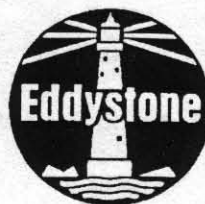
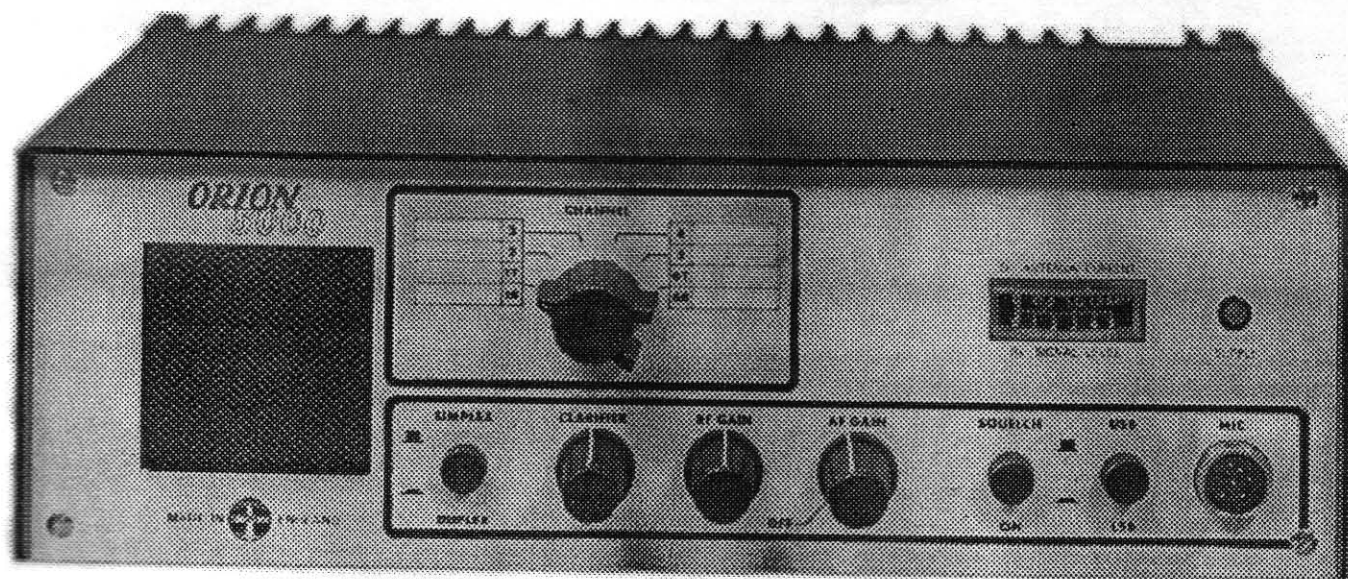


# Eddystone User Group Newsletter



Issue No: 52

December 1998



## Featured Model - HF SSB Transceiver ORION 5000 Series

- A non profit newsletter for Eddystone Users
  - Compiled and edited by Ted Moore
- Information quoted from Eddystone Literature by kind permission of Eddystone Radio Limited
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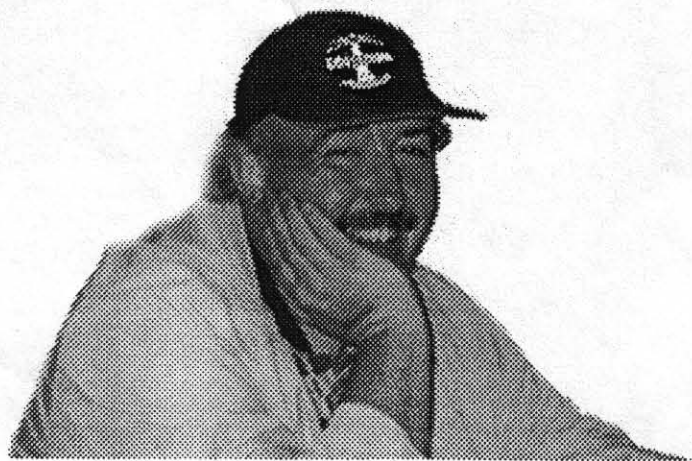
Another bumper issue of our favourite Newsletter with even more variety. And as the old year draws to a close we see more change. Only three Newsletters back we welcomed Duncan Whittle as the new MD at Eddystone Radio, and now we are wishing him the best of luck as he, in his turn, moves on to pastures new. Thank you, Duncan, for continuing the tradition of co-operation between the Company and the User Group. Stepping up into the top position is Matt Parkes, a long time Eddystone man who will no doubt be as supportive as his predecessors. We wish Matt all the best with the challenges that face him. The Marconi Group that own Eddystone is undergoing all sorts of major restructuring and rationalisation now that it is part of what was GPT.

On page 33 of this issue, I see that a member has written to Ted enquiring about the fate of G6SL (Stratton Laughton) callsign. This was originally issued to the Company as 6SL for experimental purposes in the 1920's. Geoff Woodburn was the keeper of this callsign for many years and when he left the company I took it over and held it for about 10 years. After I left the company, there was no class A licence at Eddystone to take it over, so I was asked if I would continue to act as holder on behalf of Eddystone Radio and so I still have it. After the experimental years the callsign was used by the Eddystone Amateur Radio Club and has been activated from time to time for special events in latter years. I last used it on the EUG 'First Thursday' net in July 1997. It feel it is important that this callsign is kept alive and I would like to find a way of it being assigned to the EUG in the near future. Once lost it would be impossible to retrieve it. I have been talking to Graeme about holding a special event day for EUG members and others, perhaps with a certificate to give it some added interest. Who knows. Watch this space.

Well, the Festive Season is almost upon us, enjoy your Christmas read from this bumper newsletter. I wish you all and your families the very best of health and prosperity for the New Year and have a Very Merry Christmas

73's and good listening

Chris Pettitt G0EYO  
Patron





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## *- Issue 52 -*

Hiya, another Xmas Issue and so it has to at least have the by now usual Supplement. It may also be a Bumper Issue the way my disk is filling up.

Our featured model this month is really a Featured Series since we have the Orion 5000 series of SSB Transceiver. This has now been superseded by the Orion 7000 - but that is another story !

My item this month from the book "A Century of Achievement" is the family tree for the original Company. I personally find this quite fascinating and having discussed it with several EUGers it looks as though others are equally fascinated by the success story which it describes.

Simon, our computer whizkid, has announced that not being content with us having our E-mail address, he is now providing us with an EUG WEBSITE. It is this kind of dedication which has allowed EUG to grow to our present state. The E-mail address is already providing a useful means for our overseas members to contact EUG more rapidly and more cheaply than via snail mail, even if it is flying snail mail.

I have to admit my dismay at the proposed closure of all UK based marine NDBs. Trinity House do have a case though. GPS receivers are now becoming almost as low in cost as the simpler Beacon Receivers.

Guess that is it, read on, for your usual bonanza of Eddystone related gen from the usual team, plus various contributing members. Ted.

## Flying Saucers in EUG ?

Well almost, but not quite ! We do have a communication from a UFO though. And this is much more than Project SETI can claim.

G3 UFO has used our E-mail service to communicate with us re his Eddystone sets, for inclusion in Graeme's Survey.

Now being a G3 +3 David must have got that call far earlier than I can recall the term being in use for friendly (well hoped for friendly) alien craft. Just coincidental David ? Or evidence of ESP on your part ? Whatever, it really is a callsign to be proud of. How about G x EUG is there one out there ? Ted

SEE BACK PAGE - GRAEME.



## - That 840 Distortion -

Just a suggestion from John for Graeme and anybody else with such strange & intractable fault conditions.

John had just such a problem with his 640, in daily use with no attention of any kind for many years. Then quite out of the blue came a fault which produced audio distortion at any level but only on the higher audio range. It was almost as if the arrival of a high audio frequency in the AF stages was initiating oscillation.

Having been in domestic radio servicing for many years John did all of the usual tests and checks with no apparent anomalies, resistor values, condenser leakage, voltages, etc; - even new valves throughout changed nothing. Still that peculiar AF distortion.

It was whilst replacing the original valves that a faint line was discerned on the top of the AF voltage amplifier valve socket. Using a good magnifying glass it could be seen that this was a carbon track running from the vicinity of the anode pin to the grid pin.

