(28)

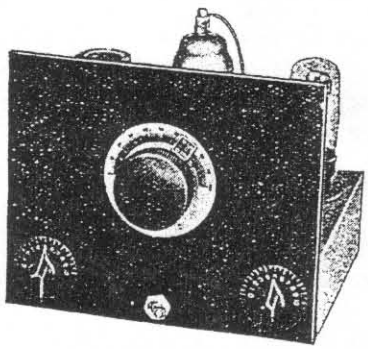
ALL WORLD TWO

Eddystone User Group

Newsletter

Issue No: 28

Featured Model: All World Two. circa. 1936



*A non profit newsletter for Eddystone Users

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

*Please address all mail to:

Eddystone User Group
c/o Eddystone Radio
Alvechurch Road
Birmingham B31 3PP

FREE MEMBERS ADS - Please make sure that you put all the details, i.e. Sell or Wanted, Model & Suffix, Condition, Collect or Deliver and last but not least your contact details - name, phone number preferably or address.

Any remittances for subscriptions, badges or manuals must be by cheque or money order. A cheque must be for sterling and on a UK bank as otherwise the bank charges to convert foreign currencies is likely to be more than the subscription. May your cheques payable to the **Eddystone User Group.**

The Year for the Newsletter begins with the May/June issue. Issue 24 was the last of year 4 issues and this newsletter is the fourth of year 5. There are 6 issues per year and if you join after the annual subscription date "May" then you will get back copies from the first issue of the current year to date. Your subscription will end with the March/April issue.

Subscriptions are £10 per year UK. and £11.00 per year Europe. An attractive metal lapel badge specially designed for the EUG is available to members at £2 each.

Copies of Manuals and circuits are available for most Eddystone receivers through the EUG with discounts for members. We have not been able to complete the task of itemising all the manuals and their costs as promised last time but depending upon size and whether it is a photocopy, most manuals cost between £3 and £10.

Back copies of all newsletters are available at £2 each post paid.

All mail for EUG to be addressed to

Eddystone User Group
c/o Eddystone Radio Ltd
Alvechurch Road
Birmingham B31 3PP

PLEASE do remember that we cannot answer queries by telephone. THE EUG is run by volunteers at Eddystone and we can only respond to written queries.

A message from Chris Pettitt, MD of Eddystone Radio Limited,

Well Ted has produced a really bumper issue for Xmas 1994 and the added bonus of a compilation of faults will appeal to many of you. We got a little behind here at Eddystone on the admin side due to Pat Hawkins who does all the leg work being off work. I am glad to say that she is back now and trying to catch up. I am sure that all members appreciate that we can only devote so much time to the EUG's needs.

I had the opportunity of giving a talk to the Oxford and District Radio Society in November on the history of Eddystone Radio. It was nice to meet so many who remember Eddystone from her glorious past. We hope to be at the National Vintage Communications Fair next May and will take the opportunity to meet as many of you as possible.

Late Adverts just received.

WANTED: Still seeking a round diecast speaker and/or oblong steel speaker, Type 935 or similar. Anthony Richards 0686 630255.

FOR SALE: Eddystone Model 1830/1 with manual in cabinet and in as new condition. £295 Please ring Michael Oddy 0742 585937 (Sheffield)

FOR SALE: Eddystone 730/4 receiver, as new, never used, with ATU and LS (Grey) and manual. Fully boxed £120 incl P+P Clarke. 0904 768280

- Issue 28, Xmas 1994.-

- A bumper issue this one, plenty to keep you occupied over the holiday period. From your mail I see that a number of members have got projects lined up for this end of year break. They seem to range from full time restoration jobs to simply de-bugging the favourite station receiver.

- Ian Sanders intends to strip and completely clean his 750, the first time he will have done this in 17 years of ownership. Simon Forbes has provided himself with the necessary test gear and a new set of valves for a full service job on his 770R. Just hope that the usual imbibing of Xmas cheer does not distort his re-alignments.

- For those of you who own one of the 730 series, /1,/1A or /4, then it is as well to remind you that the 730 will be featured in Radio Bygones magazine early in the New Year, worthwhile taking out a sub to this in any case since there are many interesting articles in each issue.

- The cartoon on the other side of this page came in from Jim Murphy, who has both a 740 and an 840C in use. Looks more like the 840A that he used to own many moons ago, however did it end up on a desert isle ? And since the lighthouse in the background is so easily identified, as is 'Smeatons Stump' alongside, since when have there been desert isles in that area ? I must be missing something Jim, enough to make me want to go back there for another look ! Thanks for the lovely cartoon.

- There are still many of your letters containing ads for the next issue, which are arriving late. This month I got several ads for this issue only 4-5 days after *27 had been sent for copying. (read that again to get my meaning !!).

- Valves - again, an item in the last issue of Radio Bygones, re the 'un-reliability' of valves did make me smile rather wryly. As one who has spent many years doing service work for both domestic and pro valve type equipment, and who has in recent years worked in the test and repair department of a factory manufacturing PCBs - well I have to say that the valve wins hands down in so far as reliability is concerned. Quite apart from the vast numbers of dud ICs, trannies, and diodes that were dud as new, the number of them that went down in use was considerable. Fair enough they are subject to handling damage, static, heat etc; but the old 'bottles' were NOT. Rare to hear of a valve damaged by static, or heat, when used properly

Have a happy holiday, if you used it to do a repair or restoration job on YOUR Eddystone, then let us all hear about it.

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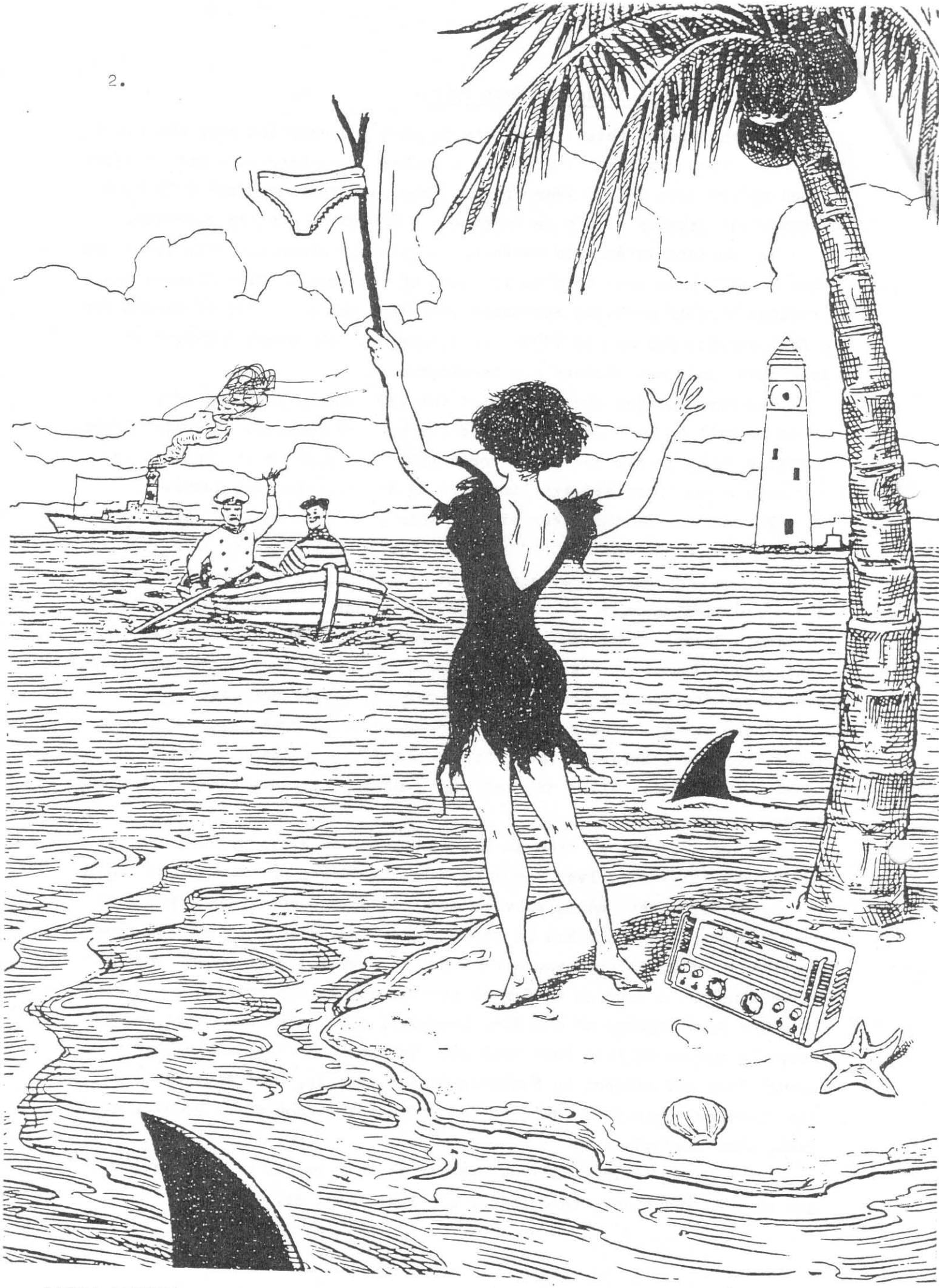

