on the other components in this output stage. C46 the electrolytic in the kathode of the 19AQ5 was replaced when it showed almost nil capacity, a 33mF, 25vw was used as it was the only suitable type to hand. The next check was on the primary of the output transfo as they have been known to go o/c, especially so in circuits where they are not bypassed with a small value of condenser. This showed up as open circuit on a normal Avo meter but when a test with a series neon and HT of 100 volts was performed the primary was seen to be intermittent open circuit. As this unit is an Eddystone catalogue part I was loath to swop it, a club member came to my aid with a good, but second hand 5267P AF transformer. With this fitted the set came back to life, almost as normal. I decided that it might pay to remove and check out of circuit the grid coupling condenser C44, on an HT test there was a slight, but definite, leakage and so a new .047 mF polystyrene type was fitted here. This seemed to be the end of the repair but to be sure the set was slipped back into it's case and left on 'soak-test' for a couple of hours, the time taken to go down and consume a fairly large midday meal !

- After lunch the set was checked out and found to be functioning okay, a cost of £4.75 for the valve was reasonable, the 35W4 was put away for future possible use.

- Those Hi-Fi type headphones ! -

- A new member of EUG, and one new to listening altogether, wrote just recently complaining about the noisiness of his S.640 when operated on phones, he also mentioned the fact that although he had purchased a very expensive pair of 'phones from Tandy, it was not possible to hear the signals from his 640 on both phones at the same time. If the plug was all the way in he heard signals through the left phone, if the plug was slightly out of its socket then he heard the signals only in the right phone.

- Now in his letter John states that he had explained to the Tandy shop what he wanted the phones for ! Yet it seems he had been sold a pup !

- The phones plug was of the modern stereo type, with 3 segments on the barrel, not 2 as for mono use. In the event it proved possible to open the plug and to rewire it for mono use, both earth wires to the 'sleeve' and both red and green wires to the 'tip' of the plug.

- This was fine in so far as both sides now produced signals with the plug fully home in the socket on the 640. The question of the extra noise was still there. These 'phones are intended to reproduce the full audio range from bass to upper treble, however I always doubt that they are anywhere near as good as they are advertised to be. This is certainly not what is wanted for use on a communications receiver such as the 640. By its very nature, communications use means that we will be receiving a somewhat restricted bandwidth signal, if the signal is at all weak then these - so called - HiFi phones will also reproduce all of the attendant circuit noise.

- What to do ? Well first off the impedance of these phones is pretty low, usually around 30-40 ohms at 1 Kc/s, the 640 is made for use with higher impedance phones. This built-in impedance mismatch simply exaggerated the reproduction problems. Since some £35 had already been spent on the 'phones it was decided that the easiest way out was to wire a 220 ohm 1/8 watt resistor inside the cover of the phones plug in series with the wires that went originally to the 'tip', this did help correct the mismatch. The next step taken was to introduce some tone correction, this had to go across the socket tags of the 640, a 0.1 mF paper type was fitted here. Even better results came when 2 circles of card were cut out and fitted inside the muffs of the earpieces, with just a single hole of about 3 mms pierced in the centres of the pieces of card. The operator was now satisfied with the reproduction that he obtained.

- Had the phones been for my personal use I would have simply disposed of both the transducers (the 'innards') and replaced them with BT - ex GPO - type earphone units that are always available at rallies. These give extremely good reproduction for comms; use with both a lower and a higher cut-off characteristic tailored into them, they also have a higher impedance, if wired in series they match pretty well into the phones output of our old sets.

- The motto is - of course - beware of those very expensive Hi Fi type of phones, costly and almost useless for our listening hobby. Unless one is a masochist who enjoys feeding all that noise into ones ears !!!

- - - - -
- The RAF Receiver Type R.8309 -10D/19644.-

- Okay ! Never heard of it ? Come on you ex RAF Wireless Mechanics you must have handled one of these at sometime.

- Give up then ? This was the official MoD designation for the original RAF version of the 770R Mark I. Used also by several other Air Forces such as Canada and Australia I doubt that I can ever recall hearing it called an R.8309 before, but it is so listed in the RAF Stores Reference book that Simon has somehow got hold of. Now we all know !

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- Voltage Checks on Older Models.-

- It was brought home to me quite forcibly recently that one cannot just simply pick up say a 770R, put it open on the bench and do the requisite voltage checks as per the manual. You can do it, but it is very doubtful that they will be anywhere near to the Table given. In fact if they were spot on I would immediately be suspicious.

- Look at any schematic and you will see that the positions at which the voltage checks are done are usually junctions where the leads from several components meet. Over the past 35-40 years it is almost certain that some of the parameters of the circuit, at that point, will have changed. Resistors have a fatal tendency to go high in value, never low. Condensers have a tendency to go leaky, making them an efficient, if variable resistor - at the same time expect to find that the capacity will have dropped considerably. Diodes, well experience shows that they are either still working, or dead - dead as in open circuit! However if you come across the tin can diodes, as the zeners used in early 60s sets, then they too can go leaky to the case - hence to chassis, (vide EC10 and EB35 series!) The tin can trannies used in these aforementioned sets will also be showing some leakage to chassis via the collector to tin can to earth path, very much reducing the signal level available at the collector.

- Resistors, if it is one of the solid carbon rod type with the old 'body/tip/dot colour code' as opposed to the newer 'band colour code', especially if it is a high value, more especially so if it is a 100 Kilohm (Brown/Black/Yellow), then BEWARE! These have been found to have values of as much as a factor of 10 higher than original values. One theory is that a leaky bypass condenser causes an increase in the current being passed through the resistor, this can cause heating and the heat causes the resistance value to increase. Other folk say it is simply a symptom of old age. Take your pick but DO check the value with a GOOD meter. And if the circuit or manual suggests using a meter with a lowish internal ohms/volt then don't expect to get the correct readings using a modern Hi-Tech DVM - you will not! One member suggests imitating an AVO 7 with its 1 Kilohm/Volt by putting a 270K across the meter terminals of his DVM on the 250 volts range - GOOD TIP THAT. (why did I not come up with it myself?).

- Condensers go leaky, rarely open-circuit. Be they paper type or electrolytics they can go almost completely short circuit, losing their integral capacity as they do so. The silver mica types used in RF stages are not immune to similar symptoms. These suffer from 'silver-migration' where the deposit of silver that forms the electrodes on either side of a mica dielectric tends to spread out towards the edges of the mica, this reduces the effective capacity thus playing havoc with tuning and trimming of the RF circuits. Eventually the silver deposits can slide so far as to meet across the edges of the mica and cause short circuits, more burnt resistors!

- High impedance circuits, and most valve circuits tend to be fairly high impedance, will show symptoms of the above faults early. A leaky condenser in the AVC circuit is a disaster for correct AVC operation, and it can exist for a long time before the non-technical owner realises it is there. One G3 +3 member was shocked to be told that his 640 had an AVC problem, by a visiting G2. The set was in everyday use and he had become accustomed to the set so much that the very gradual decline in performance had not registered. A check by this G3 +3 showed that C20 - a 20pF - was reading about 1Kilohm and no capacity at all. Now the G3s are today's elite of amateurs, as are the G2s, these folk had to pass a REAL C & G exam, not one of these multi-choice papers. If Alan had not spotted it then who would?

- Electrolytics are a special case, they do not often go short, or leaky, and when they do this is usually followed by a big blow-up. What happens is more surreptitious, they dry out from heat and thus lose their capacity. Nothing is more common than to find an electrolytic which reads about $\frac{1}{2}$ or $\frac{1}{4}$ of its marked value - the cause of increased hum in power supplies or instability in decoupling circuits.