Using a toothbrush dipped in switchcleaner fluid the whole of the top of the valve socket was thoroughly scrubbed. The valve was replaced and the set was powered up - EUREKA ! It looks like frequency-sensitive feedback was being introduced in this stage. Some two years on there has been no repetition of the problem.

## That 6C5 Triode

From Peter Lankshear in New Zealand (he of the superb Valve Equivalents in a recent issue), comes the following.

Useless information dep't;- "I kid you not when I say that the 6C5 triode has two grids. It comes about from the fact that RCA engineers were under considerable pressure to get the first generation of metal valves on the market and they took the easy way out with the general purpose triode of the series by using the electrode assembly of the 6J7 pentode. That is why the glass 6C5 has a shield surrounding the anode ! (The 6J7 was in turn based on earlier valves, the types 6C6 and 77). How's that for expediency ?."

## Panoramic Display Unit Type 1061B

Peter Matthews, G3 BPM, is still urgently seeking one of the above panadaptors as per his recent adverts in this Newsletter.

If any EUGer out there has one that he does not need, or knows the whereabouts of one, then please do get in touch with Peter at the following address,- Charnwood, West Chinnock, Crewkerne, Somerset, TA18 7QD. Thanks.



## High or Low Z Aerials

A recent letter from one 'Not So Technical' EUGer, as he signed himself, mentions that for some years he has operated his 940 receiver using a mains earth and an aerial of just about 15 feet of wire which is run vertically up to the picture rail and then along this rail. The whole secured in place by 'Blutack'. It is just that he is in a small flat and has no other facilities available.

To date the aerial lead has been plugged into the A1 socket and the link has been in place between A2 and the Earth socket. The three wire mains lead had its Green/Yellow lead taken to the earth connector of the polarised mains 'plug/socket' connector so familiar to all Eddystone users.

Reception has never been entirely satisfactory, low signal strength on stations pumping out many Kilowatts and much more noise than seemed reasonable. It was necessary recently to remove the set from its case for cleaning and whilst on the worktable it was powered up. Surprisingly both signal level and noise levels improved quite noticeably - until he noticed that the green/yellow earth wire had become disconnected from the leaf spring contact of the polarised connector. A few tests on various bands showed that by and large signals were much stronger without this connected. Also the level of locally generated QRM was way down.

Further tests before putting the 940 back in its usual situation showed that the same results held good if the green/yellow lead was properly re-connected but the link between A2 and Earth was removed. He has now been operating the 940 in this way for several months and pronounces himself to be much more satisfied with his 940.

He took the anomaly to the local Club where a brains trust comprising several of the 'elders' gave him the following explanation. At first glance the schematic diagram will not show why this should be so, since we now have the short wire aerial connected to one end of the aerial input transformer primary, and the other end of this primary winding just left floating.

Further thought will show that the short 15 feet of wire used for an aerial will be, electrically speaking, only a small percentage of any of the wavelengths covered by the 940. This means it will almost certainly have a high impedance at these frequencies /wavelengths. Coupling such an aerial into the nominally 75 ohm input of the 940 will give a big mismatch.

What happens when the link is removed from between the A2 and Earth sockets is that this high impedance aerial is suddenly presented with a high impedance input, something possibly more to its liking than the normal 75 ohms.

The coupling now is no longer inductive between the primary of the aerial transformer and the tuned secondary. The primary winding now simply acts as a small value capacity coupling feeding the tuned secondary. Hence what this EUGer finds, better signal level and lower noise. But all the same I bet there are places on the 940 ranges where he gets minimal output.

## The Birmingham Blitz

Fifty-eight years ago it was ! October and November of that year, 1940, and

the J. R. & L. Company which was the parent company of Stratton's, have just reason to remember the date.

At that time they lost FOUR factories to the Nazi bombers. The first to go was the Balmoral Works in Bromsgrove Street where the Stratton's branch of the Company manufactured radio equipment. This happened in October and the resulting fire left very little to be salvaged. The few items saved were then transferred to the Globe Works. Just a few weeks later, on November 19th some 646 High Explosive bombs and 19 Parachute Mines (plus many thousands of incendiary devices) were dropped on Birmingham. There was a total of 1,121 casualties in the City this night.

The whole of the Alexandra Works (60,000 square feet) and also the adjoining Globe Works (130,000 square feet) were completely destroyed. This left intact the Leominster Works (much smaller at about 35,000 square feet) on the opposite side of the road. Everything that could be salvaged was transferred across to the Leominster Works, this with a view to trying to re-start the very vital war production.

However before this could happen, just three nights later, on November 22nd, a further 870 High Explosive bombs were dropped on the City. This plus the usual thousands of Incendiary Bombs and the Leominster Works met the same fate as the other three factories.

G.A. Laughton and Joe Curry had scoured the district in an attempt to locate the very necessary premises where a fresh start could be made. Finally a derelict Bathing Lido known locally as the 'Bath Tub' was discovered. Since Strattons had been doing vital work for the MoD the buildings and site were requisitioned immediately. Prior to the destruction of the Leominster Works a lorry load of machinery had been moved to this site and work was soon begun on the manufacture of those special variable condensers required by the Air Ministry for its radar development programme.

Both Stratton's and the Jarrett's branches of the Company were soon able to resume work on their respective War Contracts. The Bath Tub site was occupied from that date right up until the recent move by Eddystone Radio to it's present site.

The above account has been paraphrased from the book 'A Century of Achievement', the history of the J. R & L Company. Further articles will follow in future Newsletters.

## They Don't Always Get It Right

The Eddystone 840C which was bought last year had always given a disappointing show on the lowest frequency band - what is often called the Long Wave Band. Even compared with the cheapest tranny, performance was mediocre.

When the time came to fit a new output valve the under-chassis of the 840C was inspected very carefully in the hope that something might be discovered which could cause this disparity. Being that the problem was confined to the LW band the problem was much easier. A check on the respective coils in the coil box showed no 'new' soldering. All appeared to be original. However the core



for the mixer stage coil was of a different colour to all of the others, slightly lighter in colour and with a different shaped slot at the end.

This 'alien' core was removed and found to be much shorter in length than the others, even more upsetting though was that the remains of the original core could be seen at the bottom of the coil former - broken shards of ferrite material which were easily removed with the help of a pencil shaped length of plasticine and some dexterous probing. Finally enough bits of ferrite came out to show that roughly half of the original core had remained in-situ when the new core had been fitted. Peaking must have been impossible under such conditions !

From the junk box a whole plastic 'jiffy-bag' of miscellaneous cores dating from WW II to the present day, was produced. The nearest in size, thread, and colour was selected. The colour is often an indication of the similarity of core material.

This new core was inserted and then the mixer circuit was correctly trimmed, i.e. ferrite core at the LF end and trimmer condenser at the HF end of the band. Results were quite satisfactory on this range now, much improved to those previously obtained. It has to be assumed that a former 'user' had ruined the original core whilst 'fiddling' and had simply utilised the first available ferrite core.

## Isoplethics New Items

A recent phone call to Tim disclosed that he is on the way to producing a line of coil formers and sockets for the DIYer to 'wind his own'.

Isoplethics manufacture the Impedance Adaptor recently mentioned as suitable for matching the modern low impedance phones to the usually high impedance audio output available on many of the older communications receivers - such as our own Eddystones.

Whilst the coil formers will NOT have the old Eddystone type of base they will have standard Octal bases and this will be good enough for those replica models that many enthusiasts are building these days. It is to be hoped that Tim will let EUG have news of when they are ready for sale.

## Ant Proof, or How to Sell Radios

In the days of the British Empire, when the Colonials had a desperate need for news from home, meaning the U.K., the Stratton's Company found many diverse ways of advertising their receivers.

Possibly one of the most inspired advertisements was when the All World Four was marketed, around the end of 1934. This receiver in it's aluminium die-cast case was produced in response to a demand from Colonial Tea and Rubber Planters who wished to listen to the programmes from home, then being broadcast on the Short Wave Bands.

As possibly one of the very first really Tropicalised receivers on the market the Stratton's Company advertised the All World Four as being - wait for it -



"ANT PROOF". In fact the threat from omnivorous ants was a very real one in those tropical climes. I have recollections of an Aunt Maevie who had spent most of her married life in India. She had a collection of items that had been partly consumed by various forms of indigenous insect-life whilst she lived out there. Prominent was a wide leather belt that had in several places been almost entirely consumed, the insects attacked the reverse of the leather which had not been treated to render it glossy. She had also a family Bible, a rather large and thick book which had been attacked quite thoroughly, bearing as it did worm holes through many sections and much gnawing was visible around the leather binding. Another was a silk banner of some military design, - real silk this ! The material had been thoroughly chewed all over by moths and ants. In the case of the moths could this be a case of 'cannibalism' maybe ?