YOU NEVER KNOW WHEN YOU MIGHT NEED AN EDDYSTONE RADIO

- SFERICS -

- First off, a request from several new members to explain the origin of this 'word'. Well in my innocence I often think that it is self-explanatory, forgetting that many members are new to the hobby. It is derived from 'atmospherics' the term applied to naturally generated noise, lightning produces atmospheric noise on your radio, so does rain when it holds a static charge, this is transferred to your aerial and can be anything from a slight pattering noise to a machine-gun like din ! Back in my RAF days we used 'atmospherics' rather than QRN and typically this became shortened to 'sferics'. Any RAF camp was a hotbed of gossip and rumour, this eventually became known to us wireless erks as 'sferics' (audio frequency static ?). Okay now ?

- It may be that these components are 'coming of age' but it does seem as though the problem with silver-mica type condensers is becoming more common. Could just be that we are more aware of it these days, and that in the past we simply dismissed them as 'duff' with no analysis as to why they had failed. What happens (so I am reliably told by an EUG member in the antipodes) is that silver deposited on the opposite faces of the dielectric begins to travel, (migrate), it can simply unstick it self from the dielectric and get into the wax coating causing reduction of capacity, or worse in some ways, it can spread around the edge of the dielectric plate and cause a partial short circuit. Silver Migration is a real problem to us as these silver mica condensers are invariably found in the RF or frequency-determining circuits of our sets, i.e the local oscillator or the BFO stages. Whether heat is a contributory factor I do not know, I suspect it may be. Any old stock 'new' silver mica condensers that you use need to be checked for leakage and correct capacity before you fit them, if in doubt then try a good modern ceramic type, so far no problems have been found with these.

- VALVES, and the reliability thereof. A recent item in the Radio Bygones magazine has cast doubt on the reliability of valves. On this subject I have to disagree, very much so Geoff. Considering the 30s, 40s and 50s technology I have to say that in my experience, RAF, Civvy servicing, and hobby, valves cannot be faulted. I do make one proviso here, IF USED PROPERLY. Many failed in domestic use because of the manner in which they were (ab)used. I remember the many PL81s, ECL80s and the like that failed miserably in TV use, lack of adequate ventilation usually, wrongly adjusted mains supplies too. It was very frequently the case that the mains adjustment was on the 190/200 position when

with acknowledgement to Wireless World.

the set was running on 245 volts, why so ? well many believed that this gave a better picture, it did when the tube was low emission, or it did fill the screen when the ECL80 had wrong voltages on it or was low emission from an over run heater. In normal professional or amateur use valves have been VERY reliable.

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- Those 100 Kilohm Carbon Resistors. -

- Comments in recent mail and past Newsletters re these carbon rod type of resistor going high seem to have got Eric Cummins thinking. He decided to do some tests and set up a test rig on his bench. Using a pile of 'new' old stock resistors bought at the LLandudno Rally he first marked each one, measured it exactly before use, and then put them into use in a network run from a bench HT supply, with both current & voltage meters in the circuit. He arranged the loading in such a way that they were underrun and left them for several days, power ON. After a soak test period of some 140 hours he powered down and rechecked each resistor against the table he had first prepared. All were okay, hardly any noticeable changes in resistance.

- The next step was done on a saturday when he knew that he would be in the shack all day. He powered up again and set the HT feed so that all the resistors had an overload, such that they ran just hot to the touch. From first thing in the a.m to late evening the test rig was left on. Checks on the in circuit meters showed that within hours there had been a noticeable reduction in total current, thus an increase in resistance. By evening the resistors also seemed noticeably cooler,(lower current due to higher resistance, less heat dissipated.) No measurements were made that night but next day the 'cold' values of all resistors were again checked against the original values. Without exception all of them had gone high, figures of from 7% up to a high of 45% were found. This meant a 100K marked resistor was now reading 145K ! Well outside the 5% tolerance as stated. In practice if the lower end of one of these resistors had been connected to a leaky paper type condenser the inevitable result would have been a 'high' 100K resistor. So now we Know.

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- Un-named Eddystone Product ? -

- In the after WW II years many ads in SWM and PW carried offers of the S 440B VHF transmitter chassis, the associated S 441 receiver and sometimes the S 451B power unit. Look up the old Clydesdales ads of circa 1950-51 and you will see what I mean. These were actually Eddystone (Stratton) products. The first covering the 85-95 Mc/s range was often

modded by amateurs (and pirates) for use on 2 metres, the latter was the associated PSU for AC mains use. Many of these sets must still be around today, maybe relegated to the attic or the garage, do you have one ? did you not realise it was an Eddystone product ? You do now.

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- Play Time.-

- I was reminded recently that Eddystones are a hobby for most of us, only a few are dedicated chasers and collectors (Colin ?). My wife does frequently refer to my Eddystones as my 'toys'. Anyway Colin in his letter said that he was now building up a collection had now got up to 11 models. He had only come into contact with the Eddystone marque within the last 2 years but was now a keen collector. I suspect many of you will envy him because so often your letters mention lack of space as the reason why you have but one receiver. Another reason these days is the lack of cash to spend on a hobby. (Why not give up smoking ? you could soon afford another Eddystone, Stan ?).

- Another aspect of the hobby is that I know of four members who either have no Eddystone, or are happy with but the one. They prefer to collect what is called 'Ephemera' relating to all Eddystone products. This can be anything from old magazine adverts and articles, to manuals and handbooks of all models. Ian has a computer database which now holds all of his Eddystone/Stratton information, receiver specs; diagrams, service information, adverts and magazine articles, may need to ask him for info myself one day.

- How about Aerials as a part of the hobby ? Several members write in to say that they have just the one Eddystone but that they have a number of different types of aerial to 'play' with.

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- Signal Generators.-

- Some of your mail expresses concern over the lack of a suitable 'second hand' sig; genny for use when aligning you favourite Eddystone. It really is NOT necessary to acquire one of those super dooper all singing, all dancing, rubidium standard oscillator type of sig; genny. For most of our purposes the venerable old BC221 of WW II fame is good enough. One proviso is that it is first set against one of the Standard Frequency stations to be heard on Short Wave. (MSF, WWV etc;) Once this is done the BC221 can be used for any RF or IF re-alignment, okay it does not have any output attenuators but there are some shown in this Newsletter and they are easy enough to calculate for the value that you may need. The BC221 had a spec; that was far in advance of any others at

that time. It really was state of the art, figures quoted better than 5 cycles drift, per hour, at 3 Mc/s, when warmed up. The frequency trim feature enables front panel trimming of the oscillator against any standard, errors of less than 0.004 % are quoted and when you refer this to Eddystone manuals where the quoted scale accuracy is often 0.5 % then you can see that it can cope. Prices ? well I have seen them recently in ads for prices of from £40 to £60, with a built-in psu. My own came from British Aerospace and was only sold off in the '80s by them. Good enough for them and good enough for me.

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- SUBSCRIPTIONS.-

- I know, AGAIN, but Chris has kindly continued sending you a newsletter even when many of you have not paid your current subs; EUG really cannot afford this for long, the end result will be that all members may have to pay more next year. So PLEASE if you are one of these members, do send in your current subs; NOW.

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- Pre-WW II Kit sets.-

- Seems that members are always discovering something or other, in a recent letter David Lewis says that a recent clear out of his father in laws 'junk' has turned up what appears to be a partially built model from the 30s era. Some sleuthing here has enabled it to be identified as the 'Battery Kilodyne Four' of circa 1932-3. All the parts to complete the set appear to be there in original packing. The completion of this set - at last - will be a winter project for David, power supplies look like being a problem but he envisages using series connected PP9 batteries for HT to test it out. A mains psu will be a later project.

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- 730/4 -

- This receiver features in the latest SW magazine. A review of some of the older Communications receivers from the 50/60s era which included both the 730/4 and the EC10. Both got good write-ups, frankly I think it wrong to compare either with such as the Mohican or S-38. Both of the Eddystone sets mentioned were built to professional standards, the 730 for MoD use and so had a military spec; not like the 'kit' sets.

