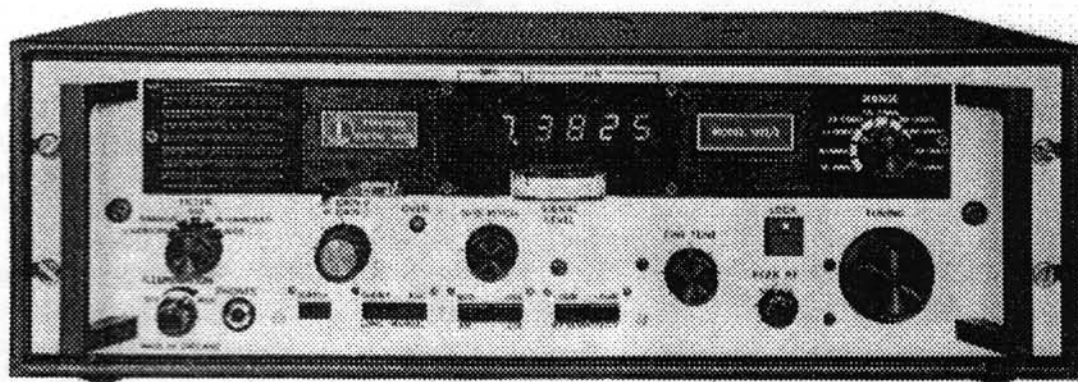


Eddystone User Group Newsletter



Issue No: 60

April 2000



Featured Model

The Eddystone 1837

**** Happy Birthday EUG – 10 Years Old This Month!!! ****

- A non profit newsletter for Eddystone Users
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SPECIAL

FRONTIS

Well it is time to write another frontis. I hope our readers don't find these too boring, I seem to be resorting to babble mode rather than giving you exciting news about the world of Eddystone or EUG. Much of my free time in recent months has been spent organising the Wythall Rally for the Wythall Radio Club.

This was our fifteenth rally and it was very successful and a nice day to boot. I invited Graeme and Dave Simmons to set up an EUG stand this year and I must say it was very nice to say hello to those EUG members who sought me out from my organiser's caravan.

Rallies are often the main source of funding for amateur radio clubs and they have known mixed fortunes. These days all rally organisers find it difficult to get the traders in and it is getting more difficult to keep the balance right between radio and computers. I must say that I admire the traders who attend rallies every week-end, it is not the way I would like to earn a living.

Many traders are now going over regularly to the continent to rallies in Holland and Belgium. Good luck to them I say. My next opportunity to see EUG members will be at the NEC Vintage Fair on the 30th of April. Fortunately this year it does not clash with Drayton Manor which is on May 7th.

Graeme tells me that he intends to send out the data sheet on the Model 1161 Panoramic Receiver. This was one of the products developed just after I had taken over as MD of Eddystone Radio and there is a bit of a story to tell about it.

Eddystone had pioneered the use of panoramic adaptors to view the spectrum either side of the tuned frequency of the receiver. The last generation was a CRT based unit called the 1061A and the 1061B. We had just sold the last of those when I joined in 1984.

The 1161 was the first liquid crystal display panoramic available on the market and Bill Cooke, my predecessor who was Chairman of the company, was quite keen for Eddystone to continue to offer panoramic receivers. I have to

say the engineers weren't quite so keen. We were at that time being told by Marconi that there were lots of opportunities to sell monitoring systems for spectrum occupancy, an area that Rohde and Schwarz, a German company, seem to have sewn up.

Encouraged by Bill, I applied for the funds to develop the new panoramic, I seem to remember an estimate of about £35k for the work. Because our own resources were busy on the 1650 derivatives and 5000 Orion, we sub-contracted the development to a company called Sharetree, in Stroud, Gloucestershire.

I forget the names of people but one was actually ex-Marconi and they had done some work for Bill in earlier years. Their main area of interest was machines for component burn-in but they had some good engineers. They built the prototypes and we turned them into production units. Of course it cost a great deal more than £32k and we practically re-engineered it during the production phase and it came onto the market in about 1988.

We sold a few, I seem to remember the Dutch Airforce or Navy bought some, but I don't suppose more than a dozen were ever built. Not a commercial success and it taught me a valuable lesson about having a good marketing plan to support a new development. It also taught me a lesson about engineers and the "not invented here syndrome".

Still, it was a bit of a pioneer. It was capable of sweeping up to 6MHz wide and it had lots of features which were only available on units costing many times more. I think we sold it for about £5k or £6k. We tried to win a number of monitoring system contracts with it and its associated receivers the 1650 and the 1995 but in the end we had to recognise it as a bit of a techno-turkey.

My best 73's

Chris Pettitt - GOEYO Patron

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E.U.G. NEWSLETTER

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DOUBLE FIGURES . . .

The end of ten years of EUG; another milestone for us. I wonder how many EUGers have been with us right from the beginning?

The Newsletter is vastly different from Issue Number One and is now more representative of just what a Group Newsletter ought to be, with input from many members — my first issue was "All My Own Work". Now we have Graeme co-ordinating and consolidating the work of many EUGers.

Very soon we have another NEC Exhibition, the 30th of this month. Whilst it is what Graeme calls a "flag waving exercise" it does attract some new members and of course there are the current EUGers who just come to chat, to browse, or sometimes to renew their subs.

It has also become traditional to have several models on display, perhaps allowing a visitor to have his first ever glimpse of a particular model. This often results in adverts in the next Newsletter from that person crying out for somebody to sell him that model, such is the allure of an Eddystone! Once seen, always thereafter longed for.

NOW WE KNOW . . .

An item from the NEW SCIENTIST which reminded me of the past (c.1959):—

"Being a keen gardener, Feedback was delighted by a horticultural malapropism that appeared in the Times Higher Education Supplement a couple of weeks ago. An article on the life and work of Seymour Benzer proclaimed: "His tinkering with geranium alloys in 1943 helped lead to the invention of the transistor and the electronics revolution."

Now I really did know an otherwise normal radio engineer (well as normal as any of us are!) who always, persistently pronounced it as "geranium" and this despite being corrected time after time by many of us working for Decca. This went on until one bright spark (aren't all sparks bright, or were there some dull emitters amongst them?) brought in a packet of genuine geranium seeds one morning. This was left on the culprit's desk with a placard reading, "NOW MAKE A TRANSISTOR FROM THESE".

Of course even the word transistor was mispronounced by many in the fifties era. I have heard some famous names who called those three-legged fuses TRANSISTORS, honest injun! TED.

From TED's Mailbox

VALVES DO GROW OLD.

From the moment that a valve kathode is powered up the level of emission will begin to drop, immeasurably small to begin with, but a couple of years down the line then the emission will no doubt be slightly below the level of a new valve.

This means that the figures given in the data tables for that type will no longer be applicable. The mutual conductance will be reduced, performance ditto. In order to restore some of this performance the bias needs to be reduced and so the current rises, bringing an increase in the heat produced internally.

Sometimes this heat can cause gassing, hence a 'soft' valve. So although your receiver may still be performing forty years on with its original valve complement this hardly means that your set is performing up to its original specification. Alan reminds us all that any 'old' receiver will perform better with a complete valve transplant.

He proved this with his own 730/4 just a few months back. It is 'on' most evenings and does give yeoman service by pulling in many exotic Dx stations.

Having had the chance to hear a 730 belonging to a pal he realised

that his 730 was much more noisy than his pal's. A full set of 'bottles' was procured over a period of several weeks by ringing around the various dealers, very expensive both in phone calls and for the merchandise, but now that the job is done the result is well worth while.

He has kept all of the old valves until such time as he can get them tested and then the still 'good' ones will be kept for spares, the others dumped.

AERIAL TIPS

Jim reminds us that whilst a longer wire aerial will feed more microvolts to the receiver input, not all of those microvolts will be of wanted signal.

Such an aerial will also pick up the myriad of QRM noises that abound today. For best pickup of a 'wanted signal' then we need either a resonant aerial or one which is matched for the frequency in use.

He goes on to say that if a resonant dipole, or folded dipole, cannot be provided for the band in use then go for a resonant L type, the Marconi aerial.

If there is no possibility of getting a resonant aerial then the highest wire possible fed via an aerial matching unit will help. Height is always better than length, since the higher you go the less the aerial will pick up of domestic QRM. This is especially noticeable when it comes

to such as computer hash or Tv timebases.

He also reminds us that at the normal heights which we encounter, say 25 to 30 feet above ground, the simple long wire, the L type, the dipole or folded dipole have very little directivity — FACT! It is only when you start getting up towards 100 or 150 feet that you will get real directivity exhibited. Any such apparent directivity found at lesser heights will be due to obstructions or local reflecting objects. It is not often realised that objects in the vicinity of a wire aerial can absorb much of the available signal, viz; trees, especially when wet.

Again, a nearby metallic roof can reflect or absorb some of your aerial signal. Even the house itself can block signals at certain frequencies, more so the higher the frequency.

SOLID STATE VIBRATORS

A very good response here for the EUGer who was asking for info on these. Several members wrote in to remind us that the Antique Electronic Supply Company in the US of A can supply them, or they can be obtained from The Vintage Wireless Co of 174 Cross Street in Sale, Cheshire.

They appear to be available in 6 or 12 volts and either synchronous or asynchronous. About £25 isn't cheap but unlike the mechanical 'choppers' these should last forever. Thanks especially to Peter and Mike for this information.

NO DIODES, PLEASE!

I have been taken to task by Mike for suggesting the use of silicon diodes type 1N4007 to replace a 'bottle' rectifier, since these have a lower voltage drop across them and hence will provide a higher than normal HT supply, hence the possibility of damage to the electrolytics.

He says that without the use of series droppers in the circuit, as per the EA12, the 1 amp types (1N4007) should not be used. Rather he suggests using the 3 amp type such as the 1N5308 which is more likely to survive the rigours of life in a hot environment.

ECHELON & EU(G)

One of our 'very computer literate' members has written in with the following info about our shortening of Eddystone User Group to EUG.

A very interesting observation, Tom. Recent comments in the press have mentioned a security computer program operated by GCHQ at Cheltenham, using four super CRAY computers to sift through and monitor all UK phone calls, maybe even calls beyond the borders of the UK.

The two listening stations at Morwenstow in Cornwall and

Menwith Hill in Yorkshire capture satellite phone calls and the BT switching centre near Oswestry collects landline phone calls.

All of these are sifted by computer software designed to look for keywords and then to feed calls containing any such keywords to auto transcription machines. The program used on these 'super computers' can sift calls at the rate of some 500 million characters per second (equal to about 400 full length novels!).

The keywords chosen are often Defence related but are these days increasingly drugs related. In fact it has been disclosed recently that not just Defence and National Security matters are being monitored, but also calls relating to matters involving the EU (European Union) and in many cases purely industrial matters, where this information may be of interest to the British or US Governments.

That the British Defence Command Network is being used for such matters of industrial espionage is a disquieting factor. But our member tells me that phone calls where one of us mentions the Group as 'EUG' may trigger the program as being relative to 'EU' matters, so Big Brother may be

learning about our Group — much good may it do him!

Thanks Tom, maybe we ought to give B.B. a complimentary subscription so that he can learn all about us. Ted.

770/830 ?

There has been mention of the IF output facility on the S.770 Mk II series. Whilst this was incorporated originally to provide a feed for the EP17R panadaptor unit one of our EUGers has wondered whether it may be possible to utilise this IF feed at 5.2 Mc/s to feed the aerial input of his S.830/7, in the same way that one used a BC453 Command receiver as a 'Q-fiver' after another comms receiver to provide additional selectivity.

If anybody has tried this then it would be appreciated if you can drop a line detailing results to Ted for inclusion in the Newsletter. Thanks.

THOSE STRAIGHT SPYCATCHER RECEIVERS.

Several letters from EUGers on this subject, two which suggest that the receivers used were probably ex-German sets since the military over there had a couple of very sensitive TRF models.

Another suggestion from

Graeme, and others, was for the ex-RAF R1084 receiver, this dating from the '30s but still good. So, the subject is STILL open for want of any definitive answer. Ted.

'BP' Initials.

For some time there have been queries as to the identity of those mysterious initials which appear on many of the old Schematics coming out of the Bathtub. Or even those on older Schematics dating from the pre-Blitz era.

Now, thanks to the prodigious memory of Bill Cooke we have some names to affix to those initials.

'WJS' — this was Bill Scarr, --- Senior Draughtsman.
PM' — this was Pat Manley, --- the Tracer.

Any more offerings will be gratefully received and printed in future Newsletters. Ted.

Designer of the 1650 etc;

A mention from Graeme to the effect that EUG has now recruited Roger Sutton, ex Bathtub employee who was responsible for much of the design of the 1650 receiver. Members such as Roger could be a definite asset to EGG since so much of the later Eddystone 'savvy' is beyond our grasp. Roger is now

Managing Engineer at the 'new' Eddystone Radio, now part of the Megahertz Communication Group.

Welcome Roger, and thanks for your contributions to our Newsletter. Ted.

THE CROSSED FIELD ANTENNA

There has been some correspondence between Graeme and I recently about this 'CFA' which appears to have re-surfaced, since I first heard of it in the last century (the mid '80s actually).

I can recall this being touted as the best thing since sliced bread. It has been variously called either the Composite Field Antenna or the Crossed Field Antenna but what it is supposed to offer is a highly efficient radiator of small dimensions.

I have never been able to accept all of the pretended advantages of this device.

If, as they say, this is such a good aerial for transmission purposes then why is it not now widely, and I mean widely, used?

From my early recollections of it the first commercial use was for a medium wave transmitter in Egypt, near Cairo I believe. The claims made for its efficiency as against an ordinary wire radiator seemed extraordinary at the time. Then one

writer pointed out that given the generally poor conductivity of the soil in Egypt, then no matter how large in area the 'ground mat' used, the efficiency of LF/MF aerials was always poor.

As the writer pointed out, even a palm tree will radiate if properly fed and loaded. This aside, the CFA appears to consist of a highly selective resonant device, which does not require a good earthing system.

It may well function okay for the lower HF bands such as 'eighty' and I for one will welcome any feedback from EUGers who try out the CFA. How it will perform for receiving purposes is not clear. TED

LICENSED EUGers.

A note from Dave pointing out that since more than half of us in EUG are amateur licence holders then maybe we ought to start catering for them with more transmitting content to the Newsletter. Phew !! I've had this out before with several members, also the subject of lists of frequencies for listeners.

Here is how I see it: if you disagree then go ahead and tell me so. Eddystone made predominantly Receiving equipment and apart

from the few Orion sets very little in the way of Transmitters.

If there are any more Eddystone/Stratton tx's out there we will happily print the info. BUT, I don't see it as being our place to discuss such as Kenwood or Yaesu. We just do not have the space. As things are you may have noticed that Graeme has had to begin changing the format so as to get more of our genuine Eddystone related stuff in the specified number of pages. We have to keep to the present number of sheets per copy so as to stay within the postage bands, (which continue to increase), a couple of pages more mean a higher postage band and maybe £60 or £70 more each issue to spend for stamps.
TED

ARMED FORCES RADIO

It seems that a number of short term (28 day) RSL licences have been issued for use by the British Forces Broadcasting Service. These stations were operated from the major 'garrison towns' such as Catterick and Aldershot etc.

Question: did any EUGor hear any of these stations as Peter would like to know the frequencies used. Can You Help ???
TED.

JIM LIVES AT 63 NOT at 62 !

Just to correct an error or 'typo' which gave Jim Murphy's address as 62 Wrose Rd, Bradford, when it is, and always has been 63 Wrose Rd. Sorry about this Jim, these things do happen. Hope that it did not cause any ill feeling with number 62. *(Sorry, folks, it was my mistake -- Graeme.)*

This is to remind EUGers that Jim functions as my Mailbox for EUG mail, he does a very good job too, despite my having little time to write back to him. Keep up the good work Jim, and Tnx. TED.

AN 840 Mark II ?