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- AC Only 670C, Re Visited. -

- On page 7 of Issue 27 Steve told us about his mods to the Universal, AC/DC, model 670C. In effect he had converted this to an AC only set by replacing the 'U' series of valves with the equivalent 'E' series types, rewiring the heaters circuitry, taking out the Dropper resistor and a few other 'Universal' components and fitting a mains transfo.

- Steve went into some detail about the various mods necessary, and how he had gone about the task. Needless to say I do not, myself, approve of these mods, however apart from one or two extra screw holes on the actual power supply side of the chassis the whole mod is 'reversible' should the need arise, so no harm done to the 670C !

- Over the past year and a 'bit' Steve has been able to evaluate his 'new' set - quite apart the feeling that he is now using an AC only set fully isolated from the household mains - the set does seem to be a bit more lively than when it was original. One added bonus of the changes made is that the 670C is no longer prone to domestic QRM. Previously the Beeb computer used by the offspring had caused problems, the switching of the thermostats on the central heating had been intrusive, especially a nuisance when recordings 'off-air' had been made.

- The operation from AC via a built-in transfo appears to have cured all of this, possible having left the RF chokes in-situ in the feed to the primary of the mains transfo has helped here. A check was made at the start of the mod & it would seem that the transfo used has an electrostatic screen between primary and secondaries, so this was, of course, earthed during modding.

- Steve confesses that he had never been entirely happy with the AC/DC configuration, although the 670C otherwise met his requirements entirely. His only interests are in broadcast reception so that the lack of a BFO really does not matter. The rear mounted socket for a 'pick-up' had been rewired so that it was now serving as a Record output socket, giving a constant AF level independent of the volume control setting, simply a case of shorting out the 'break-jack' contacts to each other.

- All in all the only worry that Steve has had over the past year and a bit is that the heater supply to the DM 70 is just about 0.1 volt/0.2 volt higher than the recommended figure. The indication given by this 'magic-eye' was a lot better after conversion, due no doubt to the increased voltage, but so far there are no signs of any reduction in emission and the spare, to hand, DM70 remains in its box on the spares shelf.

- Having shown the set to another EUG member, and discussed the mods fully, Steve now finds that he is to be entrusted with a similar job on the 840A that is owned by Brian. The mod is planned for a long-weekend once all the necessary bits have been procured, since Brian has only the one receiver and cannot bear the thought of being 'without' for too long. (a traumatic experience !).

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P.S - from Ted, if you are thinking of this then do make sure that you know what you are doing and do not make holes in the front panel ! You can try a call to Philip Taylor for the valves. T.

- The 730/4 RF Amplifier. -

- Owners of the 730/4 might be interested in the 'plug-in' mod that one of EUGs members has come up with. The first RF amplifier of this model is a bit noisy compared with some of the models that came out after it.

- Having read and mused about the plug-in adaptor that was in an earlier N/L issue Tony has come up with a similar idea to be used on the 730/4, of which he has 2 examples. This meant that any mod done could be instantly compared with the original circuit as on his second set !

- The B7G type of valve, a 6BA6, used in the 730 series posed a problem as there was no old valve base to be used for the adaptor, however RS (Electromail to the mail order buyer) do market B7G plugs which fit nicely into the socket of the RF amplifier on the 730.

cont;- 730/4 mod.

- Next was the question of what type of double triode to use for the proposed cascode amplifier stage. Not so easy this as the vast valve stock on his shelf (all 20 of them !) did not include a B7G double triode. But then why did it have to be a B7G ? who said it had to be ?

- It was decided that what was good enough for the EF39 adaptor was good enough for this one, a B9A valve socket was therefore used and an ECC82 (actually a 12AU7, but direct equivalent) was selected.

- Checks on the circuit values for the 740 and the 730 RF amplifiers showed that only minimal changes were necessary to the values of the adaptor, pinouts had to be worked out of course, do double check these as hereby could lie disaster.

- After a thorough check of all connections and values the adaptor was plugged into one 730/4 and power was applied, voltages checks done during warm up and for a soak period afterwards showed all vital signs to be healthy and so a 'Y' type of resistive splitter was made up to operate both sets from the one common aerial for immediate comparison tests.

- On the lower frequency bands there seemed to be little difference either way, but this is to be expected since the external noise far exceeds the internal set noise. It was on Range 1 that the real bonus was to be found. With no discernable signal tuned in the background was definitely quieter, especially so when full RF and AF gain was used. When a signal was found the comparison was even more apparent, so much so that a decision has been made to make up a second adaptor for the second set, once that a second ECC82 can be located ! But then why an ECC82 ? again why not another available type ? A member of the local club was formerly a Tv engineer and he has a stock of exotic high gain RF amplifier valves used in Tv front-ends. Methinks a chat with him is going to be necessary.

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- 680X aerials.-

- A letter from one member who has owned a 680X for many years, these days the amount of QRM from local sources has increased exponentially and use of the old long-wire type of aerial means that the front end of the set is assailed by a plethora of alien signals, besides those weaker signals that are wanted.

- Reading up in various books and magazines, plus the 'oldish' booklet that Eddystone sent out with the 680X when it was new, has brought up the Doublet Aerial. Nothing much was known about this but a thorough search of all the available 'bumf' on the matter does seem to claim that this aerial can be of help in ridding one of those all-pervading whistles and groans. A particular problem of late at this QTH has been the QRM from a newly installed intruder alarm at a nearby garage.

- The use of a twin balanced downlead, whereby theoretically the pickup of QRM on one leg will be nulled out by the pickup on the other leg, well this did seem to be an attractive proposition. The aerial could be positioned at the furthest point of the garden from the road and the offending alarm, the twin feeder could be run directly into the shack (upstairs boxroom) and thence into the rear of the 680X. It could be kept balanced by removing the small earth link on the aerial socket. The doublet is a pretty high impedance aerial anyway and would be a hit or miss match to the 680X with no ATU - I cannot be bothered with them !

- A measure of the available length between the two trees that would support the aerial gave me a possible total length of about 85 feet, allowing a bit at each end so the aerial wires would not be touching the foliage. Half this, plus the total feeder requirements of 65 feet gave me a figure of 150 feet of twin figure 8 low current mains lead required. I bought the multi-strand stuff as sold in DIY emporiums. No central insulator was used, but two 4 inch lengths of perspex made up the 2 end insulators. Nylon line was available from work for the end ropes. The centre point was simply double knotted and then the 2 arms of the aerial split out from the figure 8 mains lead. It was found advantageous to support the centre of the aerial from a handy tree to prevent sagging where the feeder went off at right angles towards the shack.

cont; next page,-

- Tests with the aerial so far have shown that there is a marked reduction in the various forms of local QRM, however there is also a reduction in signal strength on the Long, and Medium Wave bands, not too much of a problem this as I only use the 680X on the main aerial, my 'easy listening' 840 is used from a 'mini' vertical down the side of the house. It becomes more interesting on the higher frequencies, that is above the 3.5 Mc/s band. There is now a pronounced directivity effect with best pick-up from the East or West and minimum from the North/South axis. As it happens the worst QRM came from almost due South of the QTH so this is a big bonus. Best increase in signals appears to be on or around the 7 Mc/s band, with a slightly lower increase around 21 Mc/s, none of the available formulae seem to agree with this so it can be put down to 'serendipity' & pure luck ! All in all the new aerial is considered to be a big improvement on the old long-wire, and so I would recommend the 'Doublet' principle to anybody who has the garden required to accomodate one.