The All World Four must have been a success as I know of two examples which are still in working order. The first was brought back to this country after the failure of the great "Ground-Nut Scheme" when the owner had decided to sell up and retire. He came home with many family possessions including this immaculate, working All World Four.

The second example was still on the African Continent when I heard of it some years ago. The owner having inherited the AW4 from his parents was asking for advice on how to 're-activate' the set for nostalgic domestic use.

## Pioneer VHF Radio

Eddystone pioneered the use of VHF radio for point to point use in the UK with their very successful products for use by the Metropolitan Police. The London Police Service was looking for a means to ensure adequate emergency communications in the event of land-lines being disrupted during the approaching war.

In September of 1938 just a few weeks prior to the outbreak of WW II the Eddystone Company supplied the Met with their first ever VHF radio systems. These were the S.214 and S.215 fixed station units and the S.440 and S.450 mobile, or outstation units. The former were operated normally from the mains supply although emergency generators were also envisaged. The latter sets were for use on either mains or from low voltage battery supplies, either 6, 12 or 24 volts power units could be supplied eventually by the Company.

Surprisingly enough there are no known examples of the former models, the S.214 or S.215 in existence. The S.440 and S.450 units though do exist in fair quantity. Usually they have been relegated to the garage, the loft, or an attic used as a 'junk-room'.

Both Dave Simmons and Graeme Wormald have 440/450 equipment and both have recently acquired copies of my 440/450 manual. We may yet see a 440, a 450, or both in use again. How about '2 metres AM with a 440/450' ?

## Help !!! Help !!! (again)

In 1973 on the occasion of the Fiftieth Anniversary of Eddystone Radio the

Company produced a booklet compiled by Pam Reynolds. This outlined the story of the Company since its inception as a producer of radio components and radios. Titled "The First Fifty Years, 1923 - 1973" this booklet would be a nice addition to our EUG archives, even a photocopy would be nice.

How about it? Has anybody out there got a copy of this booklet that we can borrow for photocopying? Or alternatively can you copy it for us? I shall refund costs if necessary. Thanks in advance, Ted.

(DON'T WORRY, TED. I'VE FOUND YOU A COPY

- GRAEME.)

### 380 Volts Domestic Supplies ?

One peripatetic EUGer who recently moved over to the Normandy area has been busy rewiring the household mains supplies. Fitting the french type mains plugs was a first necessary step but then whilst checking out his shack wiring he discovered that between the live side of the lighting supply and the live side of the wall sockets he had a full 380 volts A.C !!

The lighting in the large studio type room used as his shack was supplied by a single fuse in the main box - this fed four lighting outlets, two ceiling fitted and two wall fittings. The two 15 amp sockets which supplied power for the equipment also came from this same fuse box but used a different phase to the lights, via a 15 amp fuse. The neutral was common to both. Putting his trusty Avo across the two lives gave him the above mentioned 380 volts A.C. There are no earthing systems supplied to the two pin sockets but there is a residual current breaker which has so far never operated !

Whilst the company claim to be supplying the premises with 220 volts A.C the actual socket volts may vary considerably from a low of 185 in early evenings to a high of some 235 in mid afternoons. And we dare to complain of our electrical supplies and suppliers !!!

There is no ring main system in his house, supplies are simply 'teed' off from the main fuse box to whichever room. It seems that ring mains are a No-No over there.

### SIMON'S Graeme's Recent Finds

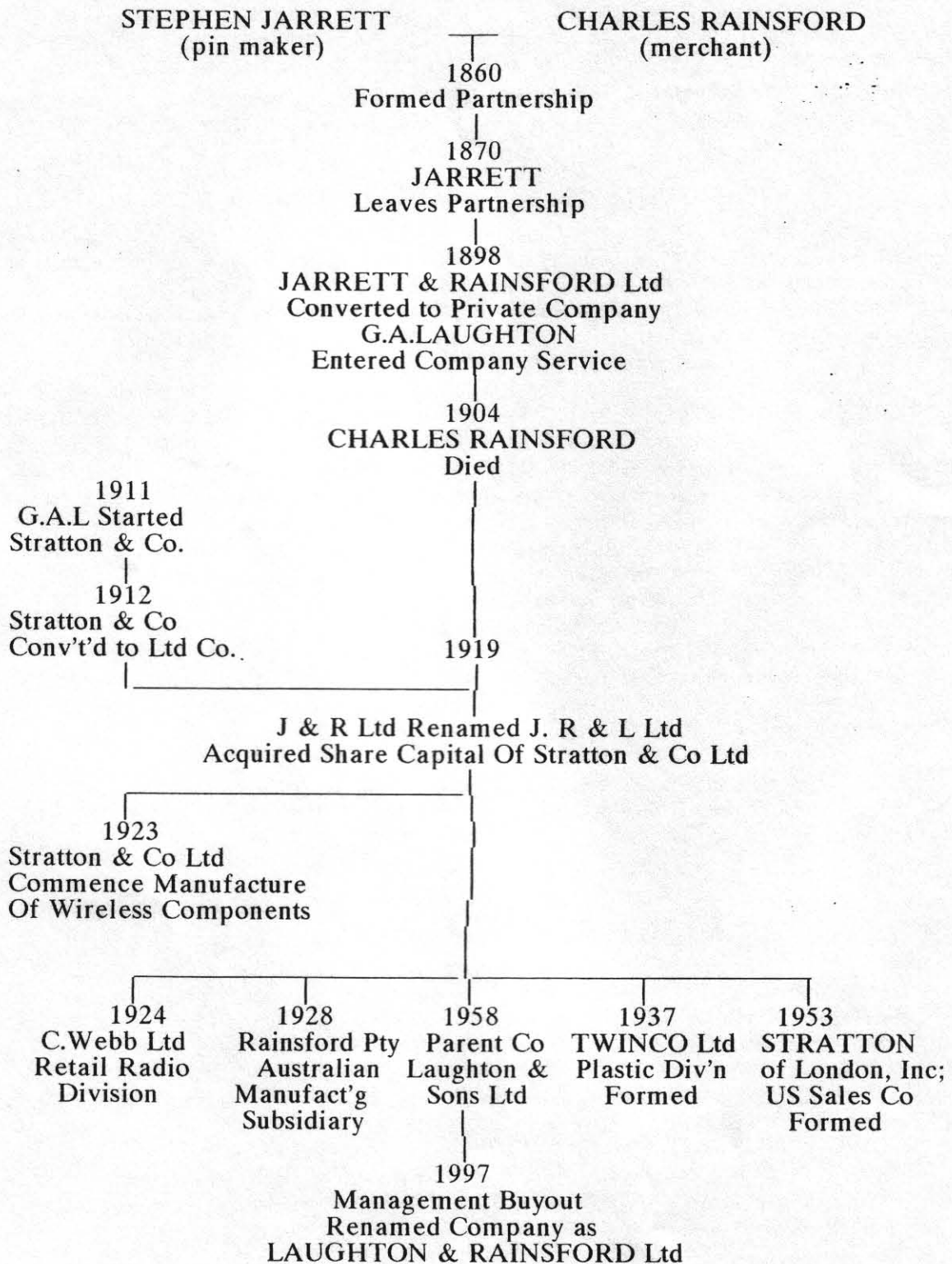
The Horn-type speaker displayed by <sup>SIMON</sup> ~~Graeme~~ has stirred something in my Bio-databanks as I can distinctly remember seeing such a speaker showing the familiar Lighthouse logo in an Amateur Radio Exhibition in the late -40s or early -50s era. This show was held at the Crane Theatre in Liverpool and I recall that as one walked in the door there was a stand with a shiny new 640 with lid opened for display of the 'innards'.

Somewhere in the Hall was a wooden boxed Eddystone with separate Battery box and separate Horn speaker. The proud owner would not allow anybody to handle either set or speaker, nor was the receiver working.

Does any EUGer have similar recollections of this set at this show? I cannot recall whether the show was arranged by a local club or by RSGB or another organisation but can recall some domestic sets being on display. Ted

(SORRY TO MUDDLE YOU, TED!)  
(SEE PAGE 13)

## Evolution of Parent & Subsidiary Companies



The above information provided by the Company Book "A Century of Achievement", published in 1960. Our acknowledgements to Laughton & Rainsford Ltd. Ted.