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- Calibrator in an Eddystone 680X -

- Having picked up the small calibrator unit as fitted to an 888A, cost me £2.00 at a rally, I had of course to find a use for it.

- My station receiver is a 680X and I had no desire to change it for any other, I was satisfied with its performance but of course ir does not have a calibration check facility. Some thought was given to fitting the unit into my 680X, doing as little to change the set as was possible.

- Locating the crystal oscillator unit on the top of the cover directly over the tuning gang was simple enough, it was even found possible to fit a trimming variable condenser of some 2.5 to 5 pF mounted alongside the calibrator unit. This was parallelled with the oscillator section of the 4 gang variable condenser, necessitating a retrim of the oscillator trimmers on all bands.

- Power for the calibrator came next. And some means of switching it into circuit. The standby switch is more or less redundant when the 680X is used for SWL purposes and so this was utilised. In the normal state the switch applies the main HT to the set, in the standby mode it cuts the HT and makes a pair of contacts at the rear to drive a relay external to the receiver, for HT to a transmitter. I used the switch instead to apply HT to the calibrator unit, whilst wiring the HT to be on for the receiver valves at all times. LT came from the nearest point under the chassis, in this case across the base of V4. Feeding the 'pips' into the circuit of the 680X was done via a 1.5 mmF ceramic condenser which went to the rotor contact on the wafer of the bandswitch which switches the signal input grid of V/, a 6BE6, via a convenient hole in the chassis.

- The whole job occupied two weekend afternoons, the tedious part being the re-trimming of the oscillator sections, whilst the new 'trimmer' was set at midpoint. Results are all I could ask for, my 680X was already a good reliable set, its performance is now enhanced, all for the sum of £2.00.

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- Don't do it, Please don't do it.-

- The owner of what he terms an almost mint 840C has written in asking me re mods to his set. He is contemplating the fitting of a switched crystal calibrator plus ceramic IF filters, and FET front end and an IC type product detector. Since this work will need at least 3 holes on the front panel I do hope that he changes his mind ! Why not leave the 840C as it is and go looking for a 940 or maybe an 830 ? Any mods that will cause irreversible damage to the front panel and escutcheon are anathema to me.

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- I know THIS one !!! -

- Coincidence but I was talking about just this problem last week. It seems that Alan has been thinking of stripping down his 670C for a big service job, he suspects that it is getting senile !!! What he has discovered is that he can now pick up the various BBC stations, R1, R2, R3, & R4 all on the one frequency but at varying times. The scale on the 670C reads about 10.68 Mc/s and the signals are distorted but are definitely recognisable.

- Well several years back I was afflicted with this myself, it came on overnight seemingly, when I checked on various models it was there on all of them, even on a 'modern' Trio R 2000. The same thing happened whether I used my long-wire or whether I used the Dressler active aerial.

- The clue was in the frequency, this was so close to that used by most modern FM receivers that I immediately checked whether it was our domestic Hi Fi. No result from that so I looked further afield. By checking on time of reception and the coming and going of our neighbours I was able to pinpoint it as being present only when the teenager was at home. A good relationship with the neighbours did a lot to help. I approached them and found that a new 'Ghetto-blaster ' had been bought recently. Further checks proved that radiation from this was the signal that I had been picking up. The cure was nothing more than a piece of tin cut to shape and soldered over the part of the circuit containing the mixer stage, earthing the tin to chassis level of the PCB. - J.Baines.

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- Post Script to above.-

- This re-radiation problem from another set is not NEW ! The old HRO sets had sufficient radiation from the local oscillator stage for them to be used on 'local' QSOs by many RAF types, local being as far as the nearby Married Quarters in some cases.

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- Supplement to Issue 28.-

- The Fault lists that you will be getting with this issue should provide interesting reading for those of you who do their own servicing work, for others they will provide a useful reference for that fateful day when your Eddystone does decide to go on the blink. Many members will recognise fault symptoms/cures that they have written to EUG about. I wish to thank all of you who have helped with this compilation of faults and cures. It is something that will no doubt come to be useful in the years ahead, as so many Eddystones age gracefully. Don't let this stop you from sending in your own future cures, no Eddystones do not respond to antibiotics, but they do like TLC.

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- Some items from the Mail.-

- Phil Johnstone relates how he has donated one of his two much loved Eddystones to a disabled listener in Tywyn. Whilst there on holiday Phil met up with Gwilym Davies who has long wanted to pursue the SWL hobby but has been unable to find the funds to buy a receiver. Phil has donated his 840A and has put up a good aerial for Gwilym, with the result that the 840A is now pulling in good signals for its new owner. Good for you Phil.

- Arthur mentions that he is now the new owner of a 680 (not the 680X) and that this is now installed in the box-room, a random wire around the trees in the garden completes the set-up. A fair amount of cleaning both inside and out was all that the 680 needed to get it going.

- A new addition for Stephen Potter was a virtually mint 870A that he obtained from the local WVS branch. It had been there since new and used only occasionally was always packed away when not needed. He paid to have the valves tested but as all are still 'in the green' nothing was needed before he could put the 870A to daily (and nightly) use.

- I have to admit that I am disappointed that so many members did not bother to renew this year, when it was announced that Eddystone would be taking over the admin; side of EUG. Maybe if they could now see the advantages to be gained from the co-operation we are getting from Chris and his 'volunteers' then they would renew. I put 'volunteers' in parenthesis since I have this vision of Chris pointing a finger and saying Volunteers, 'YOU & YOU' or else.

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- GB2SM, The Science Museum.-

- Many members will have already seen in the SWM or PW of the planned closure of this station, bureaucracy gone mad I call it. Latest news is that some kind of agreement has been reached whereby a permanent display of Amateur Radio will be kept at the Science Museum. I would hope that one or more of the Eddystone receivers that were donated to this station can be on display. I can well remember one being in use when I visited many years back.

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- What to do over the Holiday.-

- Decline and decay are insidious, the sensitivity and even the selectivity of our receivers can decline so slowly over the years that whilst using them each day we do not notice any changes. The dark winter evenings are an ideal time to do some checks on YOUR receiver(s). It is always useful to have spare valves to hand, if not a full set then at least one of each type as used in that model. Having tuned to a known good signal, without changing the position of the controls, try substituting your new valve for that in situ. Any improvements will be due to an increase in emission, if this happens with one or more valves then you will have improved overall sensitivity. Do keep the old valve or valves though as they constitute your 'emergency' stock.

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- It Is Official Now. -

- Despite denials, or just ignorance, most of the Electricity companies have now put out statements to the effect that as of next year (1995) the mains voltage will be a nominal 230 volts in lieu of the previous 240.

- One member in Scotland actually can claim responsibility for getting the fact made public. He had been badgering the local supplier for several weeks and finally got a grudging admission last month, he was told ' maybe we ought to put out a public notice ' - the notice duly appeared in the local press. For us it should not make much difference, our sets can go to, or stay on the 230 volt tapping, for those with night storage heaters the effect will be a big drop in heating efficiency.

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- Members Free Adverts. -

- Sell, a very good 730/1A receiver with speaker and full technical information, including servicing data and circuit. £80 is a fair price to pay for my faithful 730/1A. Please call Iain Stevens on 0794-523474.

- Wanted, still needed by EUG some info on the model 720, Yachtsman receiver, the handbook and circuit would make a couple of members happy so please if you can let me have a copy, will pay copying and postage costs by return post. Ted.

- Wanted, me again, EUG needs some info on the EY11 model, possibly a later model for the Yachtsman, first generation transistor type, again if you can let me have handbook and circuit for a member in Canada. Ted.

- Wanted, any 830 model in good condition, unmodified, would prefer a version with the LF band coverage, i.e. a /4 or a /12. Please phone Peter (G4PLW) on 0438-871350 or 871398.

- SALE, Eddystone EC10 Mark II with mains PSU - £95; EP20 Panoramic Adaptor - £150; Both in mint condition. David Craig, phone 0580-830558 (evenings only please).

- SALE, Early Eddystone VHF Tx (type 450 ?) on 2 metre band. With manual and in nice condition. Would swop for interesting Eddystone or similar Rx, WHY. Call Jim on 0692-630285 (Norfolk).

- SALE, Model 770S, the SHF model which covers 500 to 1000 Mc/s, uses cavity tuned RF and LO stages. This set is a 'twin to the 880 model & weighs in at about a hundredweight ! Invery good condition so please contact Jim Murphy at 63 Wrose Rd, Bradford, West Yorks; BD2 1LN.