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- Old Electrolytics.-

- It is a fair bet that any electrolytic more than 10 years old will have suffered a large reduction in its capacity. Even to begin with circuits had to be designed to take into account the large tolerances that came as an inevitable result of the method of manufacture of these electrolytic condensers, a 25% tolerance either way was considered good !

- Experience has shown that it is not only the power supply smoothing type which need to be checked out, those 'biggies' in the kathode bypass circuits are known to suffer just as much. The gradual change in output quality caused as one of these bypass condensers deteriorates will be missed by a regular user.

- If you are doing a repair job, or a full restoration on any model then do check out the electrolytics. I have found many cases where such as a 25 muff type in the output stage kathode was down to single figures, cases where there has been no discernable capacity and the component read as an open circuit !

- Given the large number of new stocks of high voltage electrolytics on the market these days there really is no excuse for NOT swopping them, HOWEVER it must be emphasised that due regard should be taken as to the correct polarity, when wiring up the new components. If you have never been in close proximity to an incorrectly polarised e'lytic when it 'blows' then you will hardly be able comprehend the noise and the damage that can be caused, fireworks are mild in comparison !

- If in doubt, or there is not one of the correct voltage working then use a higher voltage type, okay to use a 350 v.w in lieu of a 250 v.w but not vice-versa. Regards capacity it is okay to use say a 16 muff where you have a silly figure such as a 12 muff in situ. Same goes for fitting a 24 in place of a 16, but if you are working in the area of the mains HT rectifier you must pay some attention to the manufacturers recommended maximum capacity values, it was usual for valve makers to specify this capacity value on their data sheets.

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- Disposal of Electrolytics.-

- Anent the above item I feel it only fair to warn EUGers that the old e'lytics should not be disposed of in a fire ! I always pierce mine with a small screwdriver and put them in a plastic bag before putting them in the refuse bin. Ted.

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- E.U.G. Re-Organisation. -

- The move to a new site for the Eddystone Co; seems to be a good time to do a bit of re-organisation, or tidying up, in the present administration of E.U.G.

- Hopefully this will mean us being able to provide a better, quicker, service to members. The aim is to split up the services we provide to members, by having the various tasks done by those who do them best !

- Chris has suggested that to relieve some of the pressure on Pat and her co-volunteers at Eddystone, we leave the Company to do what they are able to do best - that is the printing and publishing of the newsletter. The other admin; tasks are going to be done by Graeme Wormald, G3 GGL - known to you for his practical construction articles in past issues.

- Jim Murphy has already offered his services - see last issue - in an attempt to get mailed in technical replies back to members quickly, and first impressions are that this is working well. If you do have a technical query, a members ad, or an item for the N/L then send it via Jim, you should have your reply back within a period of 7-8 days this way. This service whereby your technical queries, or other requests for fault diagnosis, seems to be one of the most popular of the EUG services, and letters from members who have taken up the offer of long range diagnosis are invariably very positive. Its easy when you have lived, eaten & breathed Eddystones for 50 years !!!

- Please see the way that we hope the EUG will work, as listed on the inside front cover. And remember co-operation with EUG makes it better for YOU.

- Dire Straits. -

- The thought of paying £4.75 plus £2.50 for p & p for a replacement UY41, when he was on unemployment benefit, was anethema to Clive. The fact that his trusty 840A was off the air as a result of the blown 'bottle' made some kind of a repair vital. The junk box did contain a number of 1 amp capacity diodes and many of the power type of 3 or 5 watt resistors as used in the early Tv sets, there just had to be a way out, without doing anything drastic to damage the value of the 840A.

- A bit of mental arithmetic - sans calculator this - gave a value of 310 ohms as the necessary resistor to replace the UY41 heater in the chain, with a power rating of just over 3 watts. A 330 ohm, 5 watt wire wound type new and unused was found and considered to be eminently suitable. For the rectification of HT it was decided to be safe and fit 2 of the 1N4004 types in series, with the necessary small condensers across each diode.

- The long leads on the resistor meant that after fitting heat resistant sleeves the leads could be fed down the pin holes of the UY41 socket and soldered to the tags underneath, the resistor being now mounted above the socket in a horizontal position - I have learned from experience that these wire wound types simply hate being fitted vertically as all the heat produced in normal operation rises to the upper end of the component and causes early failure.

- The diodes and protective capacitors were mounted across the pin tags under the chassis, and the mod was done, apparently so anyway.

- Powering up brought the usual 'lights' from the bottles and then the hoped for signals. What was unexpected was a slightly increased residual hum when the gain was turned down. All the usual checks were done and nothing untoward came to light, several tricks of the trade were now tried out. Eventually there was only one satisfactory way of curing the residual mains hum. A 0.1 muf poly type of condenser rated at 440 V.AC was wired across mains to neutral where the supply entered the set, and a 1 meg $\frac{1}{2}$ watt resistor was wired across the socket pins where the 1N4004s were mounted. HT is up by a few volts but well within the stated tolerances and the 840A is now back on the air. The only cost involved was the slight depletion of the junk box contents, but there is still almost a full tea chest, so not to worry.

- Not Always what it Seems ! -

- A Scottish member recounts that on a visit to his 'Local' recently he overheard a part of a nearby conversation. Something to the effect that one chap was having problems with his 750 taking too long to warm up. As our eavesdropper prepared to join in with some pearls of wisdom, showing his knowledge of things Eddystone, the other chap carried on by adding, "of course all BMWs take a while to warm up" - so our EUGer decided to keep quiet after all.

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- Useful EF92 ? -

- Peter Lepino has written in re an 870 that he is restoring to original, after undoing some 'fancy' mods. It was a surprise to find that the 12BA6 used as the IF amplifier had been replaced by an EF92. Now the 870 is an AC/DC set with a series heater chain, and uses 0.15 amp valves, the EF92 is a 0.3 amp heater type, at 6.3 volts instead of the 12.6 volts of the 12BA6. Yet the set apparently did work - after a fashion, amazing what one can get away with isn't it ? All that was needed when using the EF92 were some changes to the valve socket wiring.

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- Battery Operation of the EB35 Series. -

- Something that I know from long experience, and take for granted, has come up with another EUGers set. The VHF/FM band is catered for by a separate two transistor convertor unit, separate from the MF/HF transistors that form the RF and Oscillator/mixer stages. As the batteries used get depleted and the terminal voltage drops to around 6.0 - 6.75 volts the VHF/FM convertor will stop oscillating, causing the FM band to go 'dead' - whilst the LW, MW and SW ranges will carry on operating. In some cases it is possible to continue using the same batteries for some hours on the MF/HF bands, long after the FM band has gone 'kaput'. This is not a fault of the receiver, it is a timely reminder that you need to splurge for a new set of batteries !

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- Famous Voices gone from the SW Bands.-

- Over the past months it has been announced that in the interests of financial economy, both the Voice of America and the Radio Canada International services are to go QRT. So far we have lost the European services in English from the VOA, although some english programmes for other areas will still be heard in the UK. RCI has this month sent out a circular letter to all subscribers that the Government is closing down RCI due to budget restrictions. Isolationist Policies !

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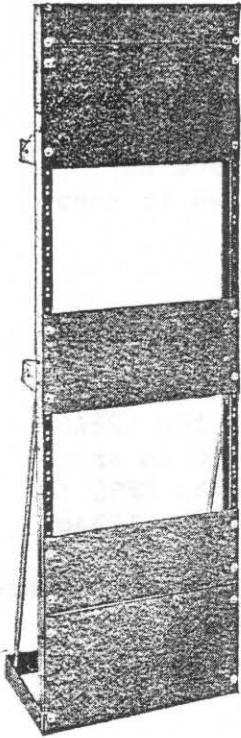
- Low Melting Point Solder, Again.-

- After having replaced the wire-wound surge resistors in the secondary circuit of his Eddystone this member, very embarrassed member ! left the set on powered up on the bench whilst going down for a meal. He came back into the room that serves as a shack to find a suspiciously quiet receiver. Dial lights on, heaters on, but not a peep from the speaker. Turning the 940 on its head once more he found that one surge resistor had dropped off onto the bench, the other was hanging - very dangerously - by one end.