## En Route to Digital Short Wave

Top International broadcasters, transmitter and receiver manufacturers, research institutes and media organisations recently founded the Digital Radio Mondiale (DRM) international consortium. Its aim is to digitalise broadcasting in the AM bands, long, medium and short waves. Amongst other things the aim is to significantly enhance reception quality. *DW-Plus* spoke to Peter Senger, Chief Engineer of Deutsche-Welle and Chairman of the DRM steering board about the perspectives of this initiative in the future of international broadcasting.

The DRM consortium is to develop a technical standard valid world-wide for the digitalisation of the AM bands (L, M, & S). New types of receiver will be required or 'black box' type convertors will be needed to receive these transmissions. Because known techniques such as are in use already for DAB or DVB will be used it is not expected that development and manufacturing costs will be anywhere near as high as for these systems. Costs of circa \$50 per receiver over present costs are expected, and these will drop even lower as acceptance, and production, grows within the listening community.

It is anticipated that the future use of digital transmission techniques will cost only a tenth of the present electricity costs to achieve a reach identical to that of the present-day AM short wave transmitter. We expect improved reception quality to raise the present listener acceptance levels for AM band broadcasts. More facile tuning and identification will be products of the new digital systems since each station and programme will come with an ID marker which may be previously keyed into one's receiver enabling it to search for that same marker as the receiver is tuned.

The above is a resumé of an interview given by Harald Kohl of Deutsches-Welle World Radio. Ted.

## N.D.B s to go Q R T !!!

It is OFFICIAL, some 33 NDBs around the coast of the UK are to go QRT, according to recently published information.

At the same time there are to be closures of lighthouses etc; - all in the name of 'cost-cutting'. This information has been published in various yachting and boating magazines currently on sale. It further says that full details may be obtained from Trinity House and the Lighthouse Commissioners. I have written for those details so WATCH THIS SPACE

I write this whilst listening to the morse identification FB from the Flamborough Head NDB. Just another facet of our hobby which may be headed for 'wipe-out' as GPS - or satellite - navigation becomes a commonplace.

## Transformer Rewinds

Somebody did write in to ask about the article in a recent issue re transformer

rewinding facilities. The writer of the article in question has not supplied an address but another EUGer in Lancashire has suggested that any enquiry made to the following company may receive a sympathetic hearing. Try a call, or letter to Castleton Transformers, Unit C14, Fieldhouse Industrial Estate, Fieldhouse Rd, Rochdale, Lancs; OL12 0AA. I cannot vouch for anything here as the info is about 'third-hand' to EUG. Ted.

## Tuning HF Airband Signals

I guess that the first thing to be said is that one must 'hone' one's SSB tuning skills first, if there is to be any degree of success whilst using our 'analogue' type receivers. With the modern 'all singing, all dancing' receivers where both exact frequency and correct sideband may be programmed into the memory banks then even Will Shakespeare's character 'Bottom' could have OAP HF Utilities. Had they existed in his time !

Maybe the best thing to do is to listen out to one of the quasi-local Volmet transmissions, RAF Volmet or Shannon Volmet., This type of transmission may be used to learn how to tune YOUR analogue Eddystone for the better reception of airband SSB.

These signals between the air traffic control centre and the aircraft, or vice-versa, are almost always quite brief. Sometimes, literally, just a few seconds of talk from each end. Thus you need to be quick, and patient, when searching out these signals on HF. One tip for Eddystone users. Do not go by scale marker points for re-locating these signals. Always use the logging dial readout as you will gain much accuracy when attempting to retune to a previously located signal frequency.

## FLASH !!!

THIS IS STRAIGHT FROM THE HORSES MOUTH !! Catch them whilst you can still do so !!

In a letter from the Corporation of Trinity House it has been confirmed to me that all UK marine NDBs are being phased out.

During the coming year, 1999, we shall see them progressively taken Off The Air in batches. The aim is that by the year 2000 there will no longer be any of our Marine NDBs in operation around the UK coastline. The future of Aero type NDBs is not yet known.

It seems that the view of the Trinity House people regarding NDBs is that they are no longer necessary, this given the almost pervasive use of GPS. The cost of a GPS receiver is already down around the £100 mark and this compares well with the cost of a receiver for use with NDBs.

Those of you who are interested in this matter should write directly to the Corporation of Trinity House. Tower Hill. London. EC3N 4DH. They will



cont; from p.10.

(They will) send you a fact file of information on presently being implemented plans for NDBs, on the future use of the few remaining Beacons which will have a digital sub-carrier some 500 c/s from the main ID signal. This will carry the necessary digital GPS info. About six of these will be all we have left to chase, all on new frequencies too. FB is one of the six.

I guess that this is the price of technological progress. The loss of the last remaining manned lighthouses is another blow to us neo-luddites.

## Aero - Beacons

Whilst the above refers only to Marine NDBs it is noticed that some of the older aero beacons have disappeared without publicity, mostly when RAF installations close, or are mothballed. Occasionally there will be the odd new one too, viz; the big airshows which usually have a QRP NDB in operation for the duration of the runup/setup period and the show itself. Others appear and disappear without announcement, such as the GMP one which had some connection with the acquisition by Manchester Police of their Squirrel helicopter, callsign OSCAR 99.

Some newish temporary Aerobeacons turn up from time to time in what are obliquely referred to as 'theatres of war'. I know of several apparently just temporary beacons in the Yugoslav/Serbian area.

## DAB and Short Wave.

Two separate organisations have formulated plans to utilise the MW and SW bands for enhanced broadcasting using digitally processed signals which will eventually be transmitted in this digital form on channels vacated by the normal AM stations after the year 2015 ! Well this came from VOA so I believe there is something in it. (They employed me for some years so they cannot be all that unreliable can they ?).

Plans are for the new signals to be replete with such 'gimmicks' as RDS on multi channel transmissions, this being achieved by multiplexing. Now my old days in RTTY with the RAF tell me that multiplexing means faster bit rates and that this calls for much wider bandwidth !

I may be wrong but it will be a case of 'Wait & See'. I do know that our old sets will NOT be able to handle these signals. But then ever the optimist I just KNOW that there will be AM and SSB signals around for decades to come.

***This is the Last Page 11 from Newsletter No 52.***

***Remove it and file with that issue.***



## The ORION - 5000 Series

This series provides basic facilities of transmit/receive on Single Side Band using either Simplex or Duplex voice or FSK with power outputs of between 100 and 150 watts ERP. There are between six and eight switched channels between 2 and 16 Mc/s.

Crystal oscillators are used for channel generation and a wide-band RF output stage permits of single switch control. Any channel frequency between the above mentioned limits can be supplied to order. These frequencies will naturally depend upon the service for which the 5000 is destined, i.e.- Marine, Land-Mobile, or Land Fixed Link Working.

The original 5000 was so successful that a 5600 version was produced for HF FSK/Voice systems over the range of 2 to 16 Mc/s. This had a either a six or eight channel capacity and a power output of 60 watts on FSK and from 120 to 150 p.e.p on SSB voice. Power supplies as for the 5000 could be mains or battery sourced.

This concept was made possible by combining the original 5000 with the Eddystone 1629/1529 FSK Modulator and Demodulator.

Built in ALC and VSWR protection affords complete reliability using a wide variety of aerial systems.

This system was sold to Police, and other Gov't Depts, Survey teams, Relief Organisations, Engineering contractors, Shipping Companies, etc; throughout the world.

Next in the series came the 'Trawler' version, this was the 5700 and it came with the regulatory Radio-Telephone Alarm which operated upon receipt of a coded tone signal on 2182 Kc/s.

No attempt has been made to provide a block schematic due to the complexity of the circuit. Plug in printed circuit board techniques were employed thus providing for ease of maintenance and maximum security against loss of service.

A full panoply of accessories were provided for use with this Orion range and prominent amongst them were both desk mount microphones and mobile hand-held microphones, Headsets for use in areas of high ambient noise, Whip aerials for Land, Mobile, and marine environments, External speakers and all necessary interconnecting cables.

N.B.-, please see bottom of page 21.

## - MIMCO Nebula -

Charles has bought a Nebula badged by MIMCO and in pretty fair condition considering its age. This turns out to be a 958/5 in disguise as the rear mounted model plate indicates.