- Wanted, info on any Eddystone models that were badged and sold by Redifusion Co; Siemens Ltd; and Debeg. for Ray Wilson c/o Ted Moore.

- EC10 ReBuild !!! -

- Steve writes in that the saga of his EC10 appears to be over, the alien mods have all been removed, several trannies in the RF and IF stages have been replaced, and an open circuit second IF transformer winding has been repaired.

- The RF/IF trannies were definitely noisy and low gain, but the main fault with these stages was a duff silver mica condenser in the local oscillator circuit. The primary of IFT2 was open circuit too when the set arrived. Removing it from the PCB was the hardest part of the task, when opened up it was found that a corroded wire end could be bridged across to reach the tag so eliminating the need for a new transfo.

- There appeared to be no faults at all on the AF stages, although it was noticed that the CW filter part of the 5 way switch bank would not hold on by itself. This was traced to a broken off 'tag' on the switch which 'locked' it on. A piece of tinplate was soldered on to the switch frame and the thing worked fine.

- When re-aligning the IFs the normal procedure was used, i.e. to begin with the last IFT and work to the first. They did not appear to be very much off-tune and little was needed to bring them up to peak, not even on the second IFT that had been repaired ! The audio CW filter was 'off' however, it appeared to be tuned to around 2.5 Kc/s. A new polyester type condenser was fitted and it was now possible to tune this to an approximate 1 Kc/s, the actual tone is not critical and may be varied to suit individual tastes.

- One last problem was that when re-aligning range 1 it appeared that the mixer coil core had to be almost completely out of its former to achieve resonance and correct tracking was just not possible. The core was removed and compared with others on this set. It was certainly the same type of core, but then an inspection revealed that there was a small piece of broken ferrite stuck inside the former. Removing this enabled the mixer coil to trim and track correctly.

- The actual EC10 was now working well, the mains psu was not. The metal rectifier had blown at some earlier date, a modern silicon bridge was fitted, whilst leaving the original in situ, disconnected. The wiring looked a bit suspect and so the whole psu was rewired, not more than an hour was needed for this job.

- The EC10 is now at least as good as new, it works very well with a twenty metre dipole connected via co-ax, no ATU as yet although one is planned for the future. Total costs of parts was £6.00 bringing the cost of parts plus EC10 to £38.00.

- What to Listen to ??? -

- Seems a daft question this, what do you want to hear ? Yet this is a question that does figure so often in the mail.

- It all depends on what model you have, what is the coverage of that model ? What do like to listen to, music, utilities, hams, maybe to beacons ? Also how good is your aerial, is it suitable for what you are trying to hear ?

- If you have one of the VHF or UHF sets, valve or semiconductor, then you will need a proper aerial, either wideband (active or passive), or dedicated to the band that you want to receive. It is no good trying to hear 2 metre signals on a 770R with a longwire, well not much !

- If your choice is medium/long wave DX or Beacon chasing then you need a good outdoor aerial, a long-wire. Alternatively a frame aerial with a 50 to 100 cms dimension would do very well, easy to make too.

- If your choice is broadcast stations, then you would do well to get the program schedules of the various foreign broadcasters, or subscribe to Short Wave Mag; - a misnomer since this mag covers Long, Medium, Short and VHF/UHF.

- The aerial is NOT the only thing you need for good reliabel reception though. Nowadays many people ignore that the mains earth is practically useless for radio reception use, I doubt that it is as effective as the old system even for protective purposes (MY opinion that). If you are operating close to a window, if you can run a wire out and down to a good earthing rod in the soil, then by all means do this. You will, I guarantee, be surprised. Signals that were not even audible without will now be good enough to listen to with comfort, it is also a fact that using an outside earth in lieu of the mains earth will considerably reduce the mains borne interference. BUT, you need to make a good joint, both electrical and mechanical, to the earth rod. Earth clips can be bought, try a hardware shop, electrical retailer or DIY store.

- Besides broadcast stations there are many other signals to hear, a number of aeronautical meteo stations which operate on SSB, again see the SWM, hams too on SSB but that can be a bit boring. A big favourite with many EUG members is NDB chasing. Non Directional Beacons are to be found in between the Long and Medium wave bands, say from 280 Kc/s to about 400 Kc/s. There are two distinct types, the marine beacons around the coast are now CW and require a BFO, they usually have 2 letter identifications and have a (supposed) range of 25-50 miles, many can be received at 10 times that distance. The other type is aeronautical, these are located either at airports or at 'crossroads' on the air flight routes. These have either 2 or 3 letter IDs, again SWM has lists of the

frequencies and the IDs. They send out the callsign in slow morse, so slow that just about anybody can read it, this is repeated several times so you can have a couple of goes at IDing it. With a frame aerial you can DF the beacons quite easily, there may up to 5 on one channel but they stagger their ID transmissions to facilitate use. The frame aerial will enable you to null out the unwanted ones and peak the wanted one. Ideally for this aspect of the hobby you will need an 850, the LF model but do not be deterred, many Eddystones cover this so-called 'beacon' range at the upper end of the Long Wave band.

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- Mechanical Drift.-

- Several references to drift that is caused by mechanical sources in the mail of late. An explanation is needed I guess.

-Firstly it usually crops up on sets that have had work done on them in the past, possibly on the drive system. In one case it was where bronze wire (Philips) had been fitted, in another case, and in one of my sets, it was where the original steel wire had been renewed. No fault in the materials used. The fault turned out to be the manner in which the wire had been fitted. Where the wire runs over the pulleys at the top of the scale, and from one end to the other of the scale, it MUST run straight even when you have attached the pointer. What seems to happen is that when the pointer is attached, superglue or solder, then the wire is pulled out of straight, making it into a very wide open 'V' with the pointer at the tip of the 'V'. This is fine when the pointer is tuned to the centre of the scale with even tension from each end. When you tune to one end of the scale however the tension becomes uneven and once you let go of the knob this difference in tension will act on the drive system, be it vibration or just heat the drive system will pull the tuning off. I had this on an 830 and it took me ages to locate. It will only happen on the slide rule type of receiver, 670, 840, 940 etc; but you can find yourself delving into the electronics of the set when your problem is literally under your nose, as you look at the top of the set. FACT, some of you may find it hard to believe, but if the pointer is attached to the drive wire in such a way as to pull the wire out of straight, that could be your cure for drift.

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- Don't go Mad.-

- A letter from Bob who comments that he sees no sense in just ripping out ALL the resistors and condensers from an old set just because they MIGHT be faulty. In a 40s/50s set there might be duff ones, okay then swop them by all means. But it doesn't help to rip out all of the paper condensers just because you find one is leaky. Again, many of the sets from this era had resistors with a tolerance of 10 or even 20% , a small change up from the marked value will have minimal effect on the circuit, valves are very much more tolerant of values in associated passive components than are those pesky 3 legged fuses that they call transistors.

- Wolves in Sheepskins ? -

- One member who wants to be Anon mentions that a careful check of the Readers Ads in the hobby mags will show that there are people masquerading as private buyers/sellers who are in fact Trading. This way they can evade their responsibility as a Trader, and YOU the buyer lose out on your rights as a buyer. Always wise to ask 'are you a trader' when buying.

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- The 820 AM/FM Tuner.-

- Ian mentions that he is still using his 820 to drive a Quad amplifier for domestic music. The audio is piped around the house to speakers in various rooms and to a speaker in the greenhouse. A second set of valves was fitted some years back but apart that the 820 has had no servicing at all. The Quad amplifier has had new E'lytics and new output bottles in this period. The family are happy with the arrangement and none of them feel the need for stereo or for all those fancy flashing LEDs. And NO the 820 is not for sale !

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- Knobs Please ! -

- Another of those frequent requests for replacement knobs for some members Eddystone. EUG does not have any, BUT if you contact Centre Electronics on 021-706-0261 then you may be lucky ! Many members have commented on the helpful service that they have had, be it for valves or knobs. In some cases they can supply that rare IF transfo that you need, if in doubt ask.