- It was a combination of bad soldering practice and wrong solder that was the cause. The replacement resistors were 150 ohm 5 watt types and were just 'tag' soldered into place with PCB low melting point solder.

cont;-

EDDYSTONE STEEL TRANSMITTING RACKS



Showing front view of complete relay rack and extension outfit, 63" panel space (36" x 12" units). Any combination of panel sizes can be used. Smart appearance, attractively finished, and will easily carry all weight required. (A 10-stone man can stand on top tray.)

No. 1107. COMPLETE RELAY RACK (A).
International standard sizes throughout, comprising welded steel base, vertical steel channels fully drilled and tapped to take any panel combination with steel tie bars and all nuts and bolts, finished black throughout, 31½" panel space (18" x 1½" units), can be extended at any later date to full size 63" panel space 25/-

No. 1108. RELAY RACK EXTENSION OUTFIT (B & C).
31½" panel space (18" x 1½" units), comprising vertical steel channels as above, steel jointing channels and brass oxidised nuts and bolts 12/6

No. 1109. STEEL CHASSIS (D).
Welded corners, 16 g. .0625 thick, size 17" x 10" x 2", finished black. Drilled for bracket fitting 4/6

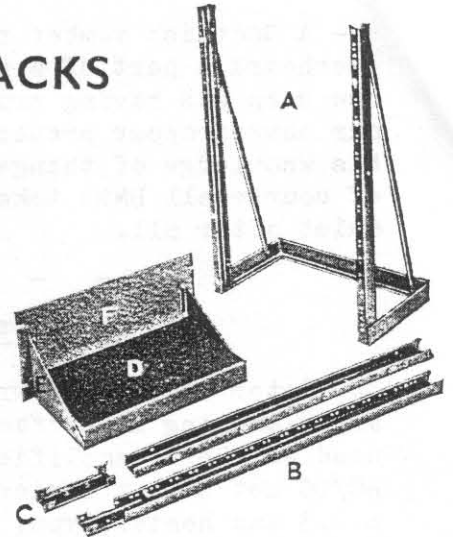
No. 1110. STEEL BRACKETS (E).
Inturned edge to carry chassis 16 g. .0625" thick, drilled for panel and chassis fitting, finished black ... 2/6 per pair

No. 1111.
Black oxidised brass bolts and nuts (4 are required for fastening chassis to bracket and 4 panel to bracket) 1/3 per dozen

No. 1112. STEEL PANELS (F).
¼" thick, slotted for rack mounting and drilled for bracket, black ripple finish, does not hold dust.

No. 2.	19" x 3½"	...	...	...	2/3
No. 4.	19" x 7"	...	...	...	3/-
No. 5.	19" x 8½"	...	...	...	3/9
No. 6.	19" x 10½"	...	...	...	4/-

No. 1113.
Round head black oxidised brass bolts and washers for mounting panels to rack (4 needed) 1/3 dozen



A small view showing the individual parts for relay rack assembly. These can be purchased to suit requirements.

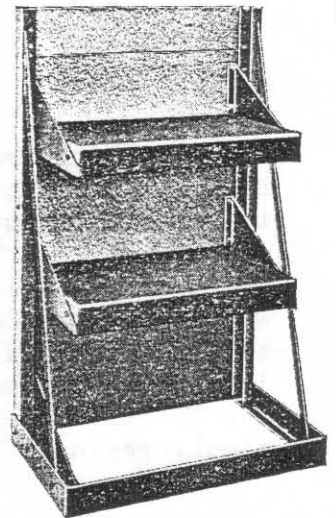
APEX TRANSMITTER PANELS AND CHASSIS.

Webb's have produced a range of steel panels and chassis ideal for the experimenter. They are extremely easy to drill and sizes conform to international standards, and have welded corners. For use with Eddystone Racks where a wider chassis is needed.

Chassis, standard size, 17ins. x 12ins. x 2ins. deep, finished black	...	...	5/6
17ins. x 12ins. x 3ins. deep, finished black	...	...	5/6

Special panels and chassis to order.

NOTE.—All items above, including Transmitting Racks, are carriage paid over 5/- in value.



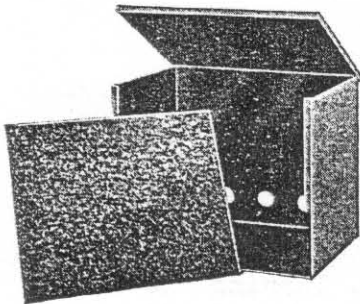
Back view of a complete rack assembly, 31½" panel space. At any later date this can be extended to full size with extension outfit (B. & C.).

DIE-CAST ALUMINIUM CHASSIS

This chassis provides a strong and rigid foundation for all kinds of small receivers, H.F. amplifiers, power supply packs, etc. It measures 8½in. x 5½in. top baseboard sizes, and is 2¾in. deep. Two bakelite terminal panels are provided for the existing cast in apertures.

Cat. No. 1117. Code CHASO. Price 5/6

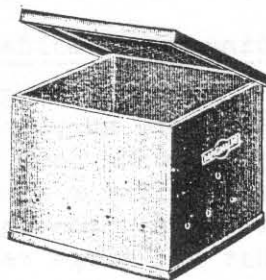
STEEL CABINETS



EDDYSTONE CABINET.

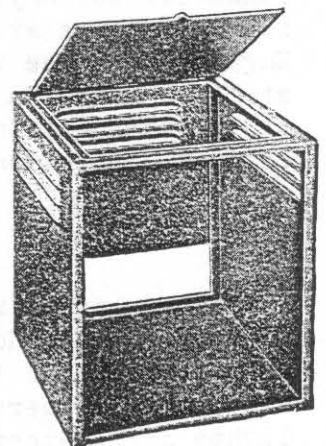
Strongly built with hinged lid and finished in black ripple. Holes in back for entry of leads. Size 6½" wide, 6" deep and 7" high.

No. 1061 Price 9/6
Undrilled, ripple finish panel, Extra 1/9.



SCREENING BOX.

Ideal for frequency meter, field strength instruments, etc. Size 6½" cube, in grey cellulose finish. Top and bottom are detachable. Price 6/-



EDDYSTONE CABINETS.

Smart black ripple finish cabinet, with ventilating louvers at back and sides. Complete with undrilled panel.
No. 1033. 8½" wide x 9½" back to front x 9½" high ... Price 10/6
No. 1034. 17" wide x 9½" x 9½" Price 18/6

cont; Low Melt Solder.-

- What was needed were 140 ohm, 6 watt (minimum) resistors which were properly terminated by actual physical joints before soldering with High Melting Point solder. This practice of just tagging replacement components into place with a blob of solder is not sufficient in valve type equipment, although it may work okay on PCBs. I was always taught as an apprentice that a 'physical' joint had to be made first, then the iron had to be 'wetted' and applied to the joint to bring it up to soldering temperature, only then was the solder applied to the point where the iron tip made contact with the joint. The solder would then flow into the joint. Surplus solder was then removed.

- Blobbed joints are always at risk of being, or becoming, dry joints. A dry joint may be conductive when first made but it will with time become either an intermittent open circuit or a complete 'diss'.