This receiver is not yet identified so take the heading with a pinch of salt. Mike bought this '840' via the small ads in a local paper and he does promise a full report when he has 'sorted' it.

Here goes — "At first glance it is just like the 840C but has an S meter in place of the magic eye, and it boasts a calibrator switch on the front panel too!

"Inside it follows the normal Eddystone layout but unlike the 840C it is an AC only set, with the necessary double wound mains transformer. The valve line up is 6DA6(EF89) as RF amp, ECH81 as

Mixer, and local oscillator. A 6BA6 functions as IF amp; this is followed by a 6AT6 as Det/AGC/AF, with a 6AQ5 as AF output. The BF0 is a 6AU6 and another 6AU6 is used for the calibrator."

An 0A2 is used as regulator with rectification by a pair of those 'silly' diodes. Another 6AU6 appears to function as an S- meter driver amp.

When bought the set was not working, apparently one of the HT diodes had gone short circuit. After replacement the set works, just about.

Mike's first thought was that this was just another modded Eddystone but as he says — the workmanship is of such high quality and the finger plate is professionally labelled. The wiring is expertly done and there is no sign of repairs or mods.

The e'lytics are dated late 1964 and also appear to be originals. The S-meter is one of those with an edgewise scale and appears to have been very expertly fitted. The idea of it being a Mark II came from seeing the list of models as contained on the G7HZZ website *(see last month's newsletter)*, Mike says that this site is certainly very interesting and that it brings together lots of useful info for us

EUGers. I do suspect that the 840 Mk II mentioned there came from an old list of mine that I received from another EUG member who was unsure of several entries on his list, this was one of them.

(Graeme writing now: I phoned Bill Cooke, former Chief Engineer at Eddystone, and he told me there never was an 840 Mk II. He says the set was a product of the Eddystone 'Model Shop' where 'specials' were built when times were quiet. Sometimes they were accepted for production; sometimes they were just raffled off. This would undoubtedly be one of those and as such a unique item.)

ADVANTAGES OF TWIN FEEDER AERIALS

Here we have a letter from Alan who has spent the past few months experimenting with HF aerials made solely from 300 ohm impedance twin feeder. It helped that he bought a 100 metre roll at a club sale. He has used this feeder for both the feedline and for the aerial top in various configurations.

He began with a simple folded dipole for 10 metres, progressed through the T2FD using a centre point resistor, and on to a simple folded unipole (half a folded dipole)

with one leg of the twin feed left disconnected at the top end and both wires of the top strapped together.

His last experiment involved varying the value of the usually 400 ohm centre point resistor from 220 up to 560 ohms. Here he found that with his EA12 the best results came with a 270 ohm non-inductive resistor. A carbon rod type.

Alan states that with this T2FD type fed as above it is possible to run the feeder close to a wood and plaster internal wall with no drop in signal strength. Running the feeder out over the ledge of a wooden framed window made very little difference. Best of all he had full band coverage on 10 metres with little change in the aerial gain.

His experiments were made using the EA12 for reception and his remotely located BC221 to produce the signals (harmonics, of course).

He states that a BC221 is the ideal signal generator for doing such experiments. TED.

Intermittent Fine Tune On an EC10 Mk II

I have had a few of these over the years and the most common culprit is the BA111 varactor diode. This was not the problem recently

when Sam and I corresponded re his problems.

It was finally necessary to remove the fine tune pot, open it up and inspect the track with a large magnifying glass. The pot read okay from tap to low end (chassis) but was open circuit to the top end of the track; there was a crack across the point where the rivet goes through.

A replacement cured the fault and the set was re-assembled, but even the new pot required a good dose of switch cleaner before operation was perfect on resolving SSB. TED.

IF YOU WANT HELP . . .

Just a small point, this, but when you do write to any of us here at EUG with comments or queries re items in past issues of Newsletters then PLEASE, PLEASE, do state the ISSUE number and PAGE where the item concerned appeared. This will save such as Graeme or myself from having to thumb through a multitude of pages. Okay? - Thanks. ★ TED.

More from Ted's Mailbox Further On

BACK FROM THE DEAD

- THE TALE OF A 770R/1

This is the story of a radio, which was constructed from a pile of scrap chassis. The starting point was to select from the big pile of bits a front plate, gearbox and RF unit in the best overall condition, and free of mechanical damage. The selected unit was 770R/1 serial number KP0051. Work started with careful cleaning. I used about a pint of meths and a ½" paintbrush to do this job.

The bandchange control knob was removed by withdrawing its grub screw and then driving out the tapered cotter pin whilst physically supporting the thrust side of the knob. The spring turrets fixed contacts were fine and did not need to be reset. Some of the rotating spring contacts were missing or damaged, so replacements, together with the important SRBP backing insulators, were salvaged from other scrap chassis.

Inside the RF unit, every resistor was removed in order to verify correct insulation of the gang rotors, stators and associated mica-insulated plate capacitors, with the turret between adjacent ranges. New resistors were then fitted throughout. I used very small, metal oxide ½W types. The only difficult one was the RF amplifier 200 ohm cathode resistor, which was originally mounted on the inaccessible rear face of the valveholder. It now lives on the front: possible because of the very small size of modern components. Next, out came all the Hunts tubulars, and in went subminiature mica capacitors except for the AGC decoupler, for which I used a radial polyester. It was expected that changing the capacitors to improved types may improve LO stability but was also expected to worsen performance on Band 1. The circuit diagram reveals sinister-looking parallel

decoupling. This practice is usually frowned on, as it is a recipe for unwanted parallel resonances. Therefore I expected my rather arbitrary selection of available components to cause some problems on Band 1 later on. Noticing from the circuit diagram that decoupling of the 150V regulated line barely exists, I added a 470nF/250V polyester tubular directly between the gang frame and one of the RF unit filtercons.

Next, out came all the drum sections and each was opened to look inside. All was well, so everything went back together again, noting that each turret range block is supported onto the hub by four top-hat paxolin washers. After cleaning, all the cores in the turret, formers for Bands 3-6 were removed and cleaned, then reinserted with some waxed lacing cord trapped in position.

New Mullard EF95s were fitted at this stage, inserting them very carefully on account of the precision contact sockets fitted to the cathode pins. The valvebases are engineered this way to minimise lead inductances. To stop bits getting into the RF box later during the repair work, the gap under the valve cover was sealed, and the big rectangular hole in the baseplate was also masked off temporarily. It's worth saying at this point that the 770R/1 turret

contacts stand proud of the bottom cover and are easily damaged.

The PSU subchassis attached to the RF unit looked basically okay. Since this radio was an RN example, a Plessey Mk4 3-pin mains connector was fitted. One modification made to the PSU was to add a 1A quick-blow HT fuse between the centre tap of the transformer HV secondary and earth. It might just save a fire one day. The BFO can was removed for internal inspection, but it was found to be perfect inside. The rubber insulators of the 1959 electrolytics looked fine so these were left well alone. This type of TCC/Plessey 50uF component rarely gives trouble. Back went the original VRI50/30 and a very old and tired 5Z4G, used until the chassis was proven.

It was decided at the outset to use an IF unit from another scrap chassis, to replace the extremely incomplete one fitted to the radio under repair. Checking all the 33k-ohm 2 screen resistors and the 47k-ohm metering resistor, all of which were green Dubilier 1W types in the "new" IF unit, it was decided to replace the whole lot. Lifting one end of a selection of the grey Hunts miniature tubulars, and some of the TCC metal cased 10nF decouplers, revealed all of them to be about 300Megohms: okay for further service. The IFT needed to complete the chassis was T3. A suitable component was taken from another unit. There turn out to be two distinct types of IFT, as follows. Early: the mica capacitors are integral with the top coilformer support plate inside the IFT. Late: the resonating capacitors are small-diameter Sufflex wire-ended polystyrenes suspended between the coilformer supports. After cleaning, all the IF/BFO cores were removed and cleaned, then reinserted with some waxed lacing cord exactly as had been done with the RF cores.

Next came careful checking of the mode switch. This uses a paxolin shaft which can be removed rearwards after carefully filing away any burrs where it has been bitten by the grubscrew in the coupler.

The circuit shows that the AGC to the front end comes directly from the main AGC line feeding all the 6BA6s. The EF95 is a sharp cut-off valve, so it ends up having to do all the AGC work while the 6BA6s in the IF strip never ever get to work on the tails of their characteristic. I wonder why Eddystone made this simple error?

The RF unit I had chosen as the basis of the project had no audio subchassis already attached. In my pile were only 3 AF units. In the end I decided to use an AF subchassis taken from a 770U/2 and adapt it for the 770R/1. It turned out to have a "unity gain phase splitter" push-pull 2xEL91 system rather than the older paraphase arrangement shown in the 770R documentation. I had no circuit diagram of the new circuitry so I had to make a drawing of it. One of the four triodes in this AF unit had been used as a metering valve in the donor 770U/2 radio. In the 770R/1, the metering function is performed entirely by the IF unit, so I rewired the unused triode as an extra audio amplifier, to compensate for the lower gain of the phase-splitter output stage. At the same time, all the notorious Plessey plastic electrolytics were replaced.

The AF unit had a very nice grey metal terminal escutcheon plate. All of its contacts were crunched, so in went a set of modern Bulgin terminal posts, with 18swg centering rings. At last, the AF unit was cleaned. Because of the inaccessibility of the AF unit when fitted to the set, I carefully tested it using an HT/LT bench PSU. All the connection tags on the AF unit which needed to get wired to the loom, were

carefully cleaned-up with solderwick and then marked with a red felt-tip pen so I could see them clearly. Then came the task of making the whole thing work as a radio.

First, the AF unit was fitted to the back of the RF box and bolted onto the PSU chassis. Then all the wire tails were connected deep inside the AF unit, using a long, thin Antex 15W iron. The adjacent loom was protected with a length of 1" wide kapton tape.

Then came the headache! When I offered up the IF unit, I could either make it fit the front plate, or fit the AF unit, but not both together. At least, not with any chance of inserting all the 2BA screws that connect the IF unit to the RF box. In the end, I loosened every single bolt that holds the various structural parts of the 770Rb1 together. Then by slightly filing oval five holes in the IF unit, and then attaching it loosely to its mating units with the full complement of retaining screws, it finally proved possible to tighten everything into position.

The front panel was offered up to the RF unit front plate, having first removed the pieceparts at the back of the input spindle. Reassembly needs to be done carefully, to avoid damage to the tinplate gearbox input drive disk. I fed the switches, etc., carefully into position through the machined holes in the casting and then when the panel was fully "home", I loosely bolted-up the handles on the front to the handling frame at the back of the panel casting. Then through the hole in the RF front plate, I fed the dialdrive cone, spring and locknut. At this stage the securing grub screw was in position but deliberately left almost ready to fall out. It was tightened only when the locknut was fully seated.

Then HT was progressively raised from zero, using a bench supply. Apart from monster hum in the speaker, absolutely nothing happened. Then very light AC coupling of 5.2MHz AM 30% @ 1kHz into the feed pin of the 1st IFT whilst looking for audio on the AM detector diode and it all tuned up a treat, with two peaks to each core. Never mind the loud hum at this stage! Then I discovered the hum disappeared on FM and that Band II broadcast was very fair, after setting the discriminator and adjusting the metering and muting.

The following day found me struggling to find the source of the severe AM hum. There turned out to be a short between 2 adjacent pins of the limiter valve, but I physically couldn't see the limiter valvebase until I had first removed the rearmost mode switch wafer and two 3-way tagstrips. Then I found the cause: a filament decoupling capacitor had become dislodged.

The dial bulb supporting bar is made of thick paxolin. In the entire pile of scrap chassis, there was only one example that was not badly scorched. This one was put into position with 2 good used festoon bulbs and a new 3.3-ohm series resistor.

Feeding the radio from a 50-ohm source, the RF, mixer grid and oscillator circuits were next adjusted. Removing adjacent turret sections to gain access to the inductance adjustments is tedious but easy enough. The adjustments do reveal a high degree of mixer transparency on Bands 1 & 2. Worse, the Band 1 windings comprise very heavy wire, and proved very hard to reposition at 120MHz through the little adjustment hole. In the end, I chose to settle for rather severe mistracking of the mixer grid on this range. I suspect this problem is mainly due to my non-original decoupling components, and I have accepted the

situation pending further work.

Measurements made after the repair work were as follows:-

AGC: the spec is <12dB audio rise over 10uV to 10uV+70dB. With 30%AM @ 1kHz, levelling in the middle of the bands shown, was:

Band 2: 10.3dB, with AGC increasing from +0.04V to -7V.
Band 4: 7.4dB, with AGC increasing from +0.04V to -7.5V.
Band 6: +4dB, with AGC increasing from -0.7V to -8.7V.

SEE HOW the AGC doesn't ever get beyond 8.7V! This is because the EF95 RF amplifier does all the work.

MUTING: at the centre of Band 3, the gate opens reliably at 3uV. The specification claims 5uV, so this is an easy pass result.

NOISE FIGURE: at the centre of each range, the NF is as follows:

Band 1 - 17dB, 2 = 6dB, 3 = 5dB,
4 = 3dB, 5 = 3dB, 6 = 2dB.

THESE RESULTS were taken using an R&S SKTU and an RMS voltmeter across the LINE terminals, in the CW position. See how deaf range 1 is. This result appears to indicate some 12dB low gain.

SENSITIVITY for 6dB (S+N):N recovered audio from 30% AM @ 1kHz:
140MHz = -99dBm, 100MHz = -124dBm,
69MHz = -125dBm, 48MHz = -127dBm,
34MHz = -126dBm, 24MHz = -126dBm.

Ranges 2 to 6 are very good indeed. Band 1 echoes the Noise Factor result.

IMAGE REJECTION was as follows at 10.4MHz HF of signal on all bands:

140MHz = 12dB, 100MHz = 32dB,
69MHz = 39dB, 48MHz = 43dB,
34MHz = 48dB, 24MHz = 55dB.

THIS RESULT is evidence of generally sound front-end design.

HT WITH A NEW 5Z4G was measured as 233V/125mA, with 228V mains.

LOCAL OSCILLATOR FREQUENCY STABILITY: on a Band II broadcast station from a cold start, the tuning has to be re-adjusted only once as the set warms up.

LOCAL OSCILLATOR PURITY: it is possible to resolve SSB on 2m. This cannot be done without the 150V decoupling capacitor, due to noise modulation.

OVERALL, the 770R/1 is undoubtedly a competent set, marred only by a couple of minor design flaws. The thing that really does strike me is that the whole thing is very compact and solidly constructed.

What a pity Eddystone couldn't get better components for it! One day I will knuckle down to sorting out Band 1, but in the meantime I am pleased with the radio as it is.

THANKS GO to Simon Robinson, G8POO, without whose generosity this project couldn't even have started.