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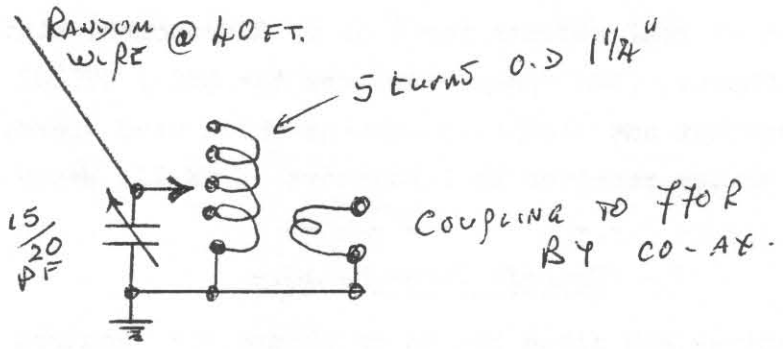
- Long Wires on 50 Mc/s.-

- frequently EUG gets letters asking how to use a 770R with the only aerial available, usually an outside random wire. This IS possible despite what many think, and say. A 40 foot longwire aerial is about equal to four half waves on the 50 Mc/s band. A suitable simple tuner unit can match this into your 770R and give acceptable results. In some cases the unit matches up to the 85 Mc/s utility band and down to the 10 metre band. The circuit is very simple and minimal componets are used. For the 50 Mc/s band a coil of 14 g tinned copper wire, 5 turns with an O.D of $1\frac{1}{4}$ inches and a parallelled 15-20 pF tuning condenser are needed, the coupling to your 770R is via a single turn loop and co-ax socket. See below.



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- 640 model using an OZ 4 Rectifier.-

- An S 640 accepted for repair from a friend had simply gone dead, yet the valves could be seen to be 'lit-up' when the lid was lifted. Usual rectifier in this model is a 6X5GT but there was a metal can valve fitted here. When removed this was found to be an OZ 4. A decidely one-off valve type this, it is an 'ionic-heated kathode' type, no heater at all. It works by utilising the fact that in a valve filled with a suitable gas the application of the correct A.C value to the anodes will provoke the kathode into emitting ions as it warms up. Trouble is this valve is a bit finicky as regards the applied A.C level. It is supposed to be 300 volts peak at switch on, more than the transfo on the 640 gives out. I can imagine that this voltage requirement increases with age - as does the strike voltage of a neon. The OZ 4 must have been tolerating the lower applied volts from the 640 transfo for some years and had now decided enough was enough. It was a simple job to unplug the miscreant valve, refit a junk box

6X5GT and try again. Instant repair I guess you could call it, I kept the OZ 4 to 'play' with and returned the 640 to a pleased owner, no charge. The OZ 4 does still work okay with the required 300 volts applied, as tested in a test set-up on the bench.

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- VALVES. -

- I guess the moral is 'never say no to a gift' - well the gift was a box of miscellaneous valves, well over a hundred of them, some boxed some not. This was in return for helping in the sale of equipment belonging to a 'silent key' friend. Some new and boxed EF50, EF52, EF54 types. A pair of obviously new and boxed 807s, some of the AC/DC B7G series still boxed and the rest a miscellany of UX, octal, B8A, and Mazda octals. Only a few were rejected after a check on the valve tester and I have now got a full set of replacements for 3 of my Eddystones, plus part sets for 5 others. Two funny ones were the 8D2 / CV1102 types, I only ever met one item of equipment which used these, it was the R 1125 beacon receiver ex Lancasters of WW II. Happy memories.

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- Transfo Turns Ratio.-

- Sometimes get asked how to calculate the required turns ratio for a replacement A.F output transfo. Simple enough to do and you need know only two parameters. The Optimum load of the anode circuit of the output valve as it is operated in the particular model plus the Speech coil impedance of the speaker you are using. Simple enough to find out the former from data sheets for the valve, the latter is usually marked on the speaker somewhere. The requisite formula is, -

$$\frac{\text{OPTIMUM LOAD}}{\text{SPEECH COIL IMPEDANCE}} = (\text{TRANSFORMER RATIO})^2$$

Lets say you have a 6V6GT with an O.L of 5 Kohms, a speaker with a 2.5 ohm speech coil. The formula will thus give you

$$\frac{5000}{2.5} = \sqrt{2000}\ .$$ Square root of this is 44.72

A 40 to 1 transfo will do nicely.

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- Esoteric Propagation Phenomena.-

- Wow, what a mouthful, but it is all about those 'happenings' on HF and VHF when stations not normally audible, and well beyond normal range suddenly come up out of the noise and can be copied for periods of from minutes to hours.

- A recent example of Sporadic E reception brought in many European FM stations on the HiFi tuners of many perplexed owners in the UK. The situation persisted for some hours and listeners to their favourite BBC station in the range 88 to 95 Mc/s found that due to the 'capture effect' exhibited by their AFC fitted tuners the Beeb was suddenly replaced by a French, Italian or Spanish station.

The thing is that when this happens you can expect conditions to be far above average on the 30 Mc/s and the 50 Mc/s band, with the DX rolling in. A good tip is that when you hear the announcer apologise for 'interference from continental signals' - then you get going on ten metres looking for that elusive Dx. The same does apply to 6 metres, 4 metres and 2 metres.

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- Do you have a 680X.-

- Steve Allard says that after using his 680X for many years quite happy with the performance, he has made it even easier to use on SSB by reducing the capacity of the BFO tuning condenser by removing one fixed plate, a mod often performed on the 640. No reason it cannot work on any other model, I have done it on my 840A. The range which used to be plus or minus 3 Kc/s is now about plus/minus 2 Kc/s and SSB is easier to tune to zero beat. One thing to remember is that it may be necessary to reset the BFO coilslug to enable a carrier to be zero beat with the knob at 12 'o' clock.

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- A Dead 740 ? -

- Bought recently by a non-tech SWL this receiver refused to work when powered up, nothing at all. The cry for help came on a Saturday and so he was told to bring it up. No fault existed, just the fact that an octal 'shorting' plug was missing from the rear panel. It was meant to permit operation from a companion 6

740 cont;
volts vibrator unit and brings out the HT & LT supplies to the rear socket. If the shorting plug is not fitted then the LT supply is cut, result no filament/heater voltage. Since I did not have a spare octal plug I fitted a soldered link internally on the chassis mounted octal socket. Result, one happy - now active - SWL, age 15 and into 'hollow state' technology.

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- The 770U IF strip. -

- The 770U is a dual conversion model with a first IF at 50 Mc/s and a second IF at 5.2 Mc/s. The good thing about this is that there are input and output coax sockets fitted to enable one to use the IF amplifier strip alone, fed into an EP17R type Panadaptor. So what ? Well one EUG member has the 770U and EP17R permanently set up and connected to his 50 Mc/s yagi, a 3 element wire beam, home constructed. The beam aims due north and he finds that at times of auroral activity he is receiving not just very variable noise levels, both visual and audible outputs available, but also that he has on several occasions heard faint speech of a 'warbly' nature. He asks if any EUG member can help him in identifying the source for this ?

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- An Awkward 840C.-

- This old faithful had after twenty odd years developed the awkward habit of suddenly going off frequency, then when retuned it would later return to its original setting. Not so difficult I thought as it was only on Range 2 that this happened. Well it was not easy either, after some frustrating hours it turned out to be C41, the 20 pF padder condenser across the LO coil L14. This was removed and tested for capacity on a bridge, any slight rise in temperature reduced the capacity by several pF. A new 20 pF silver mica type was a complete cure.

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APOLOGY,- The promised item on causes of 'mechanical drift' has had to be held over till next issue, sorry.

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- LightHouse Radio ? -

- Heard on 10.451 Mc/s on several occasions since the beginning of 1993, this is well modulated AM signal which does not appear to be located in the UK if signal characteristics are taken into account. It has been audible from 20.00 GMT at about signal strength 7, with some fading up to about 22.00 GMT. Program content was mostly 40s style with occasional 60s music, announcements made on the half hour simply said 'Lighthouse Radio, we hope you enjoy our easy listening format, frequency is 10.451 and power 250 watts.'

- Have had a check by another listener and find that it is audible in the south of England at similar strength to the north. Despite checks in all available frequency lists this does not appear anywhere. Can any EUG member throw any light (pun intended), on this station ?

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- Further to above signal, seems that is only on the air Saturday evenings, well at least loggings by three of us so far have all been on Saturdays, nil heard on the frequency other days.

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- Overseas Members Subs.-

- Dave wrote in to say that he began checking the postage stamps on his newsletter envelope only recently when his son began collecting foreign, (to him in SouthAfrica), stamps. That was when he realised just what a years postage for the six issues came to ! Okay Dave but Kathy and myself did already know, thanks for the extra to cover postage.