- Where components such as wire wound resistors, valve sockets or any other item liable to get warm are concerned then do not rely on the solder to hold a component in place.

- - - - -
- COMPONENTS CATALOGUES, STRATTONS OR EDDYSTONE.-

- Do you have any original components or model catalogues, any date ? It would be appreciated if you would allow EUG to copy them, all costs will be refunded of course.

- Believe it or not the preparation for the Xmas 1996 Supplement is already under way, it is to be as complete a listing as possible of Catalogue/Stores parts numbers - Not Model Numbers !

- Practically nothing was recovered from the two factories that were fire bombed in the blitz of Birmingham during WW II, apparently the firewatchers on duty managed to save just a few items of testgear when saving themselves.

- Paperwork all went up in smoke and flames. Some blueprints were redrawn in the postwar years, from various sources, many others were lost for ever. Catalogues in private hands are just about the best source for pre WW II component and model info, so come on, don't be a passive member of EUG. Do please contribute to our files so that all members may benefit. Thanks.

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- The Scientific Four, Constructional Manual.-

- A photocopy of this is now held at EUG and plans are being made to do a reproduction of the manual. One member is already collecting the necessary parts to build a 'repro' Sci-4 receiver so good luck to you Simon !

- - - - -
- S.358x Output Bottle.-

- According to the Factory Manual for this set as supplied to the Admiralty in 1942, the output valve should be an EL32 (CV 1052), and not as some would have us believe a type EL35 ! In some sets that were to be operated from battery supplies the EL32 was replaced with a 6J5, this necessitated an increase in cathode bias resistor from the standard 200 ohms up to 1 Kohm.

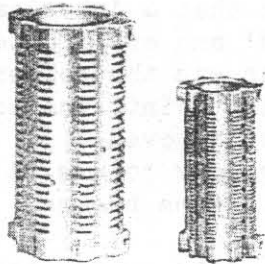
- Having said this I do know of many 358/358x sets where a 6J5 has been functioning happily for many years without a bias resistor change so 'not to worry' there.

- I have seen a wide variety of other 'bottles' utilised in this stage of the series. Ranging from 6F6 to 6V6 on the tetrode-pentode side to the 6SN7 with both triodes paralalled up, all seemed to work okay and as valves are getting more expensive as years go by then I guess they solve a problem.

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COILS AND COIL FORMERS

WEBB'S APEX COIL FORMERS.



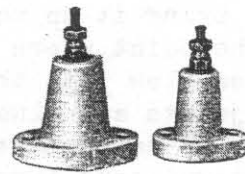
Glazed Porcelain. Type "A,"
5in. x 2½in., 24 grooves.

Price 3/-
Type "B," 3½in. x 1½in., 32
grooves. Price 2/-

Plugs for use, with either type
coil 3d. each

Sockets, chassis mounting
2½d. each

WEBB'S APEX AMERICAN TYPE STAND-OFF INSULATORS.



White glazed
Porcelain, fitted
with nickel-
plated terminals
(4BA).

TYPE WA. Height (excluding terminals) 1½in.
Price 6d.

TYPE WS. " " " 1in.
Price 4d.

EDDYSTONE LOW LOSS FREQUENTITE FORMER AND BASE.

A Frequentite ceramic former for transmitting and other high frequency apparatus. The former is 5in. x 2½in., and may be mounted as illustrated or on Frequentite pillar insulators. Spiral grooves take 26 turns of wire up to 12 gauge; 14 holes are provided for leads and tapping connections. Each former is supplied with winding data for Amateur frequencies, and is designed for coils up to 90 metres. Cat. No. 1090 ... Price 4/-

LOW LOSS FREQUENTITE SUB-BASE.

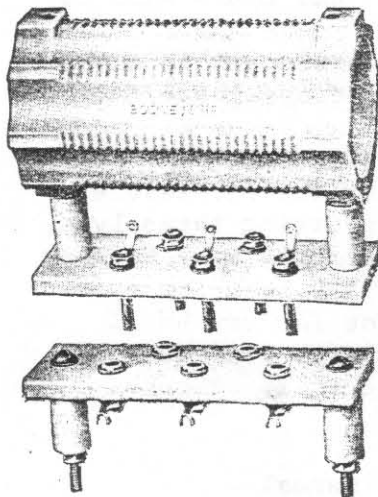
The sub-base is also in Frequentite ceramic and is easily attached to the former by two bolts and Frequentite pillars. It can be used separately as a base for self supporting Inductances. Helicically slotted power plugs give positive electrical contact and even fitting to ceramic is assured by lead washers. Leads are secured by heavy gauge tinned phosphor bronze self-locking soldering tags.

Cat. No. 1091 ... Price 3/6

LOW LOSS FREQUENTITE BASE.

The base is provided with Frequentite pillars for above chassis mounting. Heavy duty power type sockets give sound electrical connection with sub-base and lead washers on each socket ensure even fitting to ceramic. Leads are secured by heavy gauge tinned phosphor bronze self-locking soldering tags.

Cat. No. 1092 ... Price 3/9



EDDYSTONE

TRANSMITTING INDUCTANCES.

Cat. No. 514.

Ideal for small and medium power transmitters. Will carry up to 500 watts anode current without heating and give a very high degree of efficiency. Wound from soft drawn 20 gauge H.C. Electrolytic copper and are supplied in ¼in. or ½in. tube form. Dipped bright and lacquered to prevent oxidation. Supplied in 3in. diameter helix, any number of turns up to 15 maximum, ends flattened, pierced and tinned, ready for mounting.

¾in. outside diameter Copper Tube.

Price 4d. per turn

½in. outside diameter Copper Tube.

Price 5d. per turn

TAPPING CLIP.

For Inductances and telescopic aerial.

Cat. No. 516 ... Price 6d. each

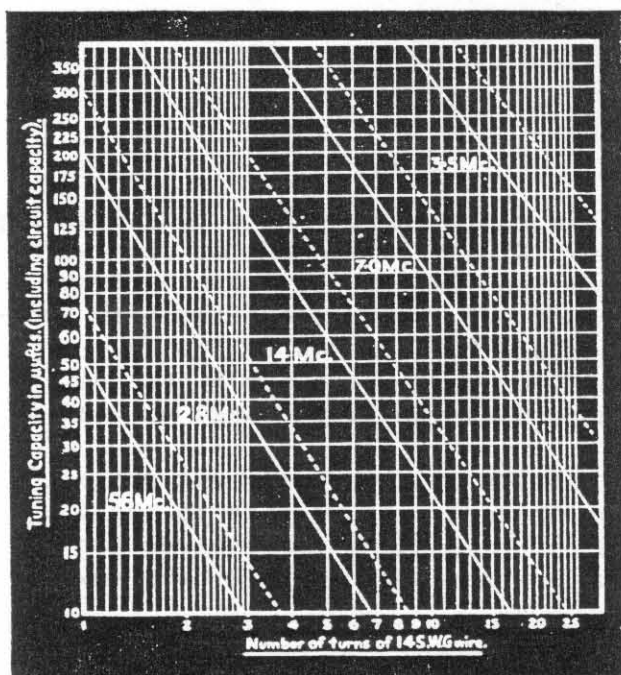
TRANSMITTING COIL WINDING DATA FOR EDDYSTONE CERAMIC FORMER TYPE 1090.

Before the number of turns for any given frequency can be ascertained, it is necessary to decide the value of the capacity to be used on the said frequency.