Chris Parry

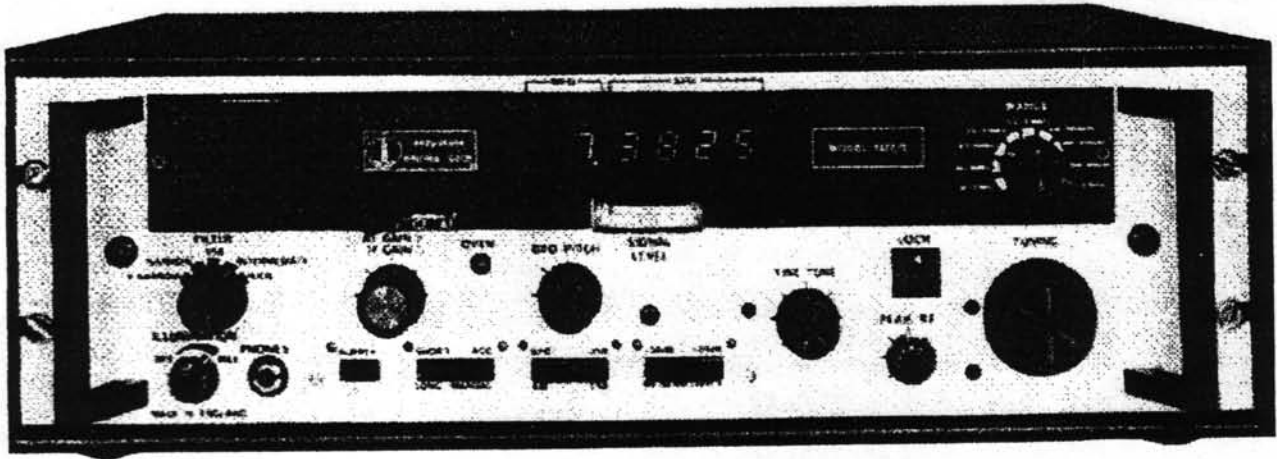


FEATURED MODEL THIS MONTH

THE

EDDYSTONE 1837 SERIES

BY PROUD OWNER DAVE JONES MW1DUJ

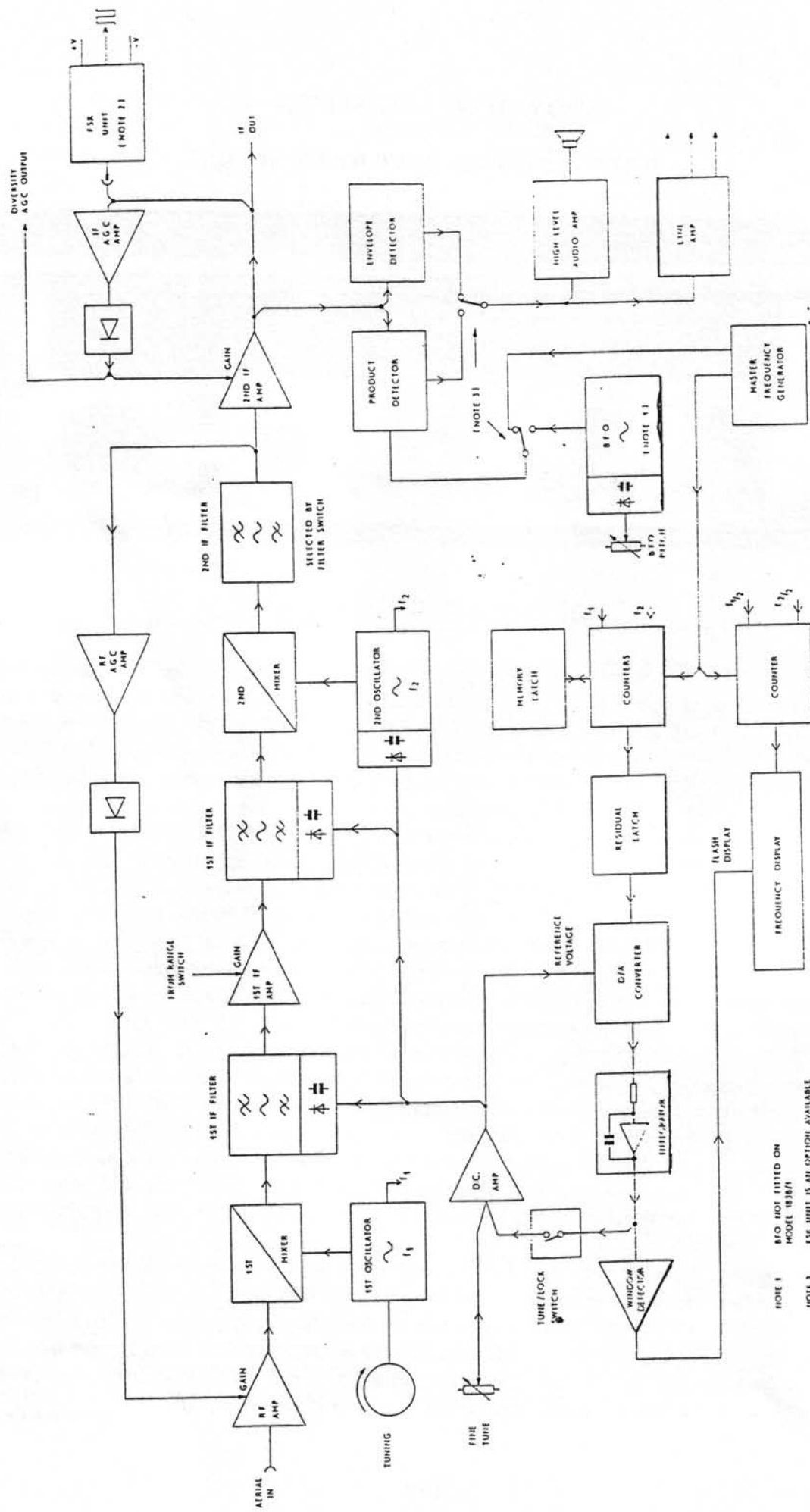


SHOWN ABOVE IS THE 1837/2

The EDDYSTONE 1837 series was introduced around 1976 to replace the 1830 series, which replaced the 830 series of valved receiver. It can be used as a very high stability receiver, and in this respect, it also filled a gap left by the discontinuation of the 880 series sets. They follow the accepted construction techniques for rugged and maritime use, with the 1838 having red markings on the tuning controls corresponding to the maritime distress frequencies for emergency watch keeping, and approval for use as a shipboard secondary receiver.

The series of sets covered in this feature consists of the 1837/1, the 1837/2, and the 1838. All share the same basic features and construction, and are of a very similar appearance. They are all double-conversion superhets, and have an RF amplifier stage, feeding to a dual-gate MOSFET first mixer stage, the first IF being at a nominal 1350 KHz, tuneable between 1340 and 1360 KHz, depending on the setting of the FINE TUNING control, but not on range 6, from 840 to 1600 KHz, where it is fixed at 1350 KHz and the second IF is fixed at 100 KHz. Most of the receiver gain is achieved in the second IF stage, where a number of different filters can also be switched into the circuit, as required by the operator. They are all single conversion in the band from 840 to 1600 KHz. The LOCK and FINE TUNE features do not operate below 1600 KHz and therefore the set can only be used in high stability mode above this frequency. This allows only tuning ranges 1 to 5 to be HIGH STABILITY and have the fine tune facility. The 100 KHz output from the first IF amplifier is fed in parallel to the AM detector, the product detector for SSB, and, where fitted, to the optional FSK module. The product detector can, on all variants except the 1838/1, utilise either fixed 100 KHz injection derived from the master oscillator, or a variable frequency injection from the BFO unit. The model 1838/1 has fixed injection only. All variants have a 100 KHz IF output socket at the rear, to feed extras, such as the EP161 panadaptor.

The resultant output from the various detectors, depending on the receive mode in use, is fed to an audio amplifier stage, which has a separate amplifier feeding a 600 Ohm line output, and into an internal monitoring speaker, an external speaker, or a pair of headphones. Provision is also made for a side-tone input. Most of the connections required for the above, together with those for the internal muting relay, are to be found on the rear panel, brought out via a 15 pin "D" connector. These facilities and features are interconnected with each other as per the block diagram shown.



BPI404 Issue 1

BLOCK DIAGRAM

- NOTE 1 BFO NOT FITTED ON MODEL 1838/1
- NOTE 2 FSK UNIT IS AN OPTION AVAILABLE FOR MODEL 1837/2 ONLY
- NOTE 3 SWITCHING ARRANGEMENT DIFFERS UPON RECEIVER VARIANT

Now for the clever bit, the drift cancelling system. The system operates by measuring a change in the sum of the first and second local oscillator frequencies, which is equal to the total receiver drift, and comparing this sum with an internally generated binary number corresponding to the selected frequency. When the LOCK button is depressed, these numbers are compared, and the first oscillator frequency is adjusted until the difference is zero, meaning no drift. This is constantly monitored and adjusted within reason, but if the drift for some reason falls outside the range which can be corrected, the display will start to flash, signifying that it has done so. In practice, this almost never happens, unless the top cover is obscured and the set gets too hot.

The frequency stability is quoted in the manual as, in TUNE mode, 1 part in 10,000 per degree C, typically 5 parts in 100,000 per degree C, and in HIGH STABILITY mode, typically not worse than 5 Hz per day at a constant temperature.

The frequency is displayed on the front panel to within 100 Hz, and is driven by a frequency counter, not by a synthesizer, so it is always accurate, and the gating period is locked to the master oscillator frequency.

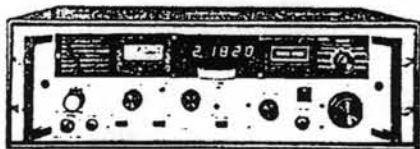
The series consists of three basic models, the 1837/1, the 1837/2, and the 1838/1, /2, and /3. There are also several variants, denoted by the suffix /a, /b, etc. The 1837/1 has only the upper sideband reception, whereas the 1837/2 has both upper and lower sideband reception. The 1838/1 and /2 do not cover the band from 840-1600 KHz, and the 1838/3 has a switched CW position. The FSK option can only be fitted to the 1837/2. Most of the differences between the models with a different suffix are found in the aerial socket arrangements and differing aerial input impedances. Any of these sets could be supplied with rack or cabinet mounting facilities, and a plinth speaker, cat. No. 989 was available to fit under the cabinet. The receiver, as stated, is a standard 19" wide rack mounting, but unlike, say, the 1650 series, it is only 13" deep. The height is a standard 4U rack size, or about 5 1/4".

No attempt has been made to provide a circuit diagram, as this is substantial, and not suited to EUG newsletter publication. If you can get hold of one of these sets, the biggest objection to buying it will be obvious, they are not very pretty. If you can overcome this, you will have a really fine set in your possession, able to hold it's own with any black box, and despite owning many sets, black boxes and all, I am usually to be found listening to my 1837/2.

Eddystone Communication Receivers

March 1978.

Ships Main and Reserve Receivers 1837/1 and 1838



The 1837/1 and 1838 Communication receivers intended for maritime applications in the frequency range 100kHz to 30MHz. The 1837/1 provides reception facilities for CW, MCW, and AM signals, together with selectable upper and lower sideband reception of A3A, A3H, and A3J signals. The 1838/1 is specially intended for maritime and high stability radio telephone applications in the range 1.6MHz to 30MHz and provides reception facilities for MCW, and AM signals with upper/sideband reception A3A, A3H, and A3J signals. Other versions are available. Both receivers are in accordance with UK MPT requirements and CEPT draft recommendations for maritime main and Radio Telephone Reserve Receivers. Standard features include a six-digit electronic display of receiver tuned frequencies together with high stability modes of operation. Generally designed to meet British Defence Specification DEF 133 Class 1

Frequency coverage:

1837/1 100kHz to 30MHz in nine ranges.
Fine tune above 1.6MHz
1838 1.6MHz to 30MHz in five ranges with fine tune facility

1838 For 10dB S/N ratio. With 75Ω in all ranges. AM 3μV at 30% mod
CW 1μV (not on 1838/1)

Reception modes:

1837/1 CW-MCW-AM-SSB (selectable USB/LSB)
1838 MCW-AM-SSB (upper sideband)

Power supply:

AC: 100/130V or 200/260V (40-60Hz)
DC: 12/24V with separate inverter

Sensitivity:

1837/1 (50/75Ω input all ranges)
15dB S/N ratio, 3kHz B/W:
AM 30% mod = 3μV emf; CW = 1μV emf

Dimensions (Rack Mounting):

Panel: 483mm x 159mm (19in x 6.2
Rack Intrusion: 334mm (13.125in)
Weight: (approx.) 16.783kg (37lb)

TAKEN FROM 1978 BROCHURE.

A LETTER FROM ROGER BUNNEY, of ROMSEY, Hants:-

Dear Graeme

17 Feb 2000

Just a few quick lines after receiving the No.59 of the EUG tome. The adventures of the S.870 in the Antarctic (p.32) proved extremely interesting if not pioneering stuff which makes our efforts in civilisation seem rather tame — albeit warmer! Noting the comments of Peter and his listening to the Falkland Islands Broadcasting Station @ MW 536KHZ + 80m I would like to just comment on the current situation in the Falklands. Being a member of the 'Medium Wave Circle' the Falklands is now a rare DX catch as they have just re-opened MW transmissions @ 10kw on 530KHz.

A DXpedition late last year into Newfoundland (at Cappahaayden, which is on the coast and a main DX site, a little like the UK's Sheigra in West Scotland) received Port Stanley, Falklands October 10th @ 0355 hours. This was an English language spoken programme underneath another co-channel station. The aerial used was a 1km (!) Beverage, terminated, aimed at Brazil.

I too used to MW-DX in the early 60s but then all of Europe seemed to close down before midnight leaving MW clear for DX. Now all stations operate 24 hours and to date I've not seen a report of the Falklands being received in the UK, though the 530KHz outlet has only been open a short time — under a year. The BFBS (British Forces Broadcasting Service) provide 24 hour FM coverage of the Islands and the MW service offers both local programming + World Service. Via BFBS the Islands also receive TV programming at UHF via a satellite feed ex UK.

I hope the above is of some interest.

With Best Wishes

Roger

Falkland Islands in the Frame

In our last EUG Newsletter we featured Peter Chisholme's journeys south, "To the Antarctic with an Eddystone S.870". This aroused much interest among members, and produced from Roger Bunney the letter on the opposite page. In it he refers to the British Forces Broadcasting Service 24 hour FM coverage in the Falklands Islands.

You can probably guess who supplied the transmitters! Before the Stratton scrapbook went to the Marconi collection, we found this rather patriotic newspaper cutting. Although undated it obviously originated after the Falklands Campaign. (c.1983). I hope Bill Cooke forgives the (Birmingham) Evening Mail Reporter for the diminutive reference to his name! **GRAEME.**



Flying the flag – production workers at Eddystone Radio, of West Heath, wave goodbye to the Falklands consignment.

Firm lets Falklanders tune in

Better radio reception is on the way for hundreds of Falkland Islanders thanks to a Birmingham firm.

Eddystone Radio, of Alvechurch Road, West Heath, is about to ship out two more transmitters to the South Atlantic islands.

The two kilowatt FM transmitters are part of a £100,000 sub-contract from the Ministry of

Evening Mail Reporter

Defence to build up services outside Port Stanley.

"At the moment not all the Islanders can receive their local radio station very well." Said Mr. Billy Cooke, managing director of the West Heath firm. "This will

help the local communities keep in touch with one another."

The first transmitter was sent out over five months ago and since then many of the 150 workforce at the factory have been assembling the remaining two.

When completed they will be housed inside containers and placed in position by helicopter at March Ridge and Mount Maria.

E-Mail from Chris Morgan, G3XFE, about IF alignment.

Hello Graeme,

Thanks for the e-mail reply the other night, I had no idea that you were a night bird and kept such late hours. I'm glad that communication has been established satisfactorily so here is the article as promised. In view of your remarks on the 'phone about keeping it brief... you may wish to edit it... O.K. here goes.

ALIGNING EDDYSTONE IFT's

It all started last year when I acquired a 730/1A. It was very grubby looking and had evidently seen very active use in some military scenario; it was coated all over in a thick nicotine grime. One of the many cleaning duties involved stripping down each IF can, mainly to establish (in my mind) the Eddystone principle of variable selectivity (apart from giving them the once over).

Eventually I re-assembled the receiver and re-aligned it according to the woefully scant instructions in the manual that came with it. I know that I took great care when realigning it and yet, having put it all back together and connected it up, I then tuned in a broadcast station and found that the BFO was miles off frequency. I repeated the test on several stations with the same result.

Okay... I'll wind up the selectivity to maximum... that way the S-meter will act as a tuning guide (since it only works in the max. position). I found a station... accurately tuned in for a peak on the meter... and switched on the BFO. It was spot on! I

repeated the test with the same result. When I went back to selectivity wide again, the BFO was off freq.