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- Alignment without a Sig; Gene; -

- This is not something that I would attempt however Alan states that with no cash available for such a luxury he decided to attempt the job on his newly bought 670, which a quick visual showed had been twiddled some what. The IF transfos were apparently untouched and so he planned on using known audible stations at low and high ends of each band. First step was to determine which to use and these were marked out on a sheet of paper for each band. Band 4 the medium wave was easy, Radio Eireann at 567 Kc/s and his local station R. Bedford, on 1161 Kc/s were chosen, with R5 on 909 Kc/s as a more or less mid-point check. Band 3 was next with a BBC local station on 1458 and a known MSF signal on 2.5 Mc/s. The HF

cont;-

ranges were done similarly, setting the local oscillator core at the LF end and the trimmers at the HF end on each range. Mixer and RF stages were done in the same way, only here they were set for maximum signal to noise. Since the core/trimmer adjustments do interact it was necessary to go back and forth several times but the 670 is now sufficiently well calibrated for my use as a SWL, since most of the signal generators in the hands of 'amateurs' are rarely calibrated to better than 0.5 % anyway. This 0.5% is a full 150 Kc/s at 30 Mc/s and few seem to realise that.

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- L & C values in Formula for Resonance.-

- Whilst this is easy to locate if you have a stock of reference books as do many members, it is not a rare thing for somebody to write in asking for some enlightenment as the various units are so often stated in different multiples or sub-divisions. Here it is for those of you with a minimum of maths. Taking the frequency 'f' as being in kilocycles, (NO I will not, Hertz rent cars out !) The capacity in picofarads, or puffs if you will. The inductance in microhenries, then the basic formula of;-

$$f = \frac{10^6}{2\pi\sqrt{LC}}$$

- This can be transposed to;-

$$LC = \frac{2.533 \times 10^{10}}{f^2}$$

still the same units as above. But if we change kilocycles to megacycles then we can once more reduce the formula to;-

$$LC = \frac{25330}{f^2} \qquad \text{or you can have;-} \qquad f = \sqrt{\frac{25330}{LC}}$$

- Hope that answers your queries Peter, and Don.

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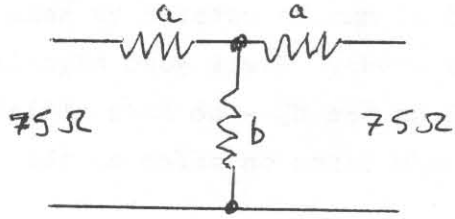
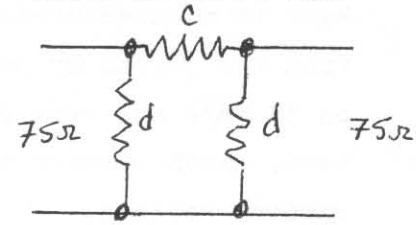
- Attenuator Pads.-

- Several letters have been received querying the values of resistor to be used in these, mostly from users of the now common broadband active aerials. It is hardly surprising that in general the users of these mention overloading of the input stages of their receivers. Don uses an EC10 fed with a Datong AA mounted on the chimney. Has problems with spurious signals all over the HF ranges and has read that the solution is to fit a pad between the AA and the receiver input to drop some of the excessive gain which causes the stronger signals to overload his EC10. Good idea, especially if you consider that some of these AA units can give you as much as 15 to 20 db gain over a simple dipole. Problem comes in calculating the values needed to make up the pads. Lets assume we are in fact considering the EC10 with its 75 ohm input on HF bands. There are four types of single stage pads, as shown below, the figures given hold good for all. For differing impedances the formula required to convert the given figures is also given. -

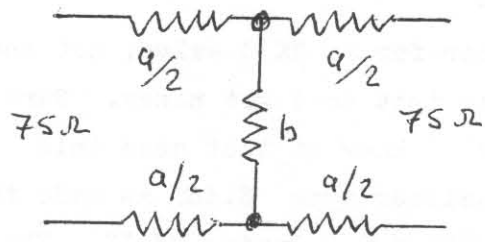
Basic 'T' Pad.



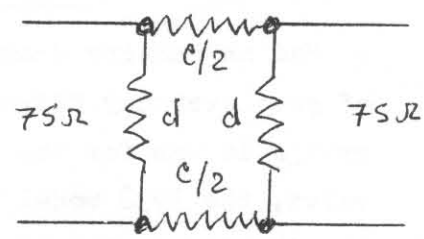
Basic TT OR Pi Pad.



Balanced T Pad.



Balanced TT Pad.



Loss in dbs.	Ra ohms	Rb ohms	Rc ohms	Rd ohms
3	12.81	212.9	26.39	439.0
6	24.93	100.4	56.01	225.8
9	35.7	60.9	92.36	157.5
12	44.9	40.21	139.9	125.4
15	52.35	25.01	204.1	107.4

cont;-

Pads, cont;-

- Whilst the above values are exact from formulae there is no need for such accuracy in the way that we will be using them, for our needs the nearest close standard value to that in the table will suffice. For pads of differing characteristic impedances the above table can still be utilised, the values of a, b, c, d, may be multiplied by the factor R divided by 75. Hows that ? plain as 'PI' on your face ? Any greater values than the table gives can be made up by adding pads in series, i.e. if you want 30 db drop then two 15 db pads in series will do it.

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- Use your 770R on 50 Mc/s ? -

- Using your 770R on 50 Mc/s can be made easier with a 2 or3 element beam, expensive ? Need not be though. Surprising how many dealers have still got the odd Band I TV aerials still in their stock. The Channel 2 model for Holme Moss, North Hessary Tor, etc; is centred on 50 Mc/s, or rather was so. I was able to get a 3 element channel 2 aerial new in its box from a local dealer for a fiver. He threw in the lashings for that sum too. Whilst originally it was used mounted vertically I have it mounted horizontally, and it can be rotated by hand from the ground by pulling on two ropes. Gives good signals on 50 Mc/s and even receives well on the 85 - 88 Mc/s utility band. Much cheaper than the 50 Mc/s beams on offer at the various rallies.

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- Wanted an RK34.-

- Had an enquiry from one member for an RK34 valve, not one of your everyday Eddystone types this so I got nosey. Sure enough it was for the only model I knew of that used this valve, the 1938 model VHF transmitter type S.440 as made for the 'Met' and also supplied to the M.O.D during WW II. The Tx uses 3 off RK34/CV18 valves as the frequency multiplier stages. Turns out that Gerald had used this modified for 2 metres way back and has just dug it out of his 'junk box' to find a duff RK34. Luckily one was soon found. Hope it is working now Gerald.

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-Featured Model, All World Two.-

- This is a compact 2 valve set designed expressly for short wave enthusiasts. It was supplied as a kit, although some dealers built them up and supplied them complete, ready to go. The first stage is an HF pentode used as a detector with reaction inductively coupled but varied by condenser. This stage is RC coupled to the AF stage which could have been either an SG, a pentode or a triode, since the set is meant for use with headphones only. The instruction book gives a wide choice of valves for both stages, these were chosen for economy of operation and the total HT can easily be kept within 5 milliamps, this from a standard 120 volt battery. The preset in the reaction circuit is used only to vary the reaction level for preliminary setting up of the AW2, for this adjustment the reaction control pot should be set to midpoint in its travel. During actual receiving and tuning the pot is used to vary the SG voltage, thus the level of reaction. The smoothness of the reaction depends a lot on this basic setting up procedure and so the position of the trimmer condenser should be carefully set to allow of gentle control from the front panel pot. The tuning consists of main and bandspread condensers, the latter being a 20 pF item which is set centrally on the panel and is fitted with a neatly engraved scale. The main, or tank condenser is mounted to the left and below chassis. The bandspread has a slow motion drive with a ratio of 8.5 to 1, adequate with mere 20 pFs. Two standard Strattons coils with 6 pin bases are used and these give a total coverage of from 15.75 metres to 54 metres (19 - 5.5 Mc/s). Both selectivity and sensitivity are extremely good, and tuning is comfortably easy down to the shortest wavelength. European and U.S signals can be received quite well and separation is facile when the bandspread control is used. The price of the kit was £3-7s-6d and the two valves cost £1-0s-6d extra, this in June 1936. Front panel controls consisted of maintuning, bandspread, battery switch, reaction pot, aerial coupling condenser, the reaction preset is chassis mounted. Using a solid aluminum chassis and bakelite front panel there was no apparent 'hand effect' noticeable. Rear of chassis connectors were for phones, aerial and earth, with a cable to connect the HT and LT batteries.