As a general guide, the optimum capacity in micro-microfarads will approximate the wave length in metres; thus:—
For 20 metre operation optimum capacity would be 20 mmf.
For 10 metre operation, optimum capacity 10 mmf. 160 metre operation optimum capacity 160 mmf.

The chart opposite has been drawn to include the value of stray and valve capacity, which is taken to be approximately 10 per cent. of the tank condenser. As an example, we will suppose that total value of 20 mmf. has to be used in a tank circuit operating on 20 metres. To ascertain the number of turns in a coil on the 1090 former, the tuning capacity should be read as 20 minus 10 per cent., that is, 18 mmf., giving 11 turns.

The group of curves in solid black line refer to the coil formers type 1090. The broken line curves give data on the small Apex coil form type B.



- Which Model to Choose ??? -

- It often comes up in letters, which model shall I buy is usually the question. There is no definite answer is there ?
- The various factors that come into play here are all personal, how much cash can one afford, what model is available, what does the buyer wish to listen to, and lastly there has to be the one of available space.
- If you want the best sliderule scale type and have the cash then try for a 940 or an 830/7, not the /9 as I am always wary of these - too many mods to the basic 830 circuit for reliability.
- If it is a case of limited space try for a simple 870 or 870A for broadcast listening, go for an EB or EC model if you don't mind solid-state sets and if space is really limited.
- Models available, if you are patient I guess that even the fabled 700 or 720 might come your way. Being more realistic (NO NOT REALISTIC - as in Tandy). you can expect far more 730s or 830s to be offered for sale than you can 940s.
- Reliability will be better in one of the later models, very few 358 or 400 sets can be bought without needing repairs, the 940s still seem to be going okay and need little servicing.

- And the Aerial ??? -

- No matter what model you do finally buy you must bear in mind that the results are only going to be as good as the aerial that you use.
- Not even the best of 940s can function on a few feet of wire hanging out of the socket, put up the longest and highest aerial wire that you can, given the limitations of your QTH. If you live in an area where locally generated QRM is likely to be a problem then you should try for a balanced dipole or doublet type. Feeding it with co-ax may work but there will be unbalance and a balun could help. If you use open balanced feeder then a balun is not needed but you may find that putting a single 180 degree twist in the down feed line will help even more, just one of those tips that come from long experience.
- With the balanced down feed the link between chassis earth and the lower end of the aerial coils must be removed, so as not to lose this link fasten it to the back of the set with a bit of tape, they are unobtainable nowadays.

- Mains Fluctuations.-

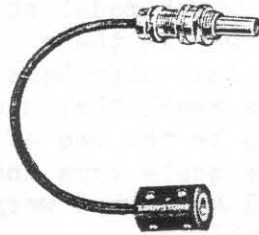
- The change in mains voltage from 240 to 230 does not appear to have had much effect on the wide fluctuations that some EUGers suffer daily.
- Davey lives in Clwyd and he states that at 'mealtimes' the local supply can be as low as 200 volts throughout the village. The same happens when the commercials come on in between parts of the much watched Tv shows, people putting on the kettle for a 'cuppa' no doubt.
- Davey says that whereas he can meter the mains at 255 volts at about 0600 hours he will see it going up and down between this figure and 210 all the morning, his local electricity authority has monitored the effect but the message from Big Brother is simply that nothing can be done.

EDDYSTONE FLEXIBLE COUPLERS



REG. DESIGN.

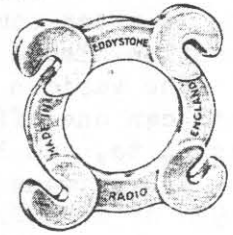
EDDYSTONE
The design of this coupler is such that although completely flexible, it is free from back-lash. Diameter is 1 1/4" and the metal bushes take a 1/4" spindle, and are each fitted with two grub screws.
Cat. No. 1009 Price 1/6



Cable length 5 1/2

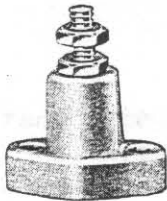
EDDYSTONE
A flexible cable coupling shaft which will drive through 90 deg. perfectly. A Karamot insulating hub takes 1/4" spindle. The driving end has 1/4" shaft and 1/4" fixing hole. Is recommended for all purposes except tuning drives where extreme freedom from backlash is essential. Complete with panel bush.
Cat. No. 1096 Price 3/6

FEATHERWEIGHT CROSSFEEDER BLOCK



EDDYSTONE
FOR ELIMINATION OF MAN-MADE INTERFERENCE ON SHORT WAVE AERIAL SYSTEMS
This Crossfeeder Block is of minimum size to give 1 1/2" line spacing. The Featherweight Crossfeeder Block is made of diakon, an improved Trolitul material suitable for outdoor use, possessing remarkable high frequency insulating properties.
Cat. No. 1041 Price 4/6 per doz.

MIDGET STAND-OFF INSULATOR



Actual Size

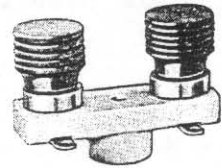
EDDYSTONE
Made from Frequentite with N.P. brass parts. The new quality Frequentite used closely approaches quartz in its characteristics as a low loss dielectric at high frequencies.
Cat. No. 1019 Price 4/6 doz.

EDDYSTONE EXTENSION CONTROL OUTFIT



The insulating portion of this outfit is made from precision drawn paxolin tube of high quality which cannot warp or bend, as does ebonite. The length of the insulating part is 4" 1/4" brass insert is 3" long. Panel bush, 1/2" outside diameter.
Cat. No. 1008 Price 1/3

FREQUENTITE TERMINAL SADDLE



EDDYSTONE
These 2-way saddles are mounted on a low loss Frequentite base, with one hole fixing. 48A terminals with insulated heads coloured red and black. Soldering tags are also fitted.
Cat. No. 1046 Price 1/-

INSULATED BRACKET.



EDDYSTONE
A small insulated fixed bracket is an item that is handy for innumerable purposes. D.L.9 insulation of ample strength is mounted on a brass fixing base. The construction is such that the insulation cannot turn on the base. Fixing centre height is 1 1/2".
Cat. No. 1116. Code BRAKT. Price 1/3.

JOHNSON FEED-THRU INSULATORS



Special attention has been given to obtaining high mechanical strength through heavier construction, at the same time increasing the breakdown voltage. Flat mounting surfaces with cushion washers eliminate breakage.
Type 42. 1 1/2" Price 8d. each
Type 44. 2" Price 10d. each

INSULATING PILLARS



EDDYSTONE
Made in two heights with white D.L.-10 insulating portion 7/16th" diameter. N.P. metal foot with 2-hole fixing and long 68A screw shank (adjustable) at top.
Cat. No. 1028. 2 1/2" Pillar ... Price 6/- doz.
Cat. No. 1029. 1 1/2" Pillar ... Price 4/6 doz.

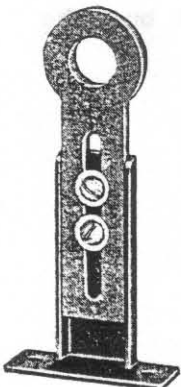
JOHNSON FLEXIBLE COUPLERS



Non-rusting phosphor bronze flexible shafts with 1/4" hubs. They permit control of units offset or at angles up to 90 degrees.
Cat. No. WFC20. 3" long ... Price 1/3
Cat. No. WFC21. 6" long ... Price 2/6

Pyrex Heavy Duty Glass Aerial Insulators. 7 1/2" by 2" (diameter largest flange). Exceptionally long, leakage path Price 6/9

ADJUSTABLE INSULATED BRACKET

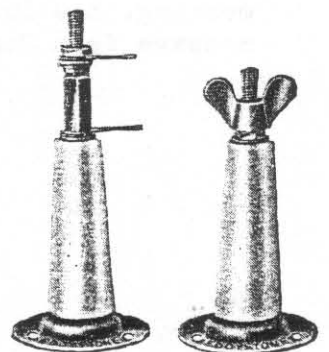


EDDYSTONE
D.L.-9 INSULATION. The insulated portion, which is made from D.L.9 high frequency dielectric, is adjustable, giving the mounting hole centres of 2 1/2" to 3 1/2" from the baseboard. The size of hole is 15/32nd" or 7/16" clearance.