## Eddystone User Group e-mail and WEB Site

Since publication of our e-mail address many of you have sent survey form returns, photographs, information, members ads and other items of interest. Please keep them coming!!! The Internet allows our overseas members to communicate with us almost free of charge within minutes. Previously they would either telephone (expensive) or use snail mail (slow).

The e-mail is checked daily and forwarded to it's intended recipient. When sending large files and images say for an article, please e-mail a request FIRST. If everyone sends large files at once the system will become clogged up. Normal messages take very little time to send but photographic images and documents can be quite large. Check the file size BEFORE sending and if it is over 500 KILOBYTES in total we would be grateful if you would e-mail us a request to send message FIRST.

We are always looking for items of interest to publish in the newsletter. If you have anything you wish to share with other members then please send it in. You don't have to be a writer, just send us your ideas and the editor will make any changes necessary.

Our e-mail address is : [eddystone@nomis.co.uk](mailto:eddystone@nomis.co.uk)

## EUG WEB Site

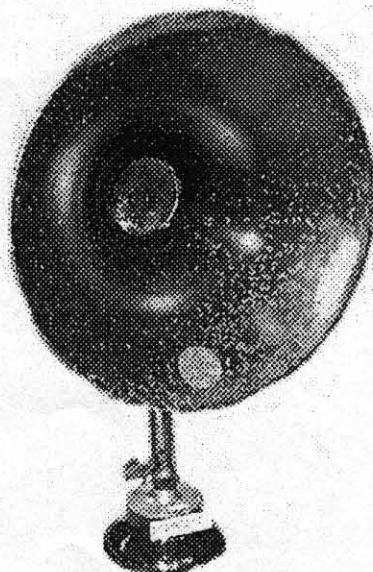
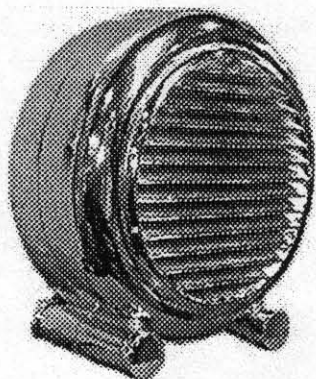
Our very own Internet WEB Site will be uploaded soon but before it is we would like your input as to content. At present we aim to include the following topics:

- History of Eddystone and EUG
- Benefits of membership and how to join
- Sample articles from the newsletter
- Photographs of known models with detailed information
- FREE members ads

Any more suggestions?

## Recent Finds

The National Vintage Communications Fair at the NEC in Birmingham often yields unknown Eddystone items of interest. The October Fair was no exception. We photographed a previously unknown Eddystone Horn Loudspeaker which we think is probably a re-badged REEVO unit. The Eddystone LOGO is visible in the lower centre of the horn. It may also be of S.G. BROWN origin. Can you offer more information? In another corner of the show was a CHROMED round speaker. Research suggests that about five of these were made for exhibition purposes. The one we photographed was found in a rather flaky state at a flea market in Marseilles. They didn't half get around!



# THE COOKE REPORT

## Part Five

*In the last Report, Bill Cooke (GWØION) described the trials and tribulations attending the birth of the 770R, but how it became a world-beater in the VHF spectrum. He told us how the 730 series was produced in greater numbers than any other model and how it attracted the interest of the Diplomatic Wireless Service. This month Bill gives us further insight into the world of 007...*

### A LINK WITH THE PAST . . .

"Graeme, G3GGL, tells me that after the last 'Report' (in which I described the activities of the Russian inspection engineers), he had a phone call from EUGer Wilf, G7EPY, to say that in 1956 he worked in the Midland Hotel ('the best in Birmingham', he proudly agrees), and well remembers serving the strangers in the bar. Russians have never been very common in Britain's Second City, but one of the barmen was a fluent speaker of that guttural language. Their dealings with Eddystone were disclosed (much to Wilf's interest, who had been a SWL since before the War), but not the use to which the sets would be put. He is very gratified to learn the facts, forty years on!

### FREQUENCY MODULATION COMES OF AGE . . .

"After much research and practical testing the BBC finally decided that the future of sound broadcasting lay in wideband FM. In 1954 a project of adding VHF transmitters to the existing television stations was augmented. With remarkable foresight the aerial masts had been fitted with 90 mc/s (Band II) horizontally-polarised slot radiators as well as vertically-polarised Band I television stacks.

"The original VHF transmitter at Wrotham (pron: 'Rootem') in Kent was built in 1947 and is 130 miles as the crow flies from the Bath Tub. This was the only transmitter radiating the new BBC system and we needed to make arrangements to receive it. The result was a 150-foot mast with a six-element yagi aimed to the south-east.

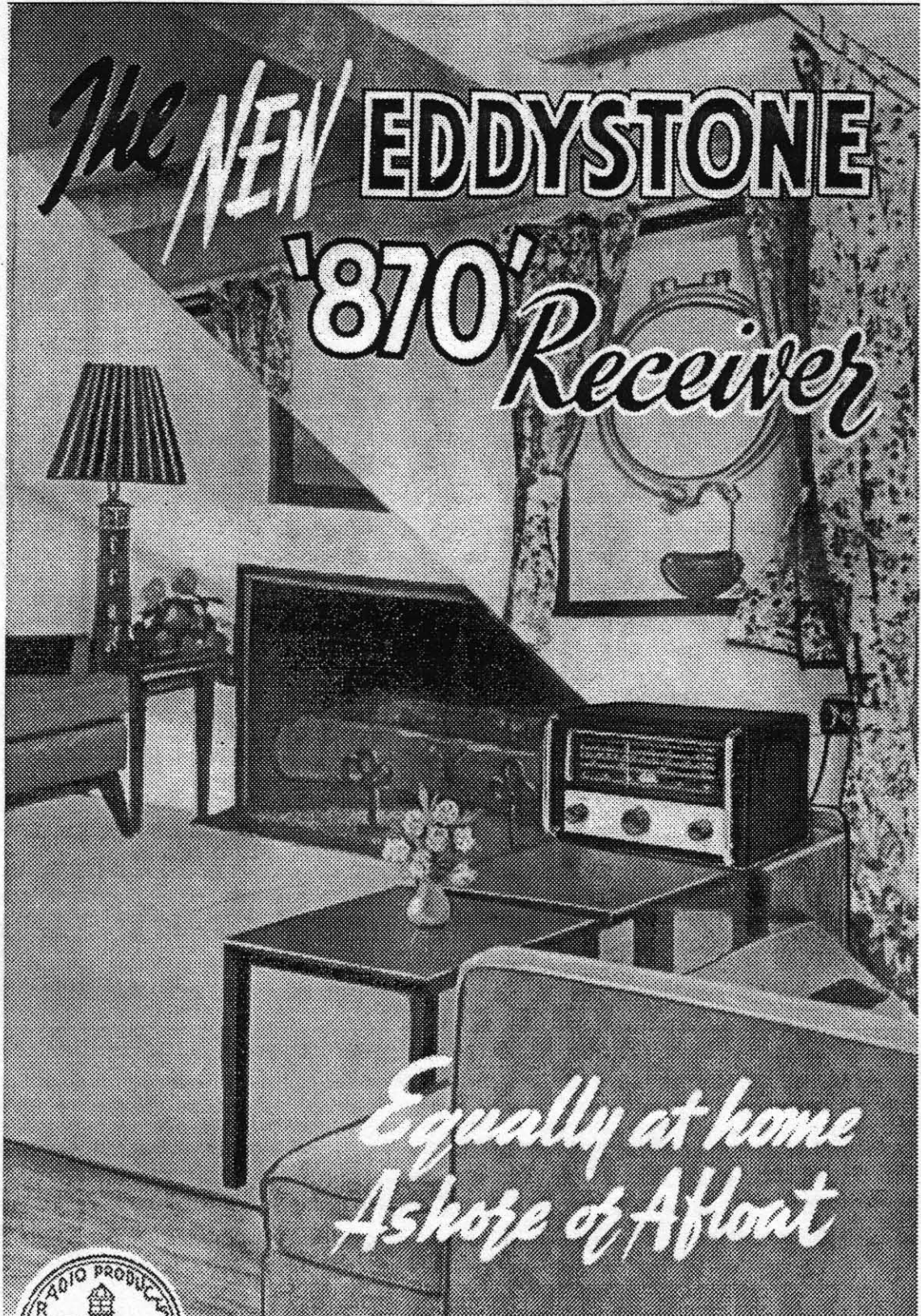
"After discussions with Goodmans and other HI-FI manufacturers we came up with the model 889/1 FM Tuner-Feeder. It was designed without a case, for people to custom-build into units. This finally went into production as the diminutive 820 FM/AM HI-FI Tuner at the end of 1954.