Because the BFO injection is pretty useless, (really? – Graeme) I use the set mainly in the wide selectivity position. So I whipped the case off and re-tweaked the BFO slug to zero beat, and have used it like that ever since. But I was uncertain why this should be as it seemed clearly wrong. I thought no more about it until I acquired a 940.

This set was immaculate and needed no attention at all but as a routine I always check the alignment. After methodically and carefully following the instructions to the letter, exactly the same thing happened again. This problem manifested itself on a 730/4, which I also acquired. This cannot be coincidence or the result of cack-handedness on my part because I exercised the greatest care throughout the whole process... so what is going on? What am I doing wrong?

Yours sincerely,

Chris Morgan G3XFE.

Graeme REPLIES:-

You're doing nothing wrong, Chris. It's a fact of life that changing the IF bandwidth by variable coupling alters the IF frequency by a measurable amount, due to changes in stray capacity. So long as your "miles off" is no more than 2 or 3 kc/s it's OK.

I first reported this phenomenon in the Newsletter a while back. I was just as surprised as you when I first noticed it on my 680X. ★

More From TED's Mailbox

770 Mk II Shorting Plugs

A letter from Ross in NZ to the effect that two of his 770U Mk IIs have these and they are solid aluminium. Yet, here we have a note from Don who points out that when the 770R or U (Mk II) is used in conjunction with the specified Panadaptor (EP17R) then this socket feed will be terminated with a 75 ohm load in the panadaptor and not with a short!

Don further suggests that somebody try a 75 ohm load in place of the shorting plug to see what transpires, gain up or down, or no change?

He does not have a 770 (Mk II) at present but is hoping for one shortly, if the XYL remembers his birthday list.

(Note from Graeme: the IF output feed on the Mk II is a compromise modification to the circuit of the Mk I. When the panadaptor is in use, the full sensitivity of the receiver is not required because it is a laboratory use, not a communications function.

The IF output is derived from the 'cold' end of the first IFT by putting an 82 ohm resistor in series with the decoupling capacitor. This also has the effect of much reducing the 'Q' of the circuit, thus broadening the response to give the desired wide-band effect. Shorting this 82 ohms restores the circuit to normal comms gain and bandwidth.

The use of a 75 ohm shunt across the socket would merely result in 'splitting the difference'.

GEC versus EDDYSTONE

Ross comments in his letter that he has a BRT 402 awaiting full restoration and that from what he

can see the mechanical construction of the BRT is a bit lacking, as compared with the 'battleships' produced at the Bathub.

The one that he has is actually a BRT402 which is simply the rack mounting version of the more well-known BRT 400. He comments that this model is pretty common out there in NZ land so GEC must have churned out a good number of them over the years.

Most use the loctal and octal valves with a few B7G types. My own recollections of this set are few. ★

TED.

Was Wireless/Radar used pre-WW1 to detect ships ?

My query to the exactness of this statement has brought forth a letter from EUGer John who appears to have done a fair amount of research in the matter. He comments that the Marconi History book isn't easy to locate but he has come up with the following.

A German, Christian Hulsmeyer, published in 1904 details of his anti-collision radar (but not using the term 'RADAR').

Basically using a Rhumkorf coil energising an aerial the echoes were received by a similar aerial and coherer. Is this an April Fool's jape?? Could well be!!

Thanks John.

TED.

NEW 'M5' CALLSIGN

Mike mentions in his letter that he has progressed from being G8RCG to being M5ACS. He has hopes of being the first M5 on the EUG net but is still having problems with HF aerials. His QTH is surrounded by overhead power lines and BT phone lines so that any horizontal

aerial wire runs just feet from these! Not a very healthy outlook. He has hopes for an 80m and 40m vertical at the far end of the garden and hopes to be on the 'net' soon.

★

TED.

(Note from Graeme; see 'Radio Ramblings' on page 35 for more comments re M5 and aerials . . .)

AERIAL IMPEDANCE SURPRISE

Well it does happen. Here we have Tony writing in to admit that he did not realise until the appearance of Issue 59 that his main station receiver, an S.740, had a circa 400 ohms aerial input impedance.

Oh yes, he does have a booklet for the 740 but it had never occurred to him previously that the input was anything but circa 75 ohms so he had fed it with co-ax from a simple wire dipole cut for 40 metres.

As he says, time now (after 8 years) to rethink his aerial strategy. He has his eye on a doublet type fed by home-made open wire feed as shown in a fairly ancient ARRL Handbook.

The feed line spacers are easy, he has in his junk box several dozen perspex rods of 3/2 inch length, just need holes drilled at each end. Tony will leave the old aerial in situ until the new is tested so as to compare results.

TED.

NOISY POTS

A reminder here from one EUGer that quite frequently the noise heard when a pot spindle is rotated is not always coming from a noisy track. Quite often this noise comes from poor conduction between the spindle and the spindle bearing.

A few squirts of switch cleaner may cure this but sometimes to do a good job you need to remove the

spindle, burnish it, ditto the bearing, and then re-lubricate both before re-assembly.

The worst offenders in this respect are those very high resistance pots used as volume controls in our favourite hollow-state receivers, verb sap. TED.

History Repeating Itself – Again

Following on from the item in the last Newsletter where Chris recounted his encounters with a 'con man' who defrauded Eddystone by pretending to be a US Military Procurement Officer. The 'Independent' for Thursday March 30th has a similar case.

Headed "Air Force Colonel dupes electronics firms of millions" it goes on to describe how this fake colonel, allegedly with NATO, persuaded up to 90 large electronics companies of his bona fida credentials as a procurement officer for clandestine operations.

He has so far got away with some \$50 millions (£30 millions) and whilst operating as either Lt Col Lamar Reed or Lt Col A West he has obtained equipment from such as Sony, Electronic Data Systems, 3Com, Adobe, and a UK company called Techex.

What is bizarre is that so far NONE of this equipment has been resold anywhere in the world. So what has he done with it all? Gullible they must have been, since this so-called US Officer came to meetings sporting a pony tail!

He also arrived in a limousine flying NATO flags and in a style more suited to the Supreme Commander of NATO than a purchaser of clandestine equipment.

Belgian authorities are, as they say, investigating. TED.

Step Attenuator ex A.R.T.

Having recently purchased a well-used copy of 'Amateur Radio Techniques' by Pat Hawker, G3VA,

David has been smitten with the desire to improve the strong signal handling capacity of his EC10.

He says that this set can benefit from the use of a step attenuator in the aerial feedline. Using just a fixed 12 db attenuation he has found that it is often possible to winkle out lower strength signals which were simply 'not there' without this attenuator.

They suffered from the effects of those multi-megawatt transmitters so favoured by many third world countries. The circuit he is using appears on page 94 of the A.R.T. book in figure 62. (*Which Edition? – Graeme*) Nothing super difficult about it and it has been constructed inside a small diecast box. Just a co-ax socket at each end and the four double-pole double-throw toggle switches on the face of the box. This enables the whole thing to be properly screened when the lid is fitted.

Used with the EC10 and a good resonant aerial there appears to be little improvement with less than 9 db of attenuation and not enough signal with above 24 db, so he favours either 12 or 18 db.

The use of this little box has made the task of the AVC circuit in the EC10 much easier and has lightened the load on David's ears too. TED.

Don't Blame the Zener

As there have been some mentions of late in Newsletters regarding stability and Zeners, Jim writes in to say that he has had some recent experiences of a lack of stability on his EB35.

Having proved to his own satisfaction that the problem of poor frequency stability WAS due to unstable local oscillator voltage he set about curing this. Tests done on the Zener circuit showed that whilst the Zener tested okay the series dropper resistor was almost twice its marked value.

Given that these small resistors are not renowned for their DC current-carrying capabilities he was not too surprised to find that the resistance was high. It always does go high, of course, not low.

What happens then is that the current flow permitted at the Zener's voltage is reduced, or alternatively the circuit load takes so much current that the voltage across the Zener is insufficient.

Simply replacing the resistor with a new MODERN resistor of adequate power rating will almost always cure the instability problem.

Jim wonders how many folk have gone to the trouble of buying and fitting new Zener diodes when the problem has been a duff resistor? Probably quite a few.

He points out that old resistors which DO carry a DC component should always be checked on a DVM. You may be shocked how many are out of tolerance. Valve circuits can usually accept this but semicon circuits are current-driven devices and cannot cope so well. ★



SEND YOUR
LETTERS TO
TED
CARE OF
Jim Murphy
63 Wrose Road
Bradford
BD2 1LN



The Early History Of Eddystone

In previous episodes we traced the history of Stratton & Company from a Birmingham Jeweller and pin-maker in the middle of the 19th century, through to Edwardian fancy goods and the First World War; and how the changes in fashion of the nineteen-twenties pitched the company into the latest craze of 'wireless', and the inception of Eddystone Radio. By the end of the decade amateur radio experimenters had opened up the short waves and Stratton's had taken the plunge as one of the first makers of high frequency receivers.

By 1930 the airwaves were beginning to hum with new stations from all over the world. The BBC leased the Marconi Company's high power short-wave transmitter at Chelmsford (G5SW) whilst they worked out their own design (to be built by STC two years later). British expatriates throughout the Empire were clamouring for a decent short-wave receiver to get the programmes from London. Eddystone's early designs, housed in timber, had proved splendid in the temperate climate of England, but turned to termite fodder in the tropics.

In the meantime, at Balmoral Works in Bromsgrove Street, Birmingham, Harold Cox, the technical director at Stratton's, had been busy producing the world's first bug-proof radio. It was housed entirely in diecast aluminium alloy, had integral screening and a screw-down lid. It used the latest screen-grid valve RF amplifier and plug-in coils: the first Eddystone "All World Four" had arrived. This set was the firm's main export product until the mid-thirties when a whole series of models burst forth, led by the "All World Eight".

IT PAYS TO BUY THE BEST

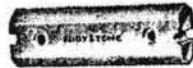


ADJUSTABLE BRACKET.

A strong base-board bracket for mounting components controlled by an extension rod. Has adjustable (2 1/2" to 3 1/2") slide of D.I.-9 H.F. insulation. No. 1007. Price 1/6.



EXTENSION CONTROL OUTFIT. Ample length adjustment is obtainable with the 4" non-warp precision-drawn insulating tube and 3" brass rod provided in this outfit. Complete with panel-lash and nut. No. 1008. Price 1/3.



BAR INSULATOR. An ultra high frequency insulator for strain or spacer purposes, made from Frequentite. Slotted ends for feeders with 2" spacing. No. 1017. Price 4/1d. each.

ULTRA SHORT-WAVE H.F. CHOKES.

These chokes are single layer spaced wound on D.I.-9 formers, and have an exceedingly low self-capacity. No. 1011. D.C. Resistance 1.3 ohms. Price 1/3. No. 1021. D.C. Resistance 0.4 ohms. Price 1/3.



INSULATING PILLARS Invaluable for mounting components in ultra short-wave receivers. White D.I.-10 insulations 7/16" diameter. Long GBA adjustable screw shank at top. N.P. Metal foot. No. 1028. 2 1/2" high. 6d. each. No. 1029. 1 1/2" " 4/1d. "



MIDGET INSULATOR. Made from Frequentite for high frequency work, with N.P. metal parts, 1" overall height. No. 1019. Price 4/1d. each.



UNIVERSAL S.W. VALVEHOLDER. A low loss holder for above or below baseboard use. The valve enters the contacts from either side. There is no measurable increase of self-capacity to that already in the valve base. D.I.-9 H.F. dielectric, one-piece noiseless contacts. No. 1015. 4-pin, 1/3. No. 1016. 5-pin, 1/6. No. 1024. 7-pin, 1/8.



MIDGET CONDENSER. A small-size variable condenser for S.W. circuits. Soldered moving and rotor vanes, with D.I.-9 H.F. insulation. With knob and seat, 3-65 m.mfd. No. 1013. Price 4/3.



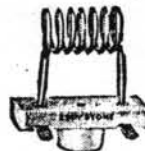
WIDE VISION VERNIER DIAL.

A precision dial for all purposes where accuracy and smoothness of tuning are required. 22:1 ratio entirely free from back-lash. Black bakelite case, 0-180° dial with travelling pointer. No. 975. Price 10/6.

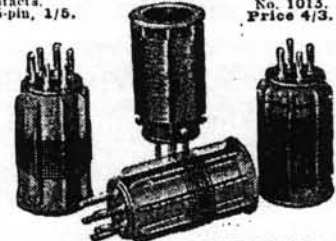


POINTER KNOB AND DIAL.

A direct control comprising satin finish aluminium dial engraved 0-100, with elegant shaped bakelite pointer knob. For 1/2" spindles only. No. 1027. Price 1/3.



ULTRA SHORT-WAVE COILS The coils are wound with 14g. copper wire, heavily silver plated. The mean diameter is 2". A Frequentite base is used for mounting purposes. No. 1020. 3-turns, 1/6. 4-turns, 1/6. 5-turns, 1/7. 6-turns, 1/8. 8-turns, 1/10.



INTERCHANGEABLE COILS.

New low-loss formers of D.I.-9 high-frequency insulation. Rigidly made and each coil matched. First-class results assured. 4-pin coils have two windings, 6-pin three windings. No. 959. 6-pin Set of 4, 12-170 metres. Price 16/-. No. 952. 4-pin " " " " " " " " Price 14/-.

EDDYSTONE SHORT WAVE COMPONENTS

STRATTON & CO., LTD., Bromsgrove Street, BIRMINGHAM. London Service: Webb's Radio Stores, 14, Soho Street, Oxford Street, W.1.

DESIGNED BY
THE SPECIALISTS
IN SHORT WAVE
APPARATUS



BRING IN THE WORLD

At Full Loud-speaker Volume!

The Kilodyne 4 is the voice of the world; it receives stations from every Continent and operates at loud-speaker volume. It opens up a vast new field of interest to the wireless fan.

Tunes down to 12 metres and is adaptable up to 2,000 metres, incorporates S.G. H.F. amplification, absolutely no hand capacity, perfectly smooth reaction, one-dial tuning, has been designed by short-wave specialists and praised by leading short-wave critics. It is supplied complete ready for any home constructor to assemble easily, or the individual components are obtainable separately.

TOTAL COST OF ALL PARTS (not including valves £6 17 6

Full constructional details and wiring diagrams for the "Kilodyne 4" are contained in the Eddystone short-wave manual.

Sole Manufacturers:
STRATTON & CO., Ltd.
BROMSGROVE ST.
BIRMINGHAM

London Service Depot:
WEBB'S Radio Stores
164, Charing Cross Road
W.C. 2

Tel. Temple Bar 2944.

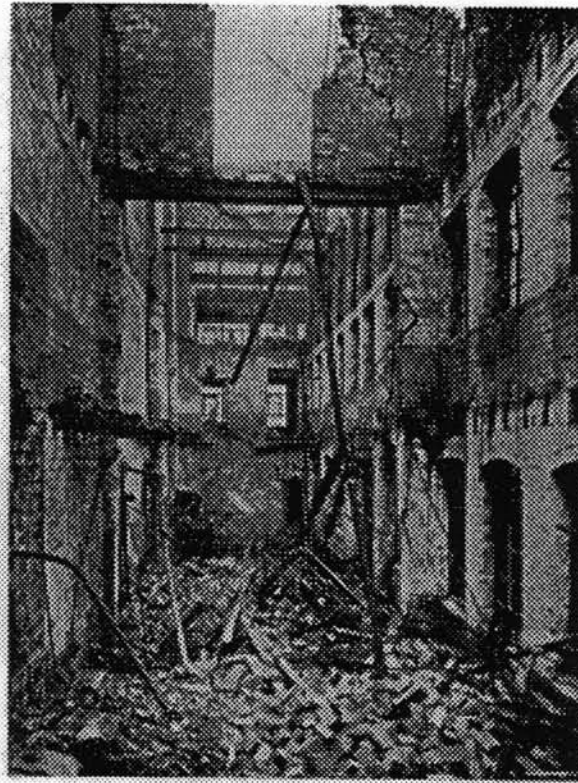
THE KILODYNE 4

EDDYSTONE

The home market was catered for by an ever-increasing catalogue of short-wave components for the home constructor, and a series of kits for the less adventurous listeners. The "All World Two" and the long run of "Kilodyne Four" kits led the field. A series of "Eddystone Short Wave Manuals" ran from 1932-47 in which countless projects were described.