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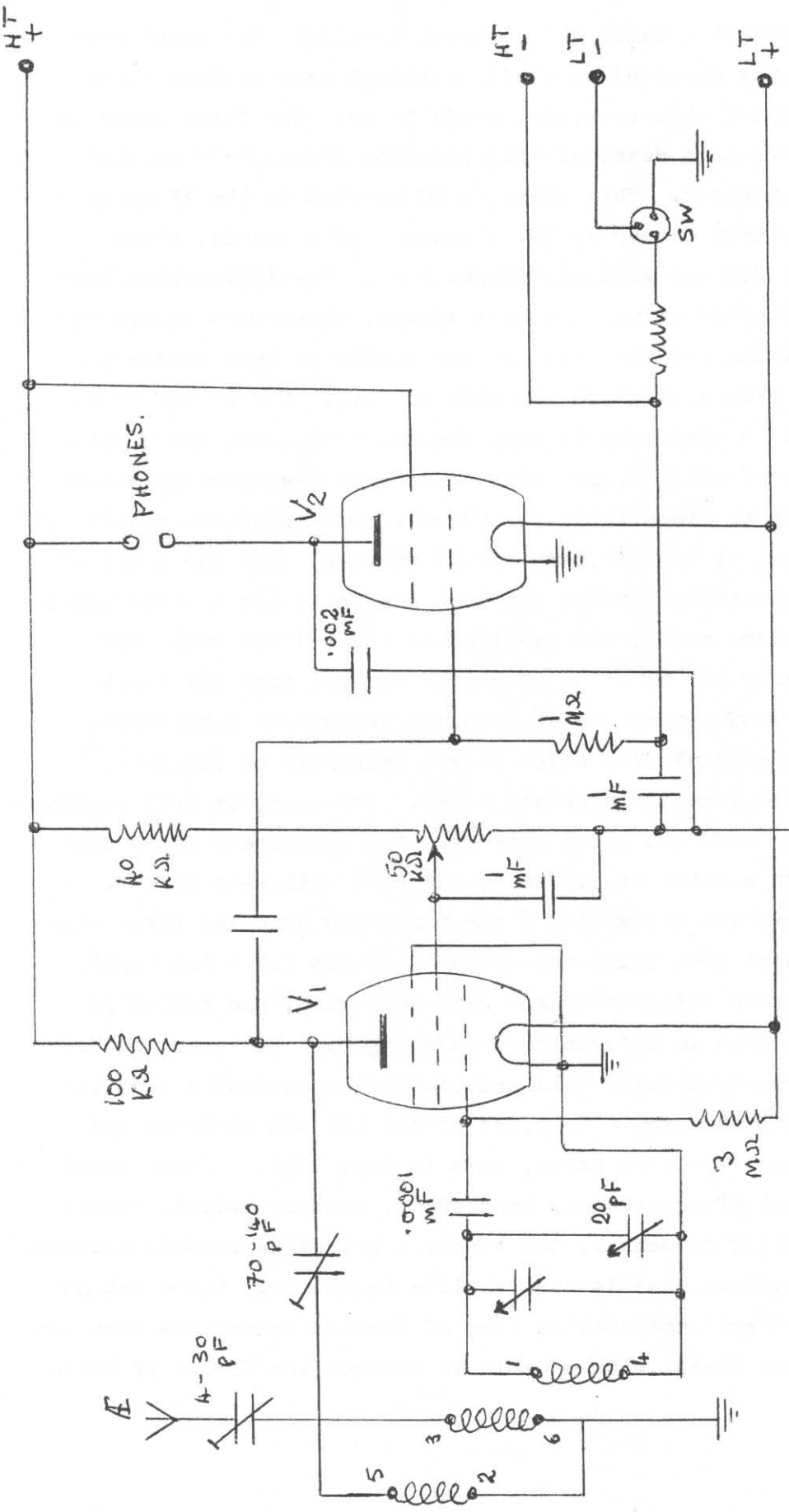

ALL WORLD 2 RECEIVER. BP290. JUNE 1936.

- Deaf as a Doorpost - A 659.-

- My S.659 sees only occasional use, in sporadic bursts of hollow state enthusiasm. It had been almost a year since last powered up and this time for once it failed me, nothing violent or anti social just simply very low gain, even with my outside 66 foot wire I got but weak reception of the local radio station on medium wave, as it is a mere mile from my QTH the signal is normally strong.

- A decision was made to spend the weekend on repair of the 659 & I got it out of its case onto the repair bench. Nothing seemed outof place, no burnt resistors, all filaments lit up, except that it is not possible to see that of the EB34. I remedied this by using sandpaper to remove a one cm circle of the grey coating at the top of the valve, that too lit up. A tell-tale on this model is the magic eye tuning indicator, if it gives an indication which varies as you tune through the bands then RF & IF, up to the detector are manifestly okay as it is driven from the AVC line itself taken from V4 diode. The fault would then lie after this and in the AF stages. No such luck here there was no change in indication as I tuned through the strong local station. Some voltage checks from the table supplied in the manual soon led to the anode circuit of V3 the IF amplifier. This EF39 valve has a rather more complicated anode circuit than is usual, since the AVC drive signal is capacity fed from the anode whilst the actual signal goes via the 2nd IFT to the detector diode of V4. Two resistors feature in the above mentioned anode circuit, R20 is a 4.7 kohm and R21 is a 22 ohm, both are ½ watt carbon types and both were very high in resistance, almost 50 Kohm for the first and some 130 ohm for the second one. Unheard of in my experience and yet two replacements did bring the set back to being much more like its former condition. Not completely though and a further five resistors had to be swopped - all high - before I was satisfied with the performance of the 659. The EF39 had tested okay but it was swopped with V1 the RF amplifier on the theory that if it was at fault in some way then similar symptoms would eventually show up in that stage. Some 6 months later the 659 has been powered up several times and appears to be okay, on one occasion it was accidently left on for a whole afternoon with no ill-effects. What caused the resistors to go high ? I wish I knew. Alan Durie.

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- The Seafarers Receiver.-

- This was the name given to the original 670 model. It was called a 'broadcast superhet' and was for use by seafaring listeners who wanted something a little more sophisticated than the usual run of the mill sets like HMV, Pye, Murphy etc;

- It was an AC/DC model and could thus be used on ships cabin supplies of 110 volts, usually 'dirty' DC. An external filter unit could be supplied for use in the power input circuit if onboard noise was a real problem.

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- SFERICS.-

- Letter from member about the importance of that red metallic coating on the EF39 type valve. He had considerable instability an all bands, all frequencies which manifested itself as uncontrollable whistles on stations. This was eventually traced to the fact that a lump of this metallising had come away from the glass and left about 2 square inches of bare glass exposed. His cure was to glue the plaque back into place and secure it with a binding of fine fuse wire. Result was no more instability.

- Another member writes to say that it is as well to beware those bargain packs of components on sale at rallies. One packet he bought contained some clearly marked and unused 100 Kohm carbon resistors of about one watt size. Clearly marked Yes, as Brown Black & Yellow which equates to 100,000 ohms. On a check each and every one was measured at about 10 Kohms, about 20 per cent tolerance. A good idea to check EVERY component before soldering it into circuit, this could save time and tears later.

- A 640 plus the optional Cat No 687 vibrator power supply was bought recently by one member of EUG, total price including delivery was £28, not bad eh ? He says that whilst the 640 is fine he cannot get the 6 volt vibrator to work, does anybody know of a source for these ?

- The mini version of the round diecast speaker was the Cat No 652 - in black or grey, this is a rare item for some reason, I can only ever remember seeing one or two in all these years, point is that one was sold for £12 at a recent rally.

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- The EC10 and Operation of 'D1'.-

- There have been several queries in recent mail as to the reason for the inclusion of 'D1' in the first IF amplifier stage of this receiver. In one case it had apparently failed - shorted out - and the receiver suffered from low sensitivity.

- A glance at the circuit diagram for the EC10 shows that D1, in series with R19 is basically across the primary of IFT1, and has no effect upon the signals until they exceed a certain potential, circa 0.3 volts, whereupon D1 conducts and allows the 470 ohms resistor, D19, to damp the applied signal.

- The resultant damping effect allows of better operation under strong signal conditions, the action assists the AVC circuitry and prevents overloading of the detector, D2, and TR5.

- The original component was a type OA70, Mullard manufacture, but any germanium diode will function in this position. A silicon type diode MUST not be used here since the capability of the circuit to handle overload conditions will be severely reduced.

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- The 750 Output Stage, V8.-

- I know, I can remember that my first introduction to a 750 on the bench had me wondering about the lack of an electrolytic type decoupling condenser in the kathode bias circuit of this set. The kathode resistor, R42, of the N78 output bottle is not decoupled as you would expect, with a 25, or similar value, microfarad condenser, as the circuit will show. It is not an omission as one EUG member suggested when delving into the 'innards' of his 750.