### THE SEARCH FOR A NEW MARKET . . .

"In 1955 Arthur Edwards, Eddystone's Sales Director, summoned a meeting with Harold Cox, Technical Director, and myself, Chief Engineer. He was troubled by the Sales Figures, which showed a distinct dip. He suggested that we needed to create a



# The NEW EDDYSTONE '870' Receiver



*Equally at home  
Ashore or Afloat*



*Manufactured by*

**STRATTON & CO LTD**

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CABLE: STRATNID BIRMINGHAM

new market with a universal 'midget receiver'. The idea of a mini-set based on the 820's front panel was born. At the time research had started on what was to become the 880 super-model (of which more later) and Harold was loath to divert effort from the project. The result was that the 870 was designed over the course of about twenty weekends. When there was a job to be done at Eddystone the clock went out of the window. But the final problem was deciding the colour to paint it!

#### PUT IT TO THE VOTE . . .

"Several of the development models were sprayed in garish colours: pea green, yellow, red, blue . . . and MAROON. This was Harold Cox's favourite and he declared that an election would take place the next day among the assembly workers to choose the colour of the production version. He then passed between the girls on the assembly line murmuring the virtues of discrete colours. And guess what? The maroon won by a clear margin! Harold was tickled pink and production got under way.

"Discussions took place with Cunard and Royal Mail Lines to equip all new liners with an 870 in every cabin, not just the first-class. An international advertising campaign was mounted to sell the set to the general public, based on the quality of the product. Our agent in Coventry sold one to a customer who complained long and loud that the 870 was the worst set he'd ever had! We offered to change it for a new one but that only incensed the customer even more. He went into the store, seized an 870, threw it to the ground, jumped on it and walked off... I'm not sure to this day who paid for it!

"Otherwise the set went down very well, but by the early sixties customers were asking for the 13 metre DX broadcast band to be included. We couldn't squeeze the tuning up to that so we added an extra band and called it the 870A. Harold relented and agreed to spray it Racing Green!

#### THE RADIO MICROPHONE COMES ON THE SCENE . . .

"In 1956 television production had reached the stage where a cordless microphone, or radio-mike, as it came to be called, was required by the BBC for its light entertainment programmes. Video-tape was yet to be invented and everything (except film) was transmitted live. By this time we were supplying the Corporation with a special version of the 820 VHF tuner which they called the HR20. It was much the same except for the pre-set AM channels, for which they had no need. So they asked us to make a special version to receive the radio-mike signals on 70-90 mc/s. This became the model 890, and the 890/1 covered 100-120 mc/s. They were fitted with a wider range AFC (automatic frequency control) because the transmitters used in the mikes, (valve, of course) were self-excited and inclined to drift a bit!

#### MILITARY INTELLIGENCE CALLING . . .

"By 1958 the model 890 had developed into the very similar 930 and we had a visit from the Diplomatic Wireless Service. Could we possibly make some on the side,





***EDDYSTONE 930 SERIES, FOR SPIES & BROADCASTERS***

operating on various other frequencies (for the 'bugs' which were becoming standard tools of the secret service agent)? The DWS were making radio bugs from foreign components (so as to confound the other side if found) and placing them all round the globe. They wanted the VHF receivers to install in nearby British Embassies. The bugs were notoriously unstable due to battery variations. The need for a good AFC was paramount and these sets could pull a signal over a range of 3 Mc/s! Different Embassies used different frequency bands, hence the proliferation of models. The staff engaged on the construction of these sets had to have special security clearance. No wonder the details have been vague. Various other agencies such as the Civil Aviation Authority and the Met Office ordered sets on a less-secret basis.

#### THE VIKING CONNECTION . . .

"We had always had good relations with the Trako organisation who specialised in supplying technical equipment for the Swedish Merchant Marine. In November 1958 Harold Cox and I were asked by Olle Hermansson, SMØGOO, their Chief Engineer, to go over to Stockholm and discuss a 'special' receiver for professional use. It was to be a two-band AC/DC set, covering the coastal shipping bands between 1.6 and 4.7 mc/s. (What we used to call 'fishfone' when we met it on Top Band.) It also had to have a fixed 2182 kc/s distress channel, so that regular checks could be made at standard times without disturbing the netting of the set. This was known as the Model 909A. They also wanted variants using external power supplies (909A/1) and 24 volts DC (909A/2), which we developed.



## ERRORS CREP' IN . . .

"Whenever we had a customer complaint, no matter how big or small, it was always discussed in the greatest detail and action taken. One day we had a complaint from Australia . . . the aerial terminal panel on a 680X was fitted upside-down! Impossible, we replied. Our inspector would never allow it! By return of airmail came a photograph of the offending panel with the inspector's stamp clearly visible . . . We had to grovel.

"It was the custom in the Test Department (where the sets were aligned) for the staff to take morning toast from the canteen. So when we had a letter from New Zealand (after the delivery of a 770R) saying that they weren't paying extra for the toast between the IF cans we kept our heads down! But Harold Cox got wind of it and convened a court of inquiry . . . the result was a total ban on food in the factory. All eating had to take place in the canteen!

"May I take this opportunity to wish all E.U.G. members and their families a Happy Christmas and a Peaceful New Year; I hope you all enjoy my little reminiscences as much as I enjoy remembering them! VY 73 DE BILL GWØION"

*BILL CONTINUES HIS 'REPORT' IN THE NEW YEAR.  
WHAT FURTHER CURIOSITIES WILL HE REVEAL?*

## EUG 80-METRE FIRST SUNDAY RADIO NET

The EUG 'First Sunday' net which took place on the 1st November was pleased to welcome Bill GWØION on the air from his retirement home in Newtown, South Wales. Conditions were very good and the Net continued for almost 2 hours. Members signing in included Terry, G3VFO, from Burwash, E. Sussex; Pete, G4DAN, from Mistley, Essex; Stan, G3IJW, from Bexley, Kent; Anthony, GW4RYK, from Montgomery, central Wales; and Colin, G4HNP operating from his mother-in-law's QTH at Clent, Worcestershire. Yours truly, Graeme, G3GGL, was in the chair.

Colin was using a magnetic loop on the bathroom roof! He's unable to operate from the home QTH in Birmingham due to extreme density of neighbours and EMC problems (TVI etc). Also joining in the Net was non-EUGer G3DQQ, Don from Bury, Lancashire, who had been listening to us on his Eddystone S.640 which he has had in his shack since new in 1947! Is this a record which can be beaten by any Member? Don uses a valve Heathkit 101 Tx/Rx and requested an application form. By the time you read this he will be a full member. Welcome aboard, Don!

The 'First Sunday' and also the 'First Thursday' EUG Nets take place each month and commence with AM testing at 9.45 (local time: GMT in winter; plus an hour in summer). Then the Net proper starts at 10.00 (local) on SSB. The frequency is 3695 kc/s plus or minus QRM. Listener reports are very welcome from all members. The Net controller is usually Graeme G3GGL or Anthony GW4RYK.

## Reminiscences

Gary writes in with some tips which seem not to be known to many people, going from what he hears on the air and at the club.

Perhaps the most common fallacy is over the order in which IF transformer cores should be adjusted for peak. Gary says that the correct order is always working backwards from the secondary of the last IFT, then this IFT's primary, then back to the secondary of the preceding IFT and then it's primary, and so on to the primary of the first IFT. This is also my understanding Gary and I have never seen it any other way in print.

The second point is that for those who bewail their lack of a high impedance volt/ohmmeter, yet own such as an Avominor or an Avo 7 - well you have all you need there in your hands. If you connect your analogue avo to the kathode of an AVC controlled valve and adjust for minimum volts, or you connect your avo to the screen grid of such a valve stage and adjust for maximum voltage, then VOILA ! you have effectively a valve voltmeter.

How about a 'scope ? This can be a very effective valve-voltmeter if switched to DC coupling. On AC coupling the presence of clipped, or otherwise distorted waveforms can be checked and traced back to source.