By 1935 Stratton's research laboratory had entered the VHF field and produced a portable 56mc/s (5 metres) transceiver, probably the world's first "walkie-talkie". It was used by the Oxford University Expedition to Mount Everest in the Himalayas, where it was found to have a range of the order of five miles. The advantages of interference-free communication were obvious to the team at Bromsgrove Street but the authorities took some persuading. It wasn't until after the Munich crisis of 1938, when the war clouds were getting ominous, that the Metropolitan Police and Scotland Yard realised the very real dangers of total failure of landline communications. They ordered a complete 90mc/s VHF duplex telephone network to link all 95 police stations in London by radio. The workforce at Stratton's went into overdrive; 24 hours a day, seven days a week, and the system was up and running in July 1939, just six weeks before Hitler invaded Poland and Britain declared war on Nazi Germany. The system worked perfectly throughout the war. Several other urban police forces followed this example.

During the pre-war period the "Chain Home" (CH) Radio Direction Finding system (RDF - later to be known as radar) was being extended to protect our south and east coastlines. An important requirement was the ability to distinguish between friendly and enemy aircraft. A system known as

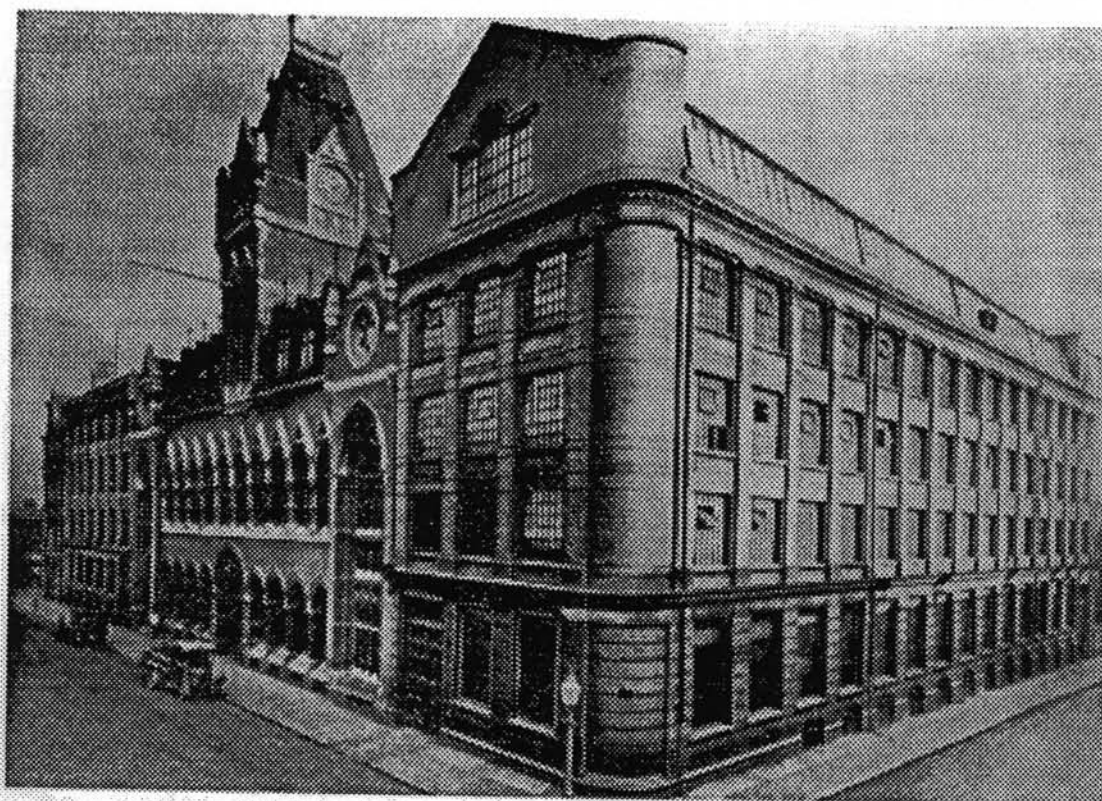


STRATTON'S RADIO FACTORY, BALMORAL WORKS, AFTER COMPLETE DESTRUCTION IN THE AIR RAIDS OF OCTOBER, 1940: Exterior and interior views.

IFF (Identification, Friend or Foe) was developed; each British machine carrying a transponder which returned a distinctive signal to the RDF operator. To achieve this effect over the range of frequencies used by RDF it was necessary to 'sweep', or frequency modulate the transponder. This was obtained by driving the split stator oscillator condenser at high speed via gears from the set's HT rotary transformer. A condenser of the utmost stability and reliability was required. It was designed by Stratton's in conjunction with the National Physical Laboratory and designated the Eddystone 339. Something approaching half a million were made.

During the period of the 'phoney war' (winter 1939/40), Stratton's still had time to breath, but after the fall of France things became serious. Large orders were placed with the company to manufacture the S.358 communications receiver in quantities never before undertaken. As the Battle of Britain raged in the south of England a production line was assembled in Balmoral Works. When Goering's Luftwaffe failed to achieve daytime air supremacy, the projected invasion of England was abandoned. A new tactic was launched; the night bombing of British industrial towns. Due to the Luftwaffe's use of advanced radio aids, they achieved instant success (unlike the RAF who were navigating by the stars for the first three years of the war!).

In one of the first air raids on Birmingham in October 1940, a German oil bomb hit the roof of Balmoral Works and in seconds the building was ablaze from end to end. The fire-watching team of three included Harold Cox and 'Pick' Pickard, G6VA. They constantly re-entered the blazing building and succeeded in bringing out almost all the technical equipment. Next day the salvaged equipment was moved to another part of J.R. & L. in Globe Works, about 200 yards away in Goch Street. By the end of three weeks production had been resumed.



THE GHOST OF GOCH STREET
GLOBE WORKS, 130,000 square feet
Before and after the Blitz, November 19th, 1940.



On the night of 19th November the Luftwaffe returned. 646 high explosive bombs, 19 land mines, and uncounted thousands of fire-bombs fell on Birmingham. Globe works was completely destroyed, being hit by no less than five bombs. Flames rose 500 feet into the sky and this time it was possible only to salvage two signal generators, a test oscillator and a Q-meter. On the same night another of J.R. & L.'s factories, Alexandra Works, was destroyed, leaving only their Leomister Works standing. Three nights later, on the 22nd November, 870 H.E. bombs hit the city and that was gone too. Four out of the four factories which formed J.R. & L. were gone.

But, remarkably, on the day after the raid of the 19th November, the chairman of the company, George A. Laughton, had gone touring the outer fringes of Birmingham, searching to find premises to start again. He found a derelict Lido at West Heath, known as 'The Bath Tub'. The Air Ministry immediately requisitioned the premises and only hours before the raid of the 22nd November a lorry load of equipment, including the radio test gear, was moved out there. This was the third time that this radio equipment had been saved.

To add insult to injury, at the end of 1940 the company's London office and warehouse in Hamsell Street, together with all stock and equipment, went up in flames in the great 'blitz' on the City of London. After this the London office was moved to 14 Soho Street, over the shop of Webb's Radio – itself part of the Stratton organisation. Later in the war this was badly damaged and had to be rebuilt!

Following this dreadful season of disaster, the workforce got cracking at the 'Bath Tub'. Eddystone Radio had been allocated the Ladies' Dressing Rooms and the Ballroom. To the surprise and delight of the staff they found that the bar in the ballroom was still fully stocked! Workbenches and fixtures were made from timber taken from the dressing cubicles and fittings of the swimming lido. Tools of every description were purchased from local ironmongers. Determined improvisation was the order of the day. Within a matter of 24 hours, workers were making jigs, tools and equipment so that production could start. Within three months production had outstripped the original pre-blitz figures.

In next month's final episode of 'The Early History of Eddystone' we learn some of the secrets of wartime production at the 'Bath Tub'.

THE SMOKE THEORY

"A theory has recently been postulated asserting the great importance of smoke to the functioning of electrical components in Eddystone receivers. According to this theory, it is smoke which makes components work because every time you let the smoke out of the component, it stops working.

Like many discoveries, this one has eluded the great minds of our time by its very simplicity. Of course smoke makes all things electrical work! Remember the last time smoke escaped from your Eddystone receiver? Didn't it stop working?

On a system level, a wiring harness carries smoke from one device to another, and when the harness springs a leak, it lets the smoke out of everything all at once, and then nothing works. Some systems require larger quantities of smoke to operate properly – that's why the wires going to them are bigger . . . "

ANON.

“Eddystone Specified”

A Series of Articles featuring Constructional Projects
In which the use of Eddystone Components is specified.

This is the set I saw found at a recent swap meet. See EUG 59 Page 7

3 Valve V.H.F. Straight Receiver

This receiver is eminently suitable for newcomers to very high frequency work and for those who, for any reason, do not wish to adopt the more complicated superheterodyne type of receiver. Being fairly small, compact and well protected in its steel cabinet, it also lends itself to portable operation.

The receiver is moderately simple to construct, is free from the vices often met in V.H.F. receivers and it requires only modest power supplies. Whilst perhaps not equal to a good superheterodyne, the sensitivity of the receiver is excellent and the noise level low, due largely to the special valves and circuits embodied in it. Provided a good aerial system is used, signals can be received over comparatively long distances — during tests, a prototype receiver has brought in 60 Mc/s. signals from stations over 100 miles away, under average conditions. The receiver may also be used for reception of television sound signals.

The illustration at the heading of this article shows the handsome external appearance of the finished receiver.

GENERAL DESCRIPTION.

The circuit, Fig. 1, comprises a tuned R.F. stage built up around a Mullard EF54 R.F. pentode a detector stage using an EF50 valve; and a single high gain audio stage. A gain control (the left hand lower knob) varies the screen voltage of the R.F. amplifier, since strong signals will tend to overload the detector, making C.W. signals difficult to read.

The R.F. circuits are of the balanced type discussed earlier. For the sake of simplicity and optimum performance, they are separately tuned. It would be difficult to gang the two circuits since a comparatively large value of inductance is used in the R.F. stage, giving maximum gain, whilst a small one is employed in the detector stage, to give, in conjunction with the trimmer C20, a fair amount of bandspread, without which tuning would be unduly critical.

The detector circuit is a little unusual. Reaction is obtained via the screen grid of the EF50 and is



controlled by varying the screen potential. In any straight V.H.F. receiver it is difficult to prevent the reaction adjustment varying the frequency and this particular method affects the frequency only slightly, at the same time giving smooth control. The latter is very essential in a receiver of this type, depending on regeneration for its sensitivity.

The third valve is a non-microphonic R.F. pentode, giving, in this particular application, high audio gain. Coupling between it and the detector is by the medium of a parallel fed transformer. The type specified gives a high step-up ratio and has the advantage of small physical size. The audio stage gives ample output and consumes very little current. Coupling to the output jack is by the choke/capacity method and is suitable for high resistance telephones. The receiver is not intended for loud speaker use — for this purpose, a small additional amplifier is necessary.

Whilst the receiver is primarily intended for operation on the 60 Mc/s. amateur band, it is capable of covering frequencies over an approximate range of 70 to 25 Mc/s. by plugging in suitable V.H.F. coils from the Eddystone range.

If employed in conjunction with a transmitter, it will be necessary to mute the receiver during

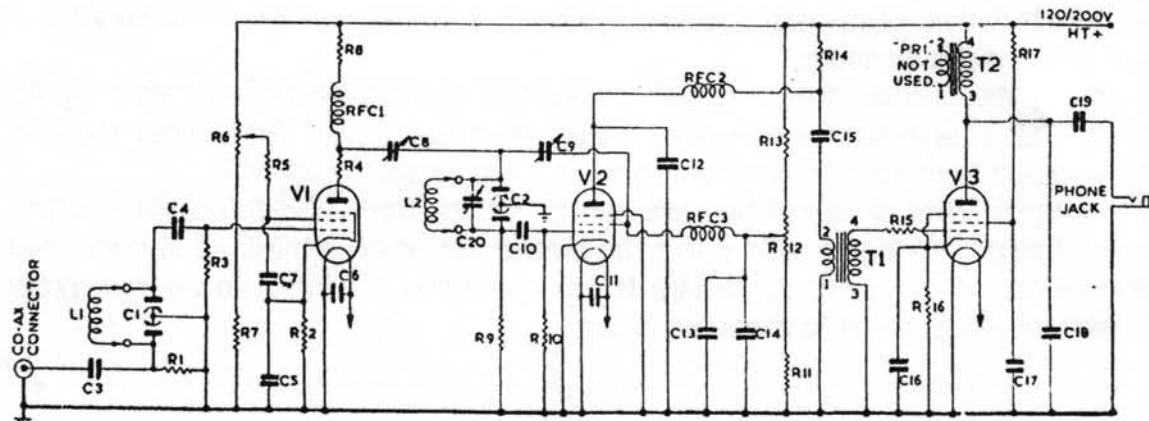


Fig. 1. Circuit diagram of the V.H.F. Receiver.

hold together the cabinet and the chassis, the holes in the latter being suitably tapped. Alternatively, the holes for the two potentiometers may be made $\frac{1}{8}$ " diameter and the potentiometer fixing nuts used also to secure the chassis to the cabinet.

OPERATING THE RECEIVER.

For normal use, a small mains power unit delivering 20 mA at 200 volts and 1 ampere at 6.3 volts will prove satisfactory. During portable operation, the low tension supply will usually be derived from a 6 volt battery whilst the high tension supply may be from a vibrator unit, a small rotary converter or even from dry batteries. As a matter of interest, quite good results are obtainable from a 120 volt dry battery but it is then necessary temporarily to short circuit resistor R13 and increase the capacity of trimmer C9.

Preliminary adjustments are necessary for trimmer C8, which controls the degree of coupling between the R.F. and detector stages, and to trimmer C9, which is the preset reaction control. These adjustments are to some extent dependent on each other. With C8 set at a low value and the reaction potentiometer about two thirds advanced, adjust C9 until the detector valve oscillates. Then rotate C1 to resonance, indicated by an increase in noise level. If resonance is indeterminate, increase the capacity of C8. If, on rotating C1, the detector is pulled strongly out of oscillation, reduce the setting of C8. With a little experiment to the adjustments of C8 and C9, it will be found possible to attain settings which result in the resonance of C1 being sharp without unduly pulling the detector stage and which give smooth reaction control. Once set, further adjust-

ment of the C8 and C9 is unnecessary except perhaps at the extreme ends of the total frequency range. During the adjustments, the aerial should be connected to the input socket.

Thereafter the receiver handles in identical fashion to a straight regenerative one working on ordinary high frequencies. The detector stage should be kept in the just oscillating condition and the R.F. tuning condenser adjusted to resonance. Careful tuning will, of course, be necessary to bring in weak signals but once found, it is easy to hold them, since frequency drift is negligible.

The coil in the R.F. stage will always be larger than the one in the detector stage. For use on 60 Mc/s., the former should be an eight turn coil and the latter a three turn one. It is difficult to give a definite setting of the main tuning dial, since this will depend on the amount of trimmer capacity. The setting of the R.F. tuning dial is, however, an approximate guide to the amateur band. Adjust this to 29° with the main tuning dial at 50° , and rotate the trimmer condenser until the noise level peaks, indicating resonance. The amateur band covers about fifteen degrees of the main dial.

For reception of the television signal, a ten turn coil should be plugged in to the R.F. stage, resonance occurring at about 70° . In the detector stage, either a five turn coil with a good deal of trimmer capacity or an eight turn coil with very little, may be used.