Cat. No. 1007 Price 1/6

EDDYSTONE FREQUENTITE PILLAR INSULATORS

Made of glazed Frequentite and tested to a breakdown voltage of 30,000. It is recommended for all high voltage insulation. Supplied in two types, one having a 2 BA fixing bolt and wing nut, the other a heavy duty plug and socket fitting with soldering tag connections. Highly suitable for outdoor insulation.
Cat. No. 1049 Price 1/6
Cat. No. 1095 Price 1/8
Square heavy duty plugs for Cat. No. 1095 Price 2 1/2d. each



- Future Featured Model Receivers ? -

- I don't like to get too far ahead with these as the model featured depends on my mail, if I get two or three mentions and requests then that model will be in next issue ! However with a bit of a build-up of requests over the last couple of months I shall try and predict the next couple of issues - up to the end of the subs; year at least, and then into the 7th year of E.U.G.

- How about the following,-

Issue 36, - 870A
 Issue 37, - 910
 Issue 38, - 720
 Issue 39, - 850
 Issue 40, - 680X

- Now don't hold me to that but it is my New Years Prediction , and Astrology doesn't come into it anywhere ! Did you hear about the Financial Comptroller of one City in the U.S. of A (where else could it happen ?). Anyway he got an Astrologer to predict for him the futures of some stocks on the New York Stock Market. He then gambled with 1.6 Billion Dollars of the City Budget on the predictions of the Astrologer. Result ??? Well the city has just had to file for bankruptcy as of the Year-end. TRUE. What it doesn't say is if he kept his job ?! (What is it to do with Eddystone ? Nothing just found it funny.)

- The 890 VHF receiver, and the 930 VHF receiver.-

- Well I have been delving deep in the files just lately as Peter Lepino has been on to me about two of his recent purchases, and a manual that came with one of them.

- The manual is actually marked 890, fair enough, but the two sets are both model 930s. Peter has verified that apart the actual frequency coverage the circuit of the 890, and manual info appear to fit the 930. He asks whether it could be that the 890 did not exist, was maybe just a prototype or possibly just a schematic number ?

- Going through what I know by personal experience, and what I have in the files here I have to shoot down the theory Peter, sorry but it was a nice try !

- I have seen some 890 sets, rack mounted, and so I know they exist(ed). I have also a mention of them, just found in a letter from Geoff; Woodburn when he was writing to me in the late 1980s, the 890 was mentioned in one letter when he told me that he had been digging through old manuals and blueprints at the Bath Tub. The 930 also exists, as Peter now knows. I know that back in the 1980s Richard Baker did not have a 930 in his collection of well over a hundred sets by Eddystone, so consider yourself very lucky Peter, bet you will have no problems if you wish to flog one of them ! Wonder what happened to the 930 that was in Broadcasting House in mid 1968, used to monitor FM from Wrotham ? Anyway Peter thanks for your photocopy of the manual and schematic and they will go into the EUG files should any member want a copy in the future.

- Matching Accessories. -

- No, we are not into the high heels and handbag type of accessory in this Newsletter. What we are on about are the various types of speaker unit, the 'S' meter, the several vibrator psus, etc ; which were made by Strattons / Eddystone for use with their many models. In many cases the items were made available with matching colour schemes to go with the various colours of the receivers.

- Every member will know the standard type of diecast speaker unit, how many know that it came not only in 4 colour schemes but also in two sizes ? Fact, it did. The one that we all know so well is the 5" speaker in a 7" cast case. This catalogue type 688 was the big brother of the other type, the 652 which utilised a $3\frac{1}{2}$ " speaker unit and had an overall diameter of 5". The full list of known versions of these 2 types is as follows.

- ROUND DIECAST SPEAKERS,

Cat No; -	688	- Black wrinkle	-	£2/17/6d.	-	0/all diam; 7".
"	688A	- Grey hammer	-	"	-	"
"	688B	- Dark polychrom;	-	"	-	"
"	688E	- Oyster grey	-	"	-	"
"	697	- Brown wrinkle	-	"	-	"
"	698	- Grey smooth	-	"	-	"
"	652	- Black Wrinkle	-	£1/17/6d.	-	0/all diam; 5".
"	652A	- Grey hammer	-	"	-	"

- Even I have not seen an example of all of these units, doubt that any of you out there will either but they ARE well documented in Company catalogues.

- In 1964 they came out with yet another General Purpose Loudspeaker which could be used free standing or wall mounted. It was housed in a deep-drawn steel case 7" square by $3\frac{1}{2}$ " deep. The speaker unit is a 5" diameter unit of the then standard 2.5/3 ohm impedance. There were two flavours of this model as below,-

Cat No; -	899	- Oyster hammer finish.
"	899F	- Smooth 2 tone grey finish.

- Also current in the catalogue for 1964 was the Plinth speaker, which was made to be mounted under the case of the receiver thus raising the front panel to an angle more suitable for use by the operator. This bolted into the holes pre-drilled in the case of most standard cased Eddystone models. It came only in smooth grey but I have seen some wrinkle finish that were obviously to a special order (Marconi ?).

Cat No; - 906 - Smooth grey.

- A mystery speaker unit that was described as a General purpose Speaker was also mentioned in the 1964 catalogue it was not pictured as were the others and I have no details apart the following,-

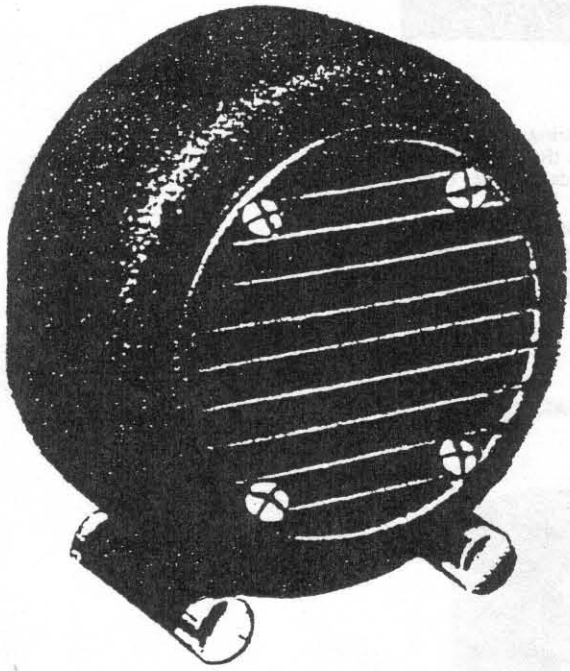
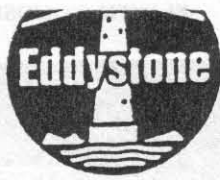
Cat No; - 935 - Steel case $8\frac{1}{4}$ " wide x $4\frac{1}{2}$ " high x $2\frac{1}{2}$ " deep and in one flavour only, Grey. It was the usual 2.5/3 ohm impedance and for wall or free mounting.

- There were others, an early model with no part number went with the All World 8 receiver and was about 10" square, nothing else is known.