With a set having a crystal IF filter then the IFs need to be peaked for the resonant point of the crystal, not necessarily spot on to the quoted 'book' IF frequency as the crystal may have aged a few Kc/s over the years.

Gary mentions a fault which plagued him for many hours, in an 840A. The lower winding of the first IFT had become loosened and had slid down the core - this had the result of making any peaking impossible. The reason could only be found when the IFT was removed from the chassis and opened up.

The letter ends with what is perhaps the most important point of all - If It Ain't Broke Then Don't Try And Fix It !!!

## Drive - Cords

EUGer Steve has been trying to set up the scale alignment of his newly acquired 670C, with very little success. He then wrote to me giving very full and precise details with drawings of the 670 and his problem.

One thing immediately apparent was the fact that the drive cord had been replaced at some time and that the replacement was non-standard. It was a multi strand twisted cord of either rayon or nylon thread and was much too thick for the drive pulleys. A second point which came out in the letter was that the tension was far and away too high at the extreme ends of the scale. Over the last inch to inch and a half the cord reached the pulleys at an extreme angle which increased tension considerably. This was evidently caused by the way that the new drive cord had been attached to the cursor - and this had been done solely because it was too thick to be attached normally.

The whole drive cord was removed after Steve had drawn out the manner in which it went through the pulleys and around the geared pulleys. He sent this to me and it was correct, so the problems seemed to be solely on account of



the thickness and extreme tension of the 'duff' cord. A new 'cord' of mono-filament fishing line was procured and fitted, care being taken to ensure that where this new cord left the cursor attachment point for the pulleys at the end it did so in a straight line.

Now there was no problem with alignment at the extreme ends of the scale and normal trimming brought the whole scale into tolerance. Ted.

## Dirty Gangs !

Whilst talking with Jim on the phone recently he mentioned a problem with his 750 which had been causing much hair-loss during the past few months.

Only at the LF end of each band did he experience considerable noise of a crackly nature. He also said that this had been present since the XYL had been around the shack with her dusters and vacuum cleaner - the aptly named 'Spring-Cleaning'.

I have to admit it was this latter observation which put me onto track for the solution of Jim's problem. I was correct and when Jim had opened up the 750, carefully cleaned the 'in-between plates' spaces on the tuning gang, and had tried the 750 out, the problem was cured.

It has been suggested to Jim that it might well be worth removing the whole tuning gang from the set, immersing it in lukewarm water with a small amount of detergent added. After a couple of hours it should be sufficient to blow dry the VC with a hairdrier on COLD, add a trace of moly grease to the bearings, and twist the shaft back and forth a few times. The ganged VC can then be remounted into the set. Ready to perform as new for many more years. Ted

## Ferrite Rod Aerials

If you are using one of the Eddystone so-called 'Cabin Receivers' such as the 870 or 670 series then Frank has a tip for you.

Living in a third floor bedsit he has no way of putting up an external aerial and his only attempt with a random wire dangling from the window nearly got him evicted. The usual bit of wire around the room seems to be more able to pick up Tv howls than broadcast stations so - - - what to do ?

It was recalled that some years back Frank's XYL had owned a B & O HiFi unit which relied upon a ferrite rod aerial mounted in a fifteen inch long square alloy tube. This was simply placed on top of the case, or alongside the case, orientated for loudest signal, or least QRM - whichever was most necessary.

There was no alloy tube available but there was a clear perspex tube of about  $\frac{7}{8}$ " diameter and 14 inches long. There was also an old Roberts Radio with a long ferrite rod it did not work and so no qualms were felt at cannibalising the rod aerial from the R.R. This rod fitted into the perspex tube easily with the long and medium wave coils still mounted. The coils were now rewired so that with one coil at each end of the FeO<sub>2</sub> rod the inner ends of both coils were soldered to the screen of a twin screened lead. The outer ends went to the two leads in the screened lead. White to the LW and Black to the



end of the MW coil. The leads were fitted with banana plugs for temporary testing. As they were with no added capacity the coils resonated well outside of the required bands, about 600 Kc/s for the LW and around 2.5Mc/s for the MW coil - this would be due to the capacity inherent in the screened lead.

At Frank's QTH the required listening on LW is to Droitwich and the two QRO european stations France I and Europe I so a small polyprop condenser was chosen to peak this coil at about 180 Kc/s. Ditto for the MW band where most evening broadcast listening is done around about 1300-1500 Kc/s, another condenser peaked this band to 1350 Kc/s.

Now the perspex tube was sealed at both ends and the rod fixed in place with a drop of UHU. In use the respective banana plug is fitted into the 'A' socket and the black plug into the 'E' socket. Yes, gain does drop off towards the other end of each range but there is more than enough gain available in the Rx so long as one is not chasing exotic QRP Dx from across the Pond.

## Leakage Problems.

This EUGer is in the most unenviable position of having a receiver which needs a new audio output transformer & a new output valve.

No faulty component has been located which can be blamed for these dud items BUT as Jerry says 'something did for them'. He began to do some tests on and around the output valve stage, starting with simple voltage checks as per the table in the manual.

Since these all seemed to be out of tolerance, yet supplies were okay and resistor values seemed within limits Jerry had to look more closely. In operation with all of 18 volts on the output valve control grid he knew there was something wrong - this was where he began to check even the most innocuous looking things, such as a blob of brown wax across the tags on the underside of the N78 bottle, this was an 888 receiver. This dirty brown blob had fallen from some other over warm component, or had been dropped in when the cores were being sealed after a re-alignment. It was removed in a lump with fine nosed pliers and tested for conductivity with a dvm on ohms. Okay I know that conductivity is measured in Mhos not Ohms but you get the gist.

There was a reading of several kilohms across the blob, it varied according to pressure applied by the probes. Next was a cleaning of the underside of the base with a stiff bristled brush and solvent (ex Tippex stuff !) The control grid volts was now more normal and so the 888 has gone back into service using a spare N78 and an ex Radiospares output transformer - this until a proper one can be found. Strange isn't it, so much damage caused by a surplus blob of dirty wax ??? Ted.

## Re The ORION Series.

Since the item on this was done Graeme has turned up an even later version which was the 5600/2. This was a complete integrated version with built in - as opposed to add on with the 5600 - modulator and demodulator units for Telex (ARQ-FEC), and with 6 channels between 2 and 16 Mc/s.

METHOD OF RE-STRINGING DRIVE CORDS TO MOST EDDYSTONE  
RECEIVERS, viz; 750, 888, 680X, 840A, 670A, & MIMCO, etc;

---

1. Place receiver on front handles. Top of the receiver towards operator and remove all traces of the old cord.
2. Wind drive to LF end, fully anti-clockwise; screw or anchor pin on the RH pulley should now be just under the main drive gear wheel. (re-position if not so).
3. Now wind the drive slightly clockwise until the screw or anchor pin is in an accessible position.
4. Pass the new cord around the back of the RH pulley gear and anchor it to pin or screw.
5. Press cord to bottom of the slot in the gear pulley and arrange it to lie in the bottom groove of the pulley, this is MOST important !
6. Wind the cord onto the RH pulley gear by applying tension to the cord with the fingers and winding the drive fully clockwise (HF end) and seal the cord onto the pulley gear using a small piece of wax or 'blutack', etc;
7. Referring to the drawing supplied, pass the cord around the idler pulleys at each end of the scale and over the jockey arm pulley.
8. Ascertain that the left hand pulley gear is positioned such that the anchor screw or pin is at the top and just clear of the main gear. (refer to drawing). Reposition if required.
9. Pass the cord over the pulley gear lying in the top groove, anchor the cord, adjusting the tension so that the jockey arm is approximately in the centre of its travel. In sets with an 'S' meter make sure that the cord clears the bottom of the meter. Cut off any surplus cord.
10. Remove all traces of the wax or 'Blutack' used to locate new cord in RH pulley gear, and check operation of the drive.
11. Make sure that the pointer guide rods are clean and that the pointer is not sticking. Also check that the pointer is straight and runs parallel to the scale.
12. With the drive wound fully anti-clockwise set the pointer exactly to zero on the logging scale and anchor the cord to the pointer carrier (soldering) in the case of wire, or clipping in the case of plastic carrier and nylon cord drives.
13. Check logging scale calibration with the vernier. Vernier zero should agree with pointer settings at 1000 on the logging scale.
- 14.. Check, after a warm up period, that calibration pips from crystal calibrator, or Standard Frequency Station coincide.