To receive the 10 metre band, a 10 turn coil, with a 15 pF fixed ceramic condenser soldered in parallel, will be required for the R.F. stage and another 10 turn coil, but without a padding condenser, in the detector stage.

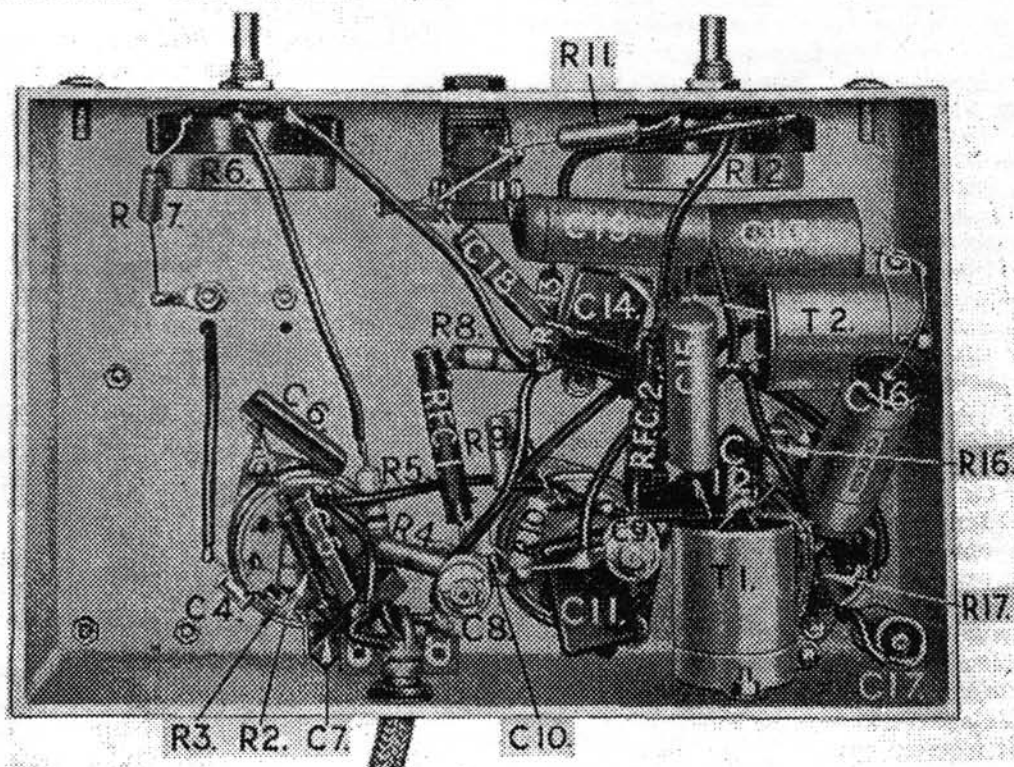


Fig. 3. Annotated photograph of the receiver chassis, from below.

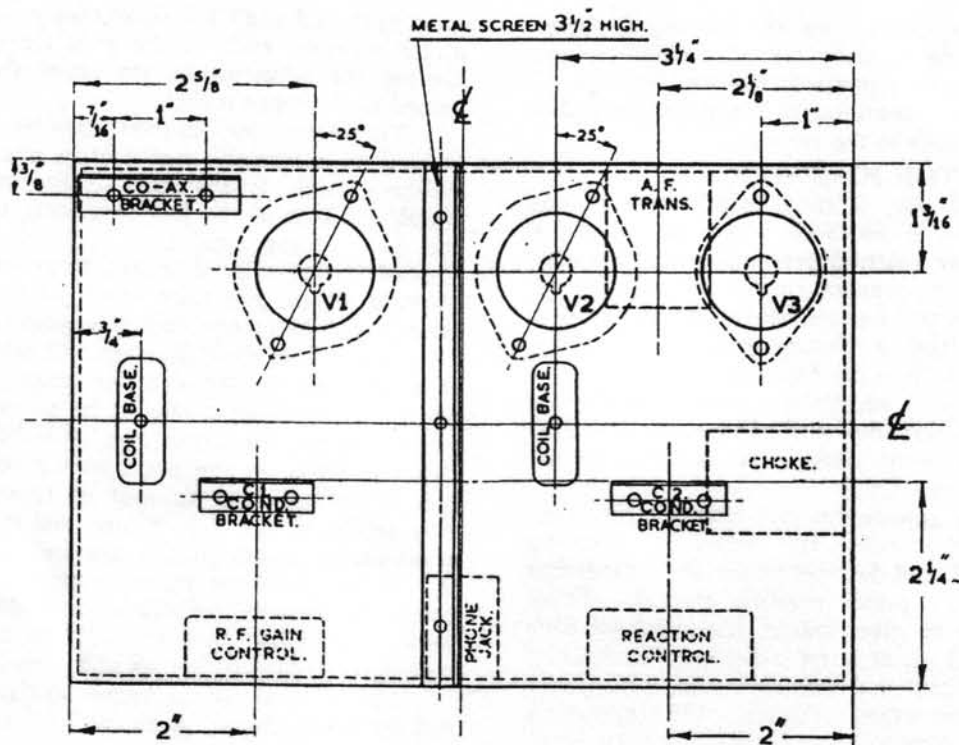


Fig. 2. Plan of receiver chassis.

periods of transmission. This can be done by fitting a single pole switch in a convenient position and wiring it in series with the H.T. supply.

CONSTRUCTION.

A diecast aluminium chassis forms a rigid foundation upon which the receiver is built and ensures both electrical and mechanical stability—factors essential to any receiver but particularly so to one operating at very high frequencies.

Exact details of the chassis layout are given in the drawing, Fig. 2, which also shows dimensions of the screen between the R.F. and detector stages. Two brackets are required for the variable condensers, details being given in Fig. 5. These parts should be made of stout brass, at least 18 S.W.G. and preferably thicker. It has not been found necessary to fit screens beneath the chassis. The bracket for the coaxial aerial socket is identical with the one illustrated on page 9.

Two forms of construction of the tuned circuits are possible. If it is intended to cover the full range of frequencies, the coil bases are fitted alongside the tuning condensers, allowing a small clearance between the coils and condensers. Connecting wires are thus kept very short. If reception is to be restricted to one band of frequencies (e.g., the 60 Mc/s. band or the television sound on 41.5 Mc/s.), the appropriate coils may be soldered directly across the upper lugs of the tuning condensers. Note that holes $\frac{1}{4}$ " diameter are required in the chassis for leads to pass through from the tuning condensers to the grids of V1 and V2 and to the anode of V2. A further hole is required near V3 to take the connection to its top cap.

The under-chassis photograph, Fig. 3, gives details of the location of the various components beneath the chassis. The majority of the small components are held by their own wires, tag strips being fitted where necessary to ensure firm support. The little additional wire necessary may be 20 S.W.G. tinned copper enclosed in insulating sleeving.

The method of mounting the small trimmer condensers will depend on the type employed. The ones recommended are Philips concentric trimmers of 10 pF maximum capacity and these may be held in the wiring providing the latter is stiff. If smaller ones are not obtainable, the 30 pF Philips trimmer may be used but the adjustment will be somewhat coarse. Small Wearite air trimmers, of 30 pF maximum capacity, are also available and are provided with mounting holes. These may be fixed to the chassis with 6BA bolts, using spacing pillars to reduce the stray capacity to earth. As a last resource, the usual small mica compression trimmer can be used quite successfully although again adjustment will be somewhat coarse. The trimmer associated with the detector tuned circuit should be soldered directly across the two stators of the variable condenser in a position which allows of easy adjustment. The photographs, Figs. 3 and 4, will assist in making these points clear.

At the rear of the chassis will be seen the tag strip to which H.T. and L.T. connections are brought and from which a three way cable to the power unit is taken through a hole in the chassis.

Holes $\frac{3}{4}$ " diameter are required in the front of the cabinet to give clearance to the potentiometer spindles and to the telephone jack. Two 2BA screws

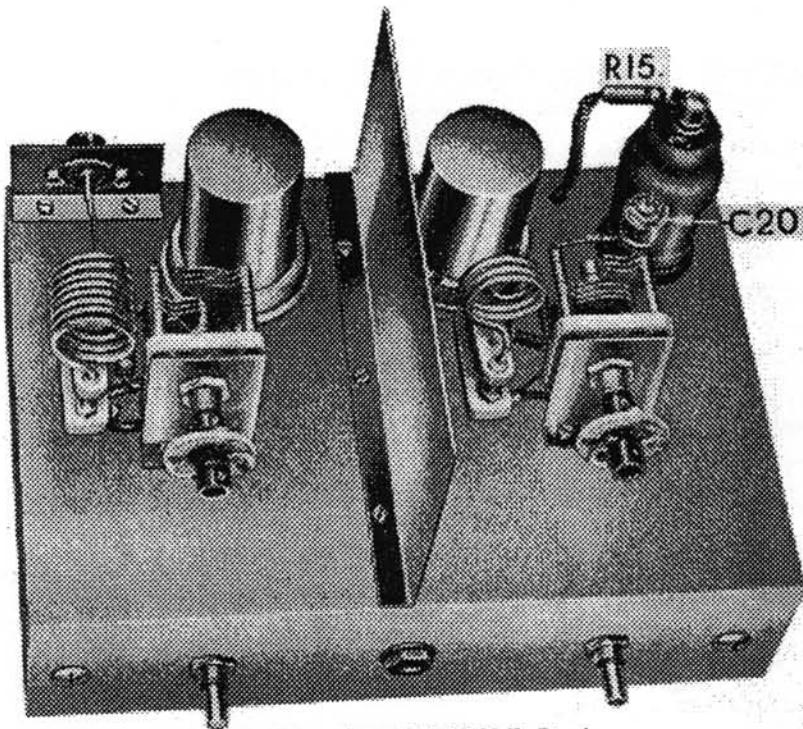


Fig. 4. Upper view of the V.H.F. Receiver.

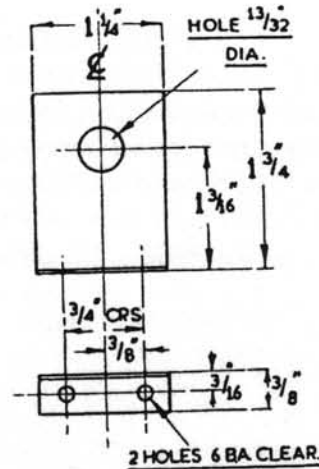


Fig. 5. Condenser mounting bracket. This is used also in the Short Wave Two Receiver and in the Heterodyne Frequency Meter.

AERIAL COUPLING.

The method of coupling the aerial to the receiver by a very small condenser (C₃) is a good one for general purposes, since it is equally suitable for a long wire aerial or for low impedance feeders. The former should preferably be an odd number of quarter waves in length, and for portable operation in the 60 Mc/s. amateur band, an aerial 12 feet long overall

— 4 feet arranged vertically and 8 feet horizontally — will be found effective.

An alternative method of coupling is to arrange a single loop of insulated wire centrally around L₁, one end being connected to the inner of the aerial socket and the other to a tag fitted beneath a fixing screw. This method is convenient when the tuning coils are soldered in position.

LIST OF COMPONENTS.

EDDYSTONE.			
1 Diecast Chassis	.. .. .	Cat. No.	643
1 Metal Cabinet	.. .. .		644
1 Slow Motion Drive, 2-inches, Black	.. .. .		597
1 Vernier Slow Motion Drive, 3 1/2-inches, Black	.. .. .		594
1 Variable Condenser, Split Stator, 25 x 25 pF (C ₁)	.. .. .		583
1 Variable Condenser, Split Stator, 15 x 15 pF (C ₂)	.. .. .		476
1 V.H.F. Coil, 8 turns	.. .. .		604
1 V.H.F. Coil, 3 turns	.. .. .		601
2 V.H.F. Coil Bases	.. .. .		606
2 Flexible Couplers, medium	.. .. .		529
1 R.F. Choke (RFC ₂)	.. .. .		1010
2 R.F. Chokes, V.H.F. Type (RFC ₁ , 3)	.. .. .		1011
2 Instrument Knobs, 1 1/2"	.. .. .		592
MISCELLANEOUS			
2 Valveholders, B9G, Ceramic, with locking rings and retainers (L500/C and L568)	.. .. .	Belling-Lee	
1 Valveholder, Octal, Bakelite.	.. .. .	
1 Coaxial Socket (and Plug to match) (L604/S and L604/P)	.. .. .	Belling-Lee	
1 A.F. Transformer, Hyperloy, type 230 (T ₁)	.. .. .	Wearrite	
1 A.F. Transformer, Hyperloy, type 208 (T ₂)	.. .. .	Wearrite	

1 Closed Circuit Telephone Jack.	.. .. .	Mullard
1 Valve, Type EF54	.. .. .	Mullard
1 Valve, Type EF50	.. .. .	Mullard
1 Valve, Type EF37	.. .. .	Mullard
CONDENSERS.		
1 Ceramic, 3pF (C ₃).	.. .. .
2 Ceramic, 40 pF (C ₄ , 10).	.. .. .
7 Moulded or Silvered Mica, .0003 mF (C ₅ , 6, 7, 11, 12, 14, 18).	.. .. .
3 Tubular Paper, .1 mF (C ₁₅ , 17, 19).	.. .. .
1 Tubular Paper, .5 mF (C ₁₃).	.. .. .
1 Electrolytic Bias, 50 mF 12 volt (C ₁₆).	.. .. .
3 Miniature Trimmers, 10 to 20 pF max. (see text) (C ₈ , 9, 20).	.. .. .
RESISTORS.		
1 22 ohm, 1/2 watt (R ₄).	.. .. .
1 150 ohm, 1/2 watt (R ₂).	.. .. .
1 470 ohm, 1/2 watt (R ₈).	.. .. .
2 1000 ohm, 1/2 watt (R ₅ , 16).	.. .. .
5 20,000 ohm, 1/2 watt (R ₁ , 7, 9, 11, 13).	.. .. .
2 47,000 ohm, 1/2 watt (R ₁₄ , 15).	.. .. .
1 100,000 ohm, 1/2 watt (R ₁₇).	.. .. .
2 470,000 ohm, 1/2 watt (R ₃ , 10).	.. .. .
2 Potentiometers, 100,000 ohm linear (R ₆ , 12).	.. .. .



NOW AVAILABLE, NEW MANUFACTURE:
TUNING SHAFT BUSHES FOR EDDYSTONE VALVE SETS 1946-73
COMPLETE FRONT BUSH, REAR FIXING PLATE AND SCREWS
£6 INCLUDING POST/PACKING U.K.

Dave Simmons, Windana House, North Aston, Bicester, Oxon, OX6 4HX. Tel: 01869 347 504. E-mail eddyspare@onet.co.uk



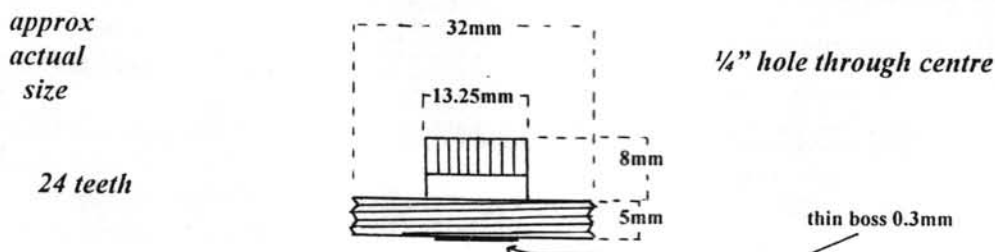
CHEWED-UP PLASTIC TUNING COGS - A SOLUTION

A few weeks ago I was at the QTH of a client who, in a remote Mid-Wales valley, restores pre-war cars for a living. Much exotic machinery passes through his hands - in recent months I've seen a 1750 Alfa Zagato, Lagonda LG6, Figoni & Falaschi bodied Delahaye 135, 3 and 4¼ litre Bentleys, 4.3 Alvis short chassis Vanden Plas tourers, a couple of Invictas plus many smaller Alvises, Rileys, GNs, Aston Martins, loads of supercharged pointy-tail racers and so forth.