- The model S.478 speaker unit was a comms; type speaker and it was provided with commercial equipment of the late 30s and early 40s, i.e. the 440/450 VHF transmitter/receiver equipment. According to the 'blurb' it was 10" x $9\frac{1}{4}$ " x $4\frac{3}{4}$ " deep, weighed in at 8lbs, and was in ripple grey. Another version of this unit in battleship grey smooth finish was often provided with the S.358/400 model of receiver.

- Now that I have got going I shall continue, next issue a few other of those 'Desirable Accessories' - sorry for being so remiss in not mentioning them so far, you did right to chastise me for the omission Dave !

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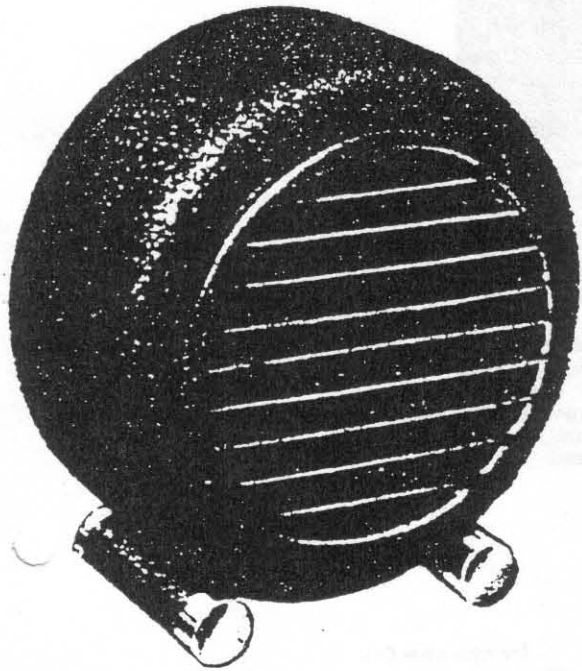


EDDYSTONE

7 INCH ROUND DIECAST SPEAKER

4 CHROME SCREWS ON THE FRONT.

CAT. No 688.



AS ABOVE WITH PLAIN FRONT.

CAT No 688.

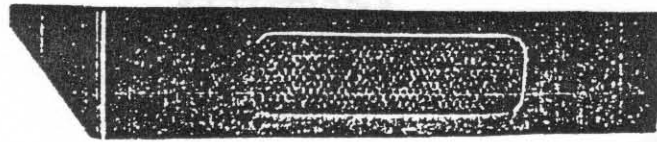


EDDYSTONE MINI DIECAST SPEAKER

AS ABOVE BUT SMALLER IN SIZE.

ONLY 5 INCH IN DIAMETER.

CAT No 652.

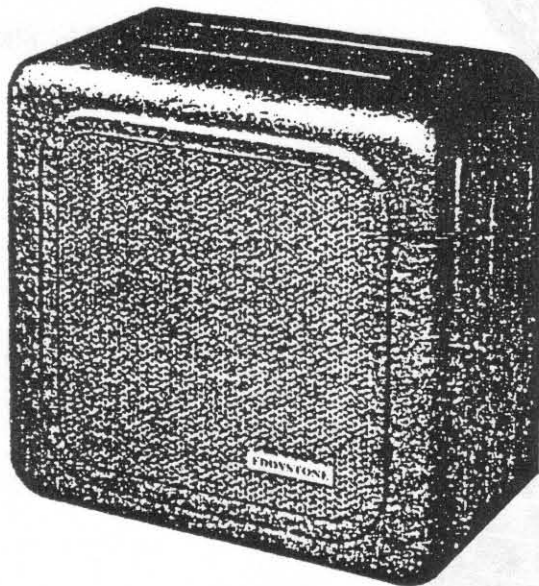


Cat. No. 906

A dual purpose unit, which is intended for fitting underneath a communications receiver, the latter being thus tilted at an angle which allows better viewing of the scales and leads to easier control of knobs and switches.

Fitted to the front panel is an elliptical speaker of 3 ohms impedance, which is suitable for direct connection to the speaker output terminals of Eddystone receivers and most other makes also. The width is 16", depth 10½", and height at front 3⅞". Weight 2½ lbs. Finish — smooth grey.

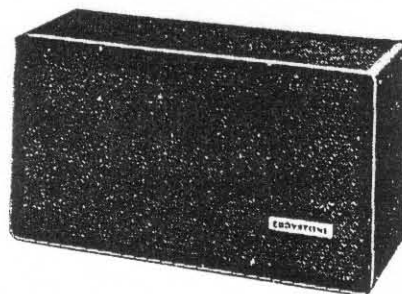
GENERAL PURPOSE LOUDSPEAKER



A useful general purpose loudspeaker unit, housed in a deep drawn steel case with measurements 7" square by 3½" deep. A special baffle is fitted to improve performance. The Unit can be used either free-standing or it can be easily mounted on wall, bulkhead, or shelf. Speaker unit is 5" diameter and the impedance is 3 ohms. Supplied complete with connecting lead.

Cat. No. 899. Oyster Hammer finish.

Cat. No. 899/F. Smooth two-tone grey finish.



The Eddystone Cat. No. 935 Speaker which matches Eddystone receivers physically and electrically. Also, of course, it can be used with other receivers.

The Cat. No. 935 speaker is recommended for use with an Eddystone receiver (communications or broadcast) which it will match by correct choice of colour physically and electrically.

Manufacturers:

STRATTON & CO. LTD.

ALVECHURCH ROAD, BIRMINGHAM 31

Telephone: PRIORY 2231/4

Cables: STRATNOID, BIRMINGHAM

Telex: 33708

- ENDIT -

- That is it for another Issue, not so much incoming mail this last month for some reason, still getting over the Xmas break maybe ??

- A lot of my correspondents are not EUG members, as with the recent letter from a chap in Nova Scotia, who has an Eddystone Scientific Three Portable in working order. He states that he has solved the HT battery problem by series connecting NiCd PP3 batteries and taping them into a 'block'. This gives adequate life for 'demo' purposes. I do not mind helping him out as he comments that the overseas subs are almost half of his weekly wage.

- No excuses for the 'old' adverts in this issue, I hope they do not upset anybody but they are asked for.

- If you have any item that you wish to have in the N/L then send it to me, c/o Jim at the address below. Ted.

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- ADDRESS FOR MAIL FOR INCLUSION IN THE NEWSLETTER, OR FOR TECHNICAL QUERIES. (not re subs or copies of manuals which still go via the factory.).

Jim Murphy, EUG.
63 Wrose Rd;
Bradford.
West Yorks;
BD2 1LN.

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* FREE MEMBERS ADVERTS *

- Wanted, 960, EB37, EC10, 820, 870, 870A, 688, 623, 890, also any Mimco receivers, speakers by Eddystone, leaflets and manuals for same. Please call Peter on 01374-128170, (Surrey). Cash waiting.
- Sell, 770R, near mint condition, works well, known history and handbook, for £85. Also 770U in good condition works well, with handbook for £65. Both sets now surplus to my needs so would sell or swop for other Eddystones with possible cash adjustments. Still looking for a 960. Phone Anthony on 01686-630255, (Powys). (also available 750 £75 CWO)
- Wanted, an EB35 II in very good working order please as I have no repair facilities. Please write to George Handbury-Grassick, 180 Crescent Drive, Petts-Wood, Orpington, Kent, BR5 1AU, or write to EUG who will forward the letter, Thankyou.
- Wanted, by EUG, any old catalogues of Strattons / Eddystone components & parts. Will copy and then return, all your costs paid. Write Ted Moore c/o Jim Murphy at the address given in the N/L, Thanks.