- Omission of the electrolytic in this position introduces a measured amount of negative feedback to the N78 output stage and this has the effect of linearising the ~~the~~ amplification over a far wider than usual, in communications receivers, frequency range.

- This linearised output, together with the 3.5 watts power output of the N78, enable the 750 to be used for high quality reception and reproduction of broadcast signals via a large external speaker. The addition of P.U sockets at the rear permit these output stages to function in conjunction with a 'gram' unit or tape-deck.

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- The 820 AM/FM Tuner Unit.-

- This 8 valve tuner unit is still popular with many members and is in daily use by a surprising number of owners. Over the years there have been several queries as to the very low operating voltage of V5, an EF91/6AM6.

- From the circuit it will be seen that the anode feed resistor of V5 is a 27 kilohm value, much higher than expected in this IF amplifier stage. However the valve is being operated as a limiter stage, preceding the the 'Foster-Seeley' discriminator stage, V6.

- Under these operating conditions V5 has just 55 volts on the anode and screen pins, and a quite considerable grid bias voltage is developed across R27, a 0.27 Megohm grid resistor. This bias voltage, negative of course, serves two completely separate functions in the 820 circuit. It is used to operate the EM80 magic eye tuning indicator, V7, on FM operation only. The tuning indicator does not operate on the fixed-tuned, switch selected, AM operation. It also provides an AVC voltage for the control grids of both V3, an ECH42, and for V4, an EF91/6AM6.

- One point of interest with this unit is the way that viewing of the 'magic eye' can show how effective the AVC and the limiter stage really are. Living close to the flight path of many large civil aircraft, the 'flutter' effect is very often noticeable on FM broadcast reception, no receiving set-up is completely immune to this nuisance effect. With the 820 it is often possible to see, and hear an aircraft which is in the vicinity, and whilst listening to the almost unaffected audio output, one can see the flutter effect on the display of the 'magic eye'.

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- Catalogue No; 598, Slow Motion Dial.-

- This very nice looking and well designed 'Full Vision Slow Motion Dial' was very popular for 'home-brew' projects in the mid 50s, it still is if you can lay your hands on one. There has to be a snag of course, inthis case the item is rarely found for sale, even less in new and mint condition. One mint and still boxed sample changed hands recently for £35, yes thats right, I did not miss out a decimal point.

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- Another issue complete and off to Chris and his Merry Elves to be photocopied ! I hope that this issue does get to you all before Xmas so that you can have the pleasure of reading it whilst digesting your over-large festive meals. The addition of the fault listing will no doubt cause some of you to consider whether your favourite receiver, Eddystone of course, has any slight failings. Let me repeat what I have said in that Fault Listing - if your set is okay then please do let well alone. Especially should you have little experience of doing work on valve type sets. The HT supplies whilst not usually sufficient to be fatal, can HURT. The mains supply can be Fatal so be wary.

- To all of you, who have made EUG a success, thanks, and a happy festive season to all. To those at Eddystone Radio who have made it possible for us to continue, by taking over the admin; side of EUG. I am sure that the thanks of all of us go out to Chris and those 'volunteers' who do all the photocopying of the Newsletters, and deal with all of the mail, a Happy New Year to all. 73,

Ted.

WANTED, 940 or 960 working or non-working model. Can possibly collect in Northern England or Scorland. Contact John Martindale, GM8MLH, Alt-na-Feidh, Dalmally, Argyll, PA33 1AA. Phone 0838-200-304.

SELL, Isolation Transformer 240volt @ 150 watts. Variac 240 volt @ 8Amps in box with voltmeter and 13 Amp socket, output = 0 - 270 volts. Sensible offers please, Fred on 081-675-4622 (London).

SELL, Model 830/3 serial no; HO 0769, history and handbook £180. Buyer collects, ring Jack Read on 0270-67059 evenings. (Nantwich, Cheshire).

EDDYSTONE "ALL WORLD" TWO"

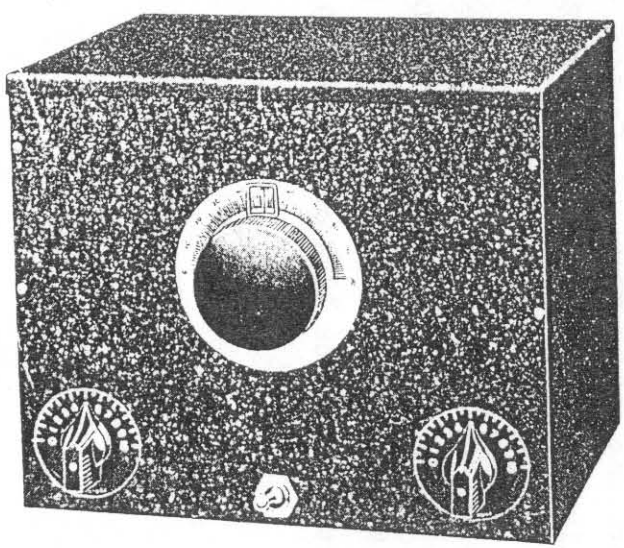
AN OUTSTANDING 2-VALVE SHORT WAVE RECEIVER WITH BANDSPREAD TUNING. FOR BATTERY OPERATION.

For Everyone interested in Short Waves

If you wish to get first-class headphones reception of World-wide shortwave broadcast and experimental amateur transmissions, the Eddystone "All-World Two" should be your choice. It is a specialist built receiver giving highly satisfactory results. It will consistently receive European, American, Australian and other long distance shortwave broadcast and amateur stations at good volume and quality. It is an ideal receiver for RNWAR and RAFCWR purposes.

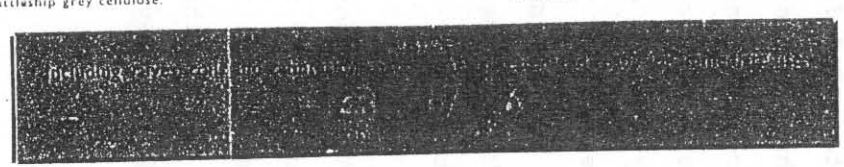
The "All World Two" is easy to work and has a low current consumption. It is equally suitable for shortwave broadcast and amateur bands reception as it is fitted with the special "Eddystone" bandspread tuning unit which allows continual bandspreading on all wavebands.

The wavelength covered by the two coils supplied with the receiver is 15.5 to 52 metres, but if it is desired to receive on intermediate ranges between 50 and 200 metres, extra coils are available.



SPECIFICATION FEATURES.

- CONTINUOUS BANDSPREAD TUNING. Special "Eddystone" Slow Motion Bandspread Tuning Unit allows each section of Tank Condenser to be spread over the full scale of dial. Permits widest calibration and tremendously improved selectivity.
- CALIBRATED BANDSETTING. Using patented "Eddystone" 10 x 14 m mfd. Tank Condenser. Ten predetermined settings each covering capacity of 14 m mfd. Positive and accurate grading control.
- HIGH SENSITIVITY—LOW NOISE LEVEL. The H.F. pentode detector valve gives high sensitivity and the noise level is extremely low, an important consideration, as many receivers suffer from high noise level and consequent inaudibility of weak signals.
- PRE-SET REACTION WITH POTENTIOMETER GAIN CONTROL. Regeneration is obtained by varying screen grid voltage of the H.F. pentode valve. It is silent up to the point of oscillation; produces minimum noise when set is oscillating for C. W. reception; no backlash; negligible effect on tuning.
- DIECAST ALUMINIUM CHASSIS. For extreme rigidity. A robust diecast chassis in aluminium alloy completely screens the components. Finished battleship grey cellulose.
- CABINET. The set is housed by a rigid and strongly built steel cabinet in brown crinkle finish. It has a hinged lid which allows easy access for coil changing.
- WAVERANGE. 15.5 to 52 metres with two coils provided. Calibration scales included with instruction Manual. Adaptable by extra coils to 200 metres.
- VALVES. A screened grid detector Mazda SP210 and Tetrode output Osram KT2 forms an ideal combination for powerful headphone reception. Signals at loud speaker strength may be anticipated given favourable conditions.
- NO GRID BIAS BATTERY. Grid bias is automatically obtained from the high tension supply. A separate bias battery is unnecessary.
- LOW CURRENT CONSUMPTION. The receiver when used with specified valves consumes 5 m.A at 120 volts high tension and .3 amps. at 2 volts low tension current.
- POWER CABLE. Heavy duty leads complete with low tension spades and high tension plugs eliminate possibility of wrong connections and ensure positive electrical contact.



Sole Manufacturers
STRATTON & CO. LTD., EDDYSTONE WORKS, BROMSGROVE ST., BIRMINGHAM

'Puts the World at your Fingertips'