Tossed casually onto the bonnet of the Delahaye was a gear catalogue, browsing through this it struck me that it may be possible to have replacements made for those brittle plastic tuning cogs, the ones which are driven by the large brass anti-backlash wheel and which wind the tuning wire (that is, until it breaks and gets into the mesh thus breaking the teeth !) on the slide rule dial models. I got in touch with the company, sending them a damaged gear, they replied saying yes, they could make the gears but the price would be around £17 each for a run of 50. This seemed rather expensive for us EUGers, so I asked about their lengths of 'toothed bar', thinking that I could perhaps replace the damaged teeth section only. They agreed that they could indeed supply this and at a much more reasonable price, so I ordered a couple of lengths to play with. It's made of Delrin, whatever that is, it seems to be a nylon type of plastic and not at all brittle.

I began by carefully cutting off the toothed part of the cog with a fine hacksaw blade, cutting carefully round the perimeter and gradually working inwards, as it's obviously vital to end up with a flat surface at 90 degrees to the axis. Final trimming was done with a flat file, then an appropriate slice of toothed bar was cut off the supplied length, again trimmed to 90 degrees and attached to the gear with superglue. It had to be offered up a few times beforehand in order to adjust the overall length of the gear so that the solid part of the spindle is *just* proud of the gear, otherwise it won't turn. A ¼" hole was drilled through the new section, following through the existing hole in the gear. The end product not only works perfectly but the brown colour of the Delrin very closely matches the main body of the gear, an almost invisible repair.

Now, I don't know exactly which Eddystones the gear in question will fit, but from those receivers I have it seems that it will be relevant to most of the slide rule dial valve receivers such as the 840A&C, 670A&C, 888A, 940 etc. For the avoidance of doubt, as the lawyers say, I show below the exact dimensions of the cogs which the Delrin teeth will fit.



I have had the remaining length of bar line-bored and parted into 'ready to fit' slices of about 5mm (about 30 left), so if any members would like replacement sections of tooth I would be happy to supply them at a cost of £3 each or £5 for a pair plus a stamped addressed envelope (basic rates of postage, these weigh nothing). Any overseas members please use initiative, \$US, \$Aus & \$NZ are acceptable alternatives but in notes only, not cheques.

Anthony Richards, Castell Forwyn, Abermule, Montgomery, Powys. SY15 6JH

VERSATILE PCB

Having bought a nice enough looking ECIO receiver at a club sale this EUGer was shocked to discover that the battery box was rusted through and beyond restoration. There was no doubt that the poor state was due to corrosion caused by worn out and leaking batteries, the old carbon/zinc types do ooze a very corrosive goo when they are past their useful life.

No power supply came with the set, just this duff battery box. Not being any good at metal bashing, beyond the odd bit of bent aluminium, it was decided to look at other possible materials. A suggestion from another EUGer in a previous Newsletter mentioned the use of copper plated pcb cutoffs to make small chassis. This was a start as the junk box contained several chunks of glassfibre double-sided copper plated board. Checking dimensions it seemed possible to cut out from this the necessary pieces to manufacture an equivalent container to the dimensions of the old battery box. It was decided to make up such a box but to use it to hold a home brew mains psu, since no battery operation was contemplated.

Cutting the pieces out was not that easy, have you ever tried cutting this stuff? it blunts the hack-saw blades in two ticks, eventually it was found easier to scribe it on

both sides, deeply, and then simply to snap it along the scribe marks. The pieces then need to be tidied up along the edges with a good file or emery cloth. The six pieces, an outer cover was the largest piece and onto this with super glue were tacked the four sides of the 'box'. This was then tested for size by inserting into the rear of the ECIO. All okay then the four pieces were properly soldered together and then the whole box was carefully trimmed and smoothed. A very messy job.

At this point the piece destined to form a 'lid' was trimmed to size and the edges cleaned up so it could eventually be tack-soldered onto the box. The circuit for the psu was copied out from the ECIO schematic, a plan layout was drawn up using a mains transformer taken from a small defunct plug type psu. The other components were different too in that silicon diodes type 1N4004 were used in a bridge circuit with smoothing by a 2200 muf electrolytic. Suitably rated condensers were wired across both the input (mains) and the output (9 volts) windings of the transformer to reduce mains carried QRM. A modern zener diode with the requisite resistor was fitted with another condenser of 0.1 muf across the diode.

To allow the mains lead to be fed into the psu a hole was

drilled alongside the transformer and fitted with a grommet. For the low voltage output the original four way connector strip was wired up and screwed to the edge of the box as it had on the original.

Before fitting the lid the whole psu was fitted and tested, even 'soak' tested by leaving it powered up for several hours, no discernible heat was evident and the voltage remained steady throughout the test.

The last stage was to tack-solder the lid onto the box and to spray paint the whole unit a matching grey before putting it into service. Several weeks on the unit has proved its worth having been in use almost every day and evening. Once it was left plugged in to the mains overnight, off load, in error — without any problem, wasn't even warm.

Brain Power Next ?

From the author of the previous article on an ECIO psu we have the following comment. "Seemingly the average power dissipated by the human brain when deep in thought is about 14 watts! This is much more than say an ECIO, why cannot some of this power be detected in ISP waves?"

No, please don't bother to reply to this one, I think it is way outside of our remit...

★ Ted.



Poo's Ponderings

'Stray thoughts from an absent mind!'
by Simon Robinson G8POO

New Products - New Products - New Products

When restoring, repairing or simply maintaining your cherished Eddystone receivers it can often be difficult to locate the requisite parts or facilities. I have come across the items featured in this edition of Poo's Ponderings and feel you may find them useful too.

Is your crackle looking jaded and dull?



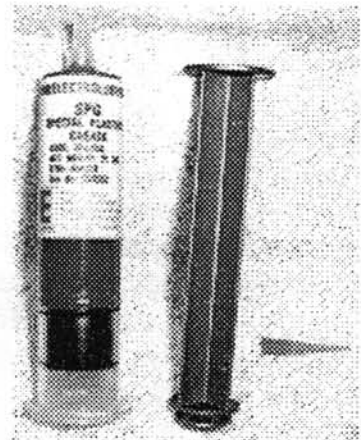
If so try **REFURB 140** which is a unique blend of silicones and resins, formulated to bring a rejuvenated finish to a wide variety of black and other dark, non-absorbent surfaces. It is quick and easy to use, giving a high-gloss sheen in a matter of seconds. Use it on TV cabinets, speaker casings, cars, radio cabinets etc... to provide a semi-permanent coating offering resistance to handling, wiping, moisture and sunlight.

I've used this stuff and it's great. Available from CPC.
Order Code: **SA00010** Price: **£2-32** Size: 400ml

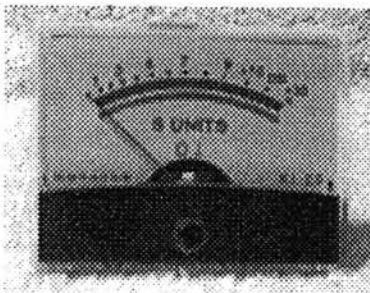
Better than Vaseline!

This special **PLASTIC GREASE** is ideally suited to lubricating Eddystone plastic pulleys and gears. It has been formulated to minimize damage to most plastics through chemical action.

Many regular products can irreparably damage certain plastics. They may be OK now, but what happens in ten years time? Spares may no longer be around. Available from CPC.
Order Code: **SASPG35SL** Price: **£4-67** Size: 20 ml



'S' Meter to go.....



At long last it is possible to buy a low cost '**S**' **METER** off the shelf, new. There are three sizes available each having a 3K coil resistance for 50 uA FSD. They are of reasonable quality but I've been unable to get the matching Back Light (they in fact light from the front) to fit the small meter. Let me know where I went wrong! With a suitable shunt you could use this in our recent project. Available from CPC.

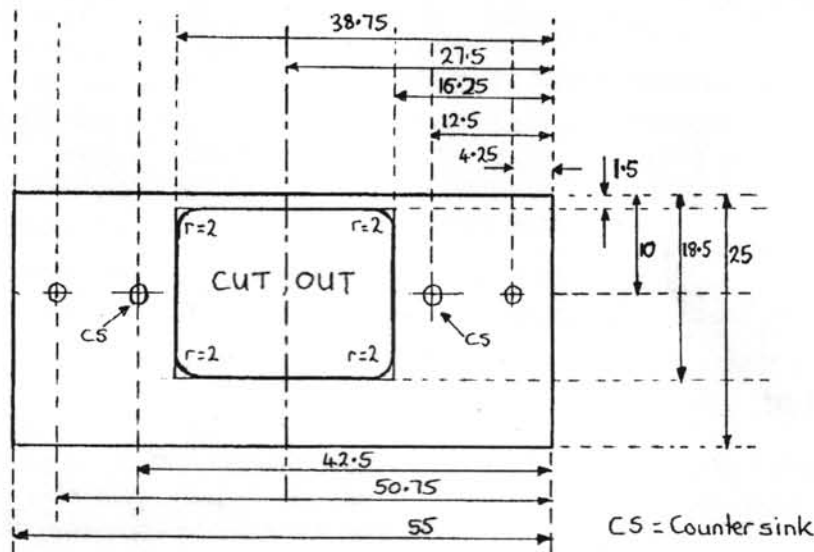
Size	Order Code	Price
60.3x46.3mm	PM11285	£5-15
85x64mm	PM11300	£5-85
110x83mm	PM11312	£7-69
Back Light	PM11191	(pack of 2) £0-72

Three Pin Connectors for your Radio



as the original socket.

Obtaining genuine three wire i.e. earthed, mains connectors for Eddystone receivers is now virtually impossible. I've seen all sorts of deadly arrangements in the past. I've just spotted these new items, which with a mounting plate will fit right in the same space



DIMENSIONS IN m.m.

Scale x 2

Material: Aluminium Sheet 1mm thick

Drill holes (4 off) L B.A. clear

CS = Counter sink

Suitable adaptor plate shown left. Available with mating lead from Farnell Electronic Components.

Chassis Socket
Order Code: **360-405**
Price: **£0-94**

Lead with bared ends
Order Code: **307-6362**
Price: **£2-29**

Lead with UK plug
Order Code: **307-6374**
Price: **£4-18**

The above prices exclude VAT and carriage. Both companies normally deal with commercial account holders only. You could always try asking your local TV and Radio repairer to order some for you. CPC can be contacted on 01772 - 654455 and Farnell Electronic Components on 0113 - 263 - 6311.

In our next issue I will be presenting various techniques you can use when renovating receivers.



National Vintage Communications Fair
N.E.C. BIRMINGHAM, Hall 11
SUNDAY 30th April 2000
Look for EUG at the sign of the Lighthouse

RADIO RAMBLINGS

Gottings from my Notebook


By

Graeme Wormald

G3GGL

STOLEN TO ORDER?

Is it just a coincidence, or is there something in it? A well-known vintage radio magazine carries a 'wanted' advert for an Enigma coding machine *'must be in good condition; good price paid. Phone Mike . . .'*

Three days after it drops through my letter-box an Enigma was stolen from Bletchley Park Museum. Mmm. Worth £100,000 according to the London Daily Mail. I'll bet Mike had a few phone calls from Scotland Yard.

I hope nobody advertises for an Eddystone 'All World Two'! Yes, they have those at Bletchley Park, too.

OLD-TIMERS' LINEUP

Having recently celebrated the Golden Jubilee of my callsign, I realise that I am now among that select band who were first licensed in the FIRST half of the LAST century! Being a natural snob, this has pushed my olfactory organ another few degrees upward.

Then I realise it's by no means the earliest callsign in EUG. We have more than one pre-war call...

However, I do know that I've got more candles than Ted, who makes no secret of being a 1933 product. I came along at the same time as the BBC's new high power North Regional transmitter at Moorside Edge, to wit 1931.

Now I always assumed that the patriarch of Eddystone was Bill Cooke, GW0ION, who, in spite of his neophyte callsign, arrived on the scene in 1919 (*according to revelations presented in 'The Cooke Report'*.) But now I've had a letter from EUGer Fred Penny of London. He is a product of the Great War, having first seen the light of day in August

1918. He built his first radio in 1930 and after W.W. II set up in business with a radio & TV shop.

Fred reckons he must be the Senior EUGer! Does anybody out there dispute him? Counterclaims (in confidence if preferred) to me, please. . .

TELEPHONE THIEVES

A new telephone scam is sweeping the country, according to Midland Police forces. If you receive a phone call from a person claiming to be an A.T.&T. engineer (or presumably any other phone company), then beware. He may say that he is testing your circuit and will ask you to press 9, then zero, then hash, (90#) and then hang up.

If you do, it will give him control of your line and enable him to dial overseas, chat lines, long distance - all going on YOUR telephone account. DON'T PRESS 90# FOR ANYBODY!

PERSONAL CALLSIGNS

In past years, aspiring licensees (ham type, that is, not victuallers) who wished to have personalised calls, such as their initials, had to wait until the alphabet came round. It could mean a very long wait.

I remember a colleague, a G8, passed his Morse test but wanted the same letters on a G4 call. He patiently waited for three years, by which time he had gone off the boil. To this day he has never owned an HF rig, but still works VHF regularly with his 'new' callsign!

What I'm getting round to saying is that now you may ask for any 'last three' combination which is still available. It doesn't matter how far down the alphabet it is, so long as nobody's beaten you to the post.

So no need for any aspiring M5s to hang around waiting for their personal call. Just get cracking! Call the R.A.

NEW CALLS ON THE BLOCK

Speaking of M5s, congratulations are due to our first members to upgrade. Mike Arnfield, G8RCG is now also M5ACS, and Jim McGowan, G1CUC, has become M5AIP. Well done chaps! The Morse code can be a daunting task at any speed.

Jim attended the last RSGB Morse Camp and got up to speed, passed his test, and got a new callsign, all in the same weekend. It sounds a first-class idea to me. The next one is due to take place at Potters Bar on 6/7 May, followed by Harrogate, Yorkshire, on 27/28 May.

Call Fiorina Sinapi at RSGB HQ for full details, on 01707 659015.

MORE AERIAL THOUGHTS

When I was first licensed I had no problems getting around the UK and western Europe on the LF bands with lowish horizontal aerials. But when I left home and set up shop with various quick-to-set-up verticals they were a miserable failure.

Then the penny dropped. I learned about propagation. Vertical aerials send out a signal which is travelling pretty well horizontally; at this stage purely ground wave which is hard pressed to get over 30 miles.

By which time it is passing a mile or two in the sky and hitting the reflecting layer of the ionosphere somewhere around 500 miles away and returning to earth another 500 miles further on.

In other words, fine for DX and local chat, but useless for inter-UK working. The problem is called skip distance. Many newly licensed hams may be tempted to spend good money on a commercial multi-band vertical, which covers 10 to 80.

DON'T EXPECT to work any UK stations further than 30 miles away with it. It's a DX aerial, not a UK aerial. I know, I've tried!

To work within these islands on 80 metres something fairly horizontal is required, but it DOESN'T need to be high. Ten feet will work. 15 or 20 might be better but it need be no

higher than the ridge of your roof. This has the advantage of not needing planning consent (and an application fee of £95!).

If, at this height, you can manage a centred 128 foot dipole, that's the easiest option. If you can't, then use a 97 foot end fed with a 65' counterpoise for an earth. Don't worry about straight lines; zig-zag it all over if you have to. Use a proprietary ATU with the latter, or use a home-brew single band 'L' matching network. But remember; the magic word is 'horizontal'.

CALL SIGN NUMBER PLATES

After ten years of promises the DVLA has finally come up with the offer of personalised vanity plates for old-timers! They have at last released the series 'G' 1 to 20 for sale.

After years of negotiation with the RSGB, and many false starts, it was finally announced in the national press last week, but not a word in the radio hobbies press! I ordered 'G3GGL' over the phone using 'plastic'. It arrived two days later! And this weekend I've seen a G3 and a G4 numberplate out and about.

Call DVLA Select Registration Hotline on 0870 6000 142 if you wish to order (Mon-Fri 8am-5pm). Or do an online search on www.dvla-som.co.uk to check availability and price (not cheap, but much cheaper than working via a dealer!).

NOW FOR THE BAD NEWS

Since we last increased subscriptions the price of paper has increased twice and the postal rates thrice. And the size of the newsletter has increased as well!

So it's only good housekeeping (although sad enough) to increase subs now before we have to cut back on anything. If you have a renewal form enclosed, the new rates are quoted. If you don't, then do nothing; just wait until you get one.

Look at it this way: the increase amounts to the cost of ten cigarettes, or a pint of lager. (Unless you are outside Europe, in which case it's twenty cigarettes or two pints). *Go on; you can make it!*

★

Graeme - G3GGL

A SAD EC-10

By Chris G3XFE

I'm writing to inform you of my recent findings of an 'exploratory' into an EC-10 which I was kindly given by a local amateur. Should you deem it worthy of inclusion in a newsletter if times get lean and desperation causes you to trawl through this kind of article from a very non-technical person such as me, then I think that there may be one or two useful points that have arisen.

Firstly having removed the outer smoke film from the case and cleaned the grimed-in control knobs, cleaned the dial very gingerly and 'wound-up' the anti-backlash gearing, I set about examining the electrics in the set. My reason for so doing was mainly due to low audio output, despite the RF and AF gains being set to fully clockwise. Even the strongest broadcast stations did not overload the set with the AGC OFF. As I tuned higher in frequency, the deafer the set became.

Initial examination revealed that there were 2 extra components not shown on the cct diagram. A 10K resistor and I think a choke, in series with and connected between the AGC switch contacts and earth. I removed these straight away. All voltages were within tolerances according to the grid in the manual. A signal probe applied to all stages working back from the loudspeaker showed amplification although the RF and mixer stages made little contribution to the overall signal. I had no OC1 71's to hand, understandably, but had many more up-to-date silicon devices. I unsoldered and lifted each of the screened leads off the PCB to each OC 171 on Graeme's advice that 'whiskers' may be the cause of the problem. No difference so far. I removed the RF and the mixer OC171 's and tried a few PNP devices in their place. I didn't want to start fiddling around altering biasing resistors as I wanted to keep the set as original as possible. When I tried a BCY71 in each stage the set burst into life.

Whilst the RF side of things seemed O.K. this did not, however, address the overall low audio output problem. There was no obvious visible sign of a problem. Out of sheer desperation I lifted one end of a couple of resistors. R43 was reading 17K instead of 12K and R42 was showing 61K instead of 47K. Had I coincidentally stumbled across the only 2 values that had gone

hopelessly high resistance. No such luck, I ended up replacing every single resistor in the set. All but 2 of the lower values had suffered the same demise. I used those close tolerance metal film types from Maplins. It is so nice to read the value off the resistor, put it across the meter and exactly the right value comes up on the digital display.

Some months ago, Graeme put me onto a BARTG circuit for a capacitance meter which he made and has since repeatedly praised its usefulness. As a result I made one. I have to endorse everything Graeme has said about this bit of kit. It is without a doubt the most useful thing I have ever made. Without it I would have had no idea that the only red 'Hunts' capacitor (C80) across the push-pull output transformer was very leaky and useless as was the 1.25 mfd electrolytic (C 75).

I re-aligned the set from end to end, put two 1N4004's back to back across the aerial input and then plugged my 45 foot Top Band vertical into it. Luckily I didn't blow the loudspeaker cones when I switched the set on as I was quick enough to dive for the gain control but what a difference. With minimum setting on the AF gain and RF gain backed off to stop overloading the BFO the receiver is now... .HOT!!!

I have since scoured the nation to find suppliers of OC171's. Having been quoted ludicrous prices, one firm wanted £3 each. When I complained, he implied what a bargain basement price it was as they were shown at £12.50 each in the Mullard book. Utter madness of course. Sanity ruled at last when I got around to phoning Birketts in Lincoln who had plenty of OC83's as well as OC171's all at 50 pence each. I bought 10 of each and had them in a couple of days. Excellent service.

CHRIS G3XFE.

TED's LAST LAP

Re-ISSUE 57

It has been pointed out to me that the diagram shown on pages 15 and 30 in Issue 57 may cause some confusion to EUGers who are unused to dealing with 'ancient' schematics of this type.

Taking page 15 first, the switch required is termed a 'three point switch' in the parts list but present day nomenclature would call this a double-pole single-throw switch with LT- going to one pole tag at the same end of the switch. The two tags at the other end of the switch would then be connected together and connected to the common chassis ground (earth).

Going to page 30 we have a similar switch circuit in figure 2 at the bottom of the page. The figure 2a is correct, using a double-pole single-throw switch, but the figure 2b is incorrectly portrayed. Both contacts should be shown open together, or closed together, and not as shown with one open and one closed. Thanks to Tom for this information. TED.

A DENT IN THE FRAME

James writes in to ask just how many of today's sets could have survived a 40 foot fall into a ship's hold, as the Eddystone Receiver (*model not stated, but actually a 556, the first production in 1946 after the War ... Graeme*) – which

Mr.A. A. Angus writes about on page 24 of the last issue (#59).

I can remember being told about one of the standard 'drop tests' performed on the 990 series before they were accepted for MoD use. This was to test them and then to drop them from a height onto a concrete floor and **then to re-test them!** I was told that the only damage sustained by a 990 when tested in this way was that the centre trim disc from the tuning knob fell out on the floor!!! TED.

RANDOM THOUGHTS

Travelling south down the A1 recently heading for a day out in Peterboro', I spotted the 'gate guard' aircraft outside RAF Wittering and I wondered just what model it was/is. It seemed to remind me of a Lightning going by the nose but I was not quick enough to check out the tail, can anybody help me here? Planes being one of my other interests.

On the same day I was idly window shopping in and around the town centre when I came across a shop window with a number of old model wireless sets on display, wood or bakelite cabinets or even more recent all-metal cases. If you live in the area then it might well be worth a visit; same goes for 'Allkit' on the Lincoln Road heading out of Peterboro'. This store has vast amounts of surplus

military clothing and kit, a veritable cornucopia for military buffs.

I guess that the high spot of my day was seeing a middle aged gent sitting on the banks of the River Nene using an equally aged IC2 to QSO through the 2-metre repeater with his pal. This made a change from the many cell-phones in use about town. TED

ENDIT

There have been several letters sent to me recently with comments about the changes in format of the Newsletter over the past few months. All have been highly complimentary and so I feel that I must point out that I have no part in producing the final product.

All the aforementioned changes are the work of Graeme, with help from Simon. I think myself that he has, and is, doing a superb job, so let us all tell him so! (*Gee, thanks, folks – Graeme*)*

Hope that you have enjoyed this, our 60th Newsletter, the end of 10 years of existence for EUG. ★ TED.



**My friend Geoff, who is a fully accredited printer, tells me that my layouts are absolute rubbish. But I'm learning fast! – Graeme.*

940 GREMLINS

When bought, this 940 looked good and worked well, obviously it had received lots of TLC during its lifetime and the finger plate was only very slightly worn around the tuning knob. Opened up as soon as it reached its new QTH the inside, both above and below chassis, was clean and dust-free. It had not been used in the months prior to purchase but when powered up the response was what one can expect from a 940. Good sensitivity and selectivity STILL able to cope on today's bands.

All went well for several weeks during which time the set was used on a daily basis for several hours each weekday and almost the whole of the two days at weekends. It was when the set was powered up first thing on a Sunday morning that the problems started. The increased hum level and lower-than-usual output came as a first indication that all was not well. Before the set could be reached to switch off there was a short sharp 'crack' followed by smoke and a horrendous pong, even after the mains switch had been reached and the power cut there continued a soft hissing noise.

All thoughts of a quiet morning's listening were abandoned and preparations made to inspect the 940's innards.

Given the pristine outside condition of this set a large duvet was spread over the table before tipping the set onto its front so as to remove the four screws holding the case. Once removed the main problem appeared to be in the area of the power supply as there was a fair amount of white powdery deposit in that part under the chassis - the smoothing condenser(s) evidently. Clearing most of this with the Hoover

and a clean paint-brush seemed to take forever but eventually it was possible to see the puncture mark in the rubber seal of the electrolytic.

Nothing else appeared to be damaged and after some continuity tests a couple of wire-ended condensers were tag-soldered in for a power test. With some apprehension the set was powered up and all appeared once more to be okay with volts more or less as per the specification sheet. The duff condenser block was removed and a proper job made of soldering the temporary replacement in situ. The big problem now is to locate a replacement of the correct capacity, voltage rating and physical dimensions. Several sources have been suggested and these leads will be followed up.

Whilst the 940 was out on the bench, and bearing in mind comments from previous Newsletters, all of the paper insulated type decouplers were checked, as were the fixed value resistors. None of the condensers show any sign of leakage although one or two do appear to have cracking on the outer case. Several high-value resistors are near to, or on the limit of their designated tolerances. Notes have been made and suitable resistors will be sourced for these items.

One anomaly that has been noticed is that all of the valves have been stamped with CV numbers, although they also bear normal manufacturers' markings. None need changing as is apparent from the general liveliness of the set. Drift, as checked by leaving the 940 tuned to WWV over several hours, is minimal.

DAVE.

EUG MEMBERS' FREE ADVERTS

WANTED: Model 840 (half moon) also any MIMCO sets, working or not. Cash, or swap/part exchange for 880A, 680X, diecast 'speakers, etc. Still need 640 mains transformer, or burnt out one for rewind. Call Richard on 01789-293375 or e-mail g0ogn@aol.com

WANTED: Model 670C ('C' model only) Marine Cabin set in nice external order; need not work, Call Graeme G3GGL (Worcestershire) on 01299 403372, or e-mail g3ggl@euphony.net

FOR SALE: Eddystone 840A H.F. Receiver. Good Condition and in working order on all bands. Complete with rounded diecast feet and separate mains filter (type 732). Offers considered around £120. Buyer Collects. (Berkshire) Call Michael G3LRQ, QTHR, Tel: 0118-934-5823 . . . e-mail michaelhumphries1@computerserve.com

FOR SALE: Marconi Pacific Rx, alias EDDYSTONE 1837/1S. perfect working order, complete with copy of workshop and user manual; very good condx except for a few paint chips around outer edge of front panel. £250 or very near offer, or consider a deal with a very nice Eddystone 830. Call Dave on 01554-775790 (S. Wales) or e-mail MW1DUJ@AOL.COM

FOR SALE/EXCHANGE; EC958/7 (digital rx) V.G.C. in cabinet, with 1533 FSK module. £180. 2 x 990R RXs one good condx, one fair, working condx, both in original cabinets, £100 the pair. EC 964/7 & 1964/1 RXs. Good condx, mounted in smart cabinet, £60. All above complete with manuals. Would prefer to exchange all above for AOR 3030 Rx with Collins SSB filter. Also for sale AR88 V.G.C. with set of spare valves & handbook. £90. Call Keith Quarman, G8CBE (Hemel Hempstead) 01442 249782.

FOR SALE KENWOOD R5000 Rx £400 or Japan Radio NRD-535 Rx with matching speaker boxed as new £750. (Half cost price) Both Mint condx. Also Global ATU £25. Would deliver 50 miles: Tel: Mike (Sheffield) 0114 2585937.

WANTED: 10k 100watt AND 10k 75watt wire/wound pots. Call Ron, G8URU (Cumberland) 01697 748 672.

FOR SALE: EC-968 £250, 740 £80, S750 £90, EC-10 £70, Waxed/tropicalised box of accessories, brand new & unused, includes high current and voltage shunts for use with Ministry Test Set No. 1 (AVO-8)... £25. 01923 250673 Or e-mail g3gxe@yahoo.com

FOR SALE: EDDYSTONE RADIOS: 659/670- restoration project complete with a second set for spares - £35. 640 - working but needs some TLC - £65. 640 - working but needs a little more TLC - £45. EC10 Mk II - works well but needs a little exterior TLC - £75. 840C - beautiful condx and working order - £145. 830/9 - G.W.O. - £275. 830/9 - as previous but this was in console and back is missing - £245. 990R - nice condx and working order - £150. 770R - complete but untested - £60. 940 - good condx & w.o. (but rear case could benefit from painting - £195.

OTHER RADIOS: Hallicrafters SX25 Super Defiant - fair condx but needs TLC - £125. Drake R4C - good condx & w.o. - £245. Yaesu FT200 HF Tcvt - a great valve rig c/w psu - £125. Yaesu FT200 - as previous but condx not as good - £85. KW2000B - classic HF radio c/w psu in great order and condx - £135. I also have lots of other eqpt such as sig gens, digital frequency meters, 'scopes, VHF gear and books. SAE for list.

WANTED: I will trade any of the above sets or pay real money for the following sets: Eddystone Models 680 (with half-moon dial, NOT the 680X), 556 (half-moon b'cast set), 659 (NOT 659/670, the 659 has a magic-eye), 710 (All World Six), 888 (not 888A), 890, 910, 670C (MUST be 'C' version), EM34, 930 (any models), 880 Mk I. **CALL SIMON, G8POO on 01434-633913 if you are interested in any sets or if you can help with my 'wants'.**

The Eddystone Light

Me father was the keeper of the Eddystone Light
and he slept with a mermaid one fine night
From this union there came three;
A porpoise and a porgy and the other was me!

*Chorus: Yo ho ho, the wind blows free,
Oh for the life on the rolling sea!*

One night, as I was a-trimming of the glim
Singing a verse of the evening hymn
a voice on the starboard shouted "Ahoy!"
And there was my mother, a-sitting on a buoy.

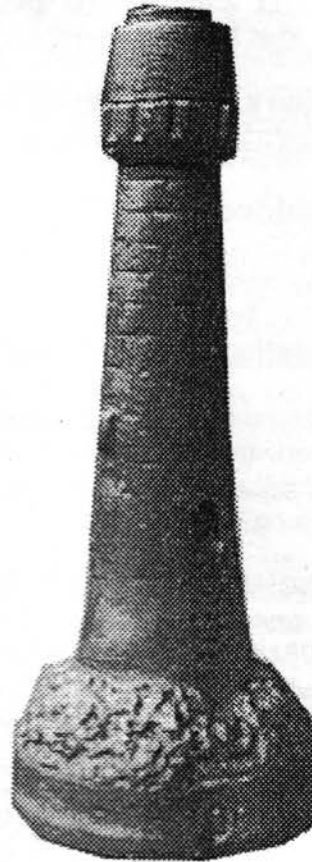
Chorus

"Oh what has become of my children three?"
My mother then she asked of me.
"One was exhibited as a talking fish
the other was served from a chafing dish."

Chorus

Then the phosphorous flashed in her seaweed hair.
I looked again, and my mother wasn't there
but her voice came echoing back from the night
"To Hell with the keeper of the Eddystone Light!"

Chorus



PROTOTYPE – FOR ILLUSTRATION ONLY

To celebrate the 10th Anniversary of The Eddystone User Group we have commissioned a beautifully hand crafted model of the famous Eddystone Light. A limited edition of THREE HUNDRED pieces will be available, one for each member.

Standing just short of seven inches tall, each Eddystone Light is finished in cold cast bronze and is inscribed "EDDYSTONE USER GROUP TENTH ANNIVERSARY" with its serial number on the base.

This model will no doubt become a collector's item and is offered to members at *cost price*. Each Eddystone Light is priced at £10-00 including postage and packing.

To order your Eddystone Light please send a cheque or postal order for £10-00 made payable to Simon Robinson at:

The Eddystone Light, P O Box 66, Corbridge, Northumberland, NE45 5YR

Please note that this is a one-time offer – no 'extras' will be produced. If any remain they will be made available to the general public at the NEC in April.

Don't miss out...