# RISE THE AND OF AN EDDYSTONE FALL

*By Gary GW8BNL*

*I, like the rest of the members of the EUG find the fascination of EDDYSTONE equipment indescribable and I would of loved to have visited the factory during the valve era.*

*The equipment that was produced is without doubt unique both in design and appearance, once you own one model you want another and where do you stop, probably when the space to keep them or the money runs out.*

*So these wonderful pieces of equipment were built at the Factory to be sold to the lucky owner for him or her to treasure for ever. The years pass and eventually for whatever reason the EDDYSTONE moves on to a new home and later may move on again. By now the chrome has dulled and the paint gained a few scratches and the EDDYSTONE may seem a little tired, but considering its age it still stands as a monument to its designers and builders and may of even gained a little more eloquence along the way.*

*Then the saddest day of all arrives when the new owner decides that a coat of non standard paint is required and the alignment cannot be right because it is fifty years old, even though stations are spread right across the dial.*

*After the alignment is done and all the cores and trimmers twiddled the dial accuracy is poor, the tracking bad and they probably did not even know the 1F frequency. The pots will have been changed for the wrong type and in the end the poor piece of equipment is retired hardly working to the damp old garage, probably with the thought that it was past its prime due to its age anyway.*

*There it sits rusting and corroding until the day when it is passed on looking sad and dejected to someone who might just be a member of the EUG.*

*Then the labour of love takes place, first a manual from Graeme and then the determination to return it to its original condition and specification just like they made it at the Factory.*

*When it is finished It is placed in a position of honour where it can be admired and used with much satisfaction for ever.*



U. K. LIST PRICE OF "EDDYSTONE" ACCESSORIES  
AND COMPONENTS - NOVEMBER, 1953  
(CANCELLING ALL PREVIOUS ISSUES )

ACCESSORIES

<u>Cat.No.</u>	<u>Description</u>	<u>List Price</u>
669	"S" Meter	£5.18s. 0d
678	Modulation Meter	£10. 6s. 6d
687	Vibrator Power Unit ( 6 volt)	£13. 5s. 0d
687/1	Vibrator Power Unit ( 6 volt)	£13.16s. 6d
688	Loudspeaker, Diecast (Black)	£3. 3s. 3d
689	Horse Key (Semi-Automatic)	£4. 5s. 3d
696/1	Wavemeter 160 Mc/s to 200 kc/s	£13.18s. 6d
697	Loudspeaker, Diecast (Brown)	£3. 3s. 3d
709	145 Mc/s Tuning Assembly	£1. 1s. 6d
717	145 Mc/s Beam Aerial	£4.16s. 3d
762	Mounting Plate (for Cat.No.717)	18s. 0d
731	Doublet Aerial (50 ft. Feeder Cable)	£2.17s. 9d
731/1	Doublet Aerial (100 ft. Feeder Cable)	£3. 3s. 3d
732	Mains Filter Unit	£2.15s. 0d
774	Receiver Mounting Blocks (Black)	11s. 6d pr.
811	Loudspeaker, Diecast(Polychromatic Grey)	£3. 3s. 3d
812	Receiver Mounting Blocks(Polychromatic Grey)	11s. 6d pr.

TRANSMITTING AND NEUTRALISING CONDENSERS

481	Midget Neutralising Condenser 1.5 to 4 pF	3s. 9d
532	Single Section 150 pF	£17. 1s. 0d
699	Neutralising Condenser 2 - 12 pF	£1.11s. 9d
756	Neutralising Condenser Disc type 8 to 1.5 pF	9s. 6d
815	Single Section 60 pF.One end plate 2" square	16s. 0d
816	Single Section 175 pF " " " " "	17s. 6d
817	Single Section 250 pF " " " " "	£1. 0s. 0d
831	Split Stator 25 x 25pF.Two end plates 2½" sq.	£1. 9s. 0d
832	Split Stator 50 x 50pF " " " " "	£1.15s. 0d
833	Split Stator 100 x 100pF" " " " "	£2.12s. 6d
834	Differential 100 x 100pF" " " " "	£2.11s. 6d

<u>Cat.No.</u>	<u>Description</u>	<u>List Price</u>
835	Single Section 230 pF. Two end plates $2\frac{1}{2}$ " sq.	£1.15s. 0d
836	Single Section 100 pF " " " " "	£1.10s. 0d
<u>MICRODENSERS</u>		
476	Split Stator 15 x 15 pF	8s. 0d
580	Single Section 12.5 pF	7s. 0d
581	Single Section 60 pF (screwdriver adjustment)	9s. 0d
582	Single Section 60 pF	9s. 0d
583	Split Stator 25 x 25 pF	8s. 3d
584	Butterfly 34 x 34 pF	8s. 9d
585	Single Section 100 pF	11s. 6d
586	Single Section 140 pF	12s. 0d
587	Butterfly 15 x 15 pF	10s. 0d
588	Single Section 27.5 pF	8s. 0d
589	Single Section 54 pF	9s. 0d
719	Differential 25 x 25 pF	8s. 3d
738	Single Section 100 pF	16s. 6d
739	Butterfly 8 x 8 pF	10s. 0d
<u>MINIATURE MICRODENSERS</u>		
551	Butterfly 25 x 25 pF, 90° rotation.	13s. 6d
552	Split Stator 25 x 25 pF, 180° rotation	13s. 9d
553	Single Section 50 pF, 180° rotation	12s. 6d
<u>KNOBS, DIALS AND SCALES</u>		
62	Pointer Knob and Dial	2s. 0d
590	Pre-set Control Knob and Escutcheon	3s. 0d
591	Instrument Knob $2\frac{1}{8}$ " diameter	2s. 3d
592	Instrument Knob $1\frac{5}{8}$ " diameter	1s. 6d
593	Instrument Knob $\frac{3}{4}$ " diameter	1s. 0d
598	Full Vision Dial	£1. 4s. 6d
784	Skirt Knob $3\frac{1}{4}$ "	2s. 9d
785	Instrument Knob $\frac{7}{8}$ " diameter	1s. 0d
786	Skirt Knob $\frac{7}{8}$ " diameter	1s. 4d
841	Pointer Knob $1\frac{1}{4}$ " long	1s. 0d
842	Knob (841) and Dial (0-10 over 265°)	1s. 6d
843	Slow Motion Dial 4" diameter	17s. 9d

<u>Cat.No.</u>	<u>Description</u>	<u>List Price</u>
844	Knob and Dial 2" diameter	3s. 0d
846	Bar Knob $1\frac{3}{4}$ " long	3s. 6d
872	Miniature Slow Motion Dial $1\frac{3}{4}$ " diameter	16s. 6d
875	Knob with skirt $1\frac{3}{4}$ " overall diameter	4s. 9d
877	Wing Knob $1\frac{3}{8}$ " across rib	2s. 6d
878	Miniature Skirt Knob 5/32" hole	1s. 3d
1027	Pointer Knob 2.7/32" long	1s. 0d
1076	Instrument Knob $2\frac{1}{2}$ " diameter	3s. 6d
1089	Instrument Knob $1\frac{3}{8}$ " diameter	1s. 9d
2416P	Skirt Knob overall diameter $1\frac{3}{4}$ "	1s. 9d
<u>COILS, FORMERS AND BASES</u>		
537	Coil Former Plain (6 pin)	2s. 6d
538	Coil Former Threaded (6 pin)	2s. 9d
646	Former (ribbed 1")	1s. 6d
647	Small Coil Former Plain	1s. 0d
648	Small Coil Former Threaded	1s. 0d
706/LB	4 pin Coil	6s. 6d
706/Y	4 pin Coil	6s. 6d
706/R	4 pin Coil	6s. 6d
706/W	4 pin Coil	8s. 6d
706/P	4 pin Coil	8s. 6d
706/G	4 pin Coil	8s. 6d
706/BR	4 pin Coil	8s. 6d
775	Coil Stand (4 pin)	2s. 9d
783	Coil Stand (2 pin)	2s. 9d
707	4 pin Base (for 706 Coils)	2s. 6d
763	4 pin Former Plain (as used on 706 Coils)	2s. 0d
765	4 pin Former Threaded (as used on 706 Coils)	2s. 3d
781	2 pin Coil Former	2s. 0d
782	2 pin Coil Base	2s. 0d
847	Polystyrene Former	2s. 6d
864	Choke Former ( $2\frac{1}{2}$ " )	8d
865	Choke Former (1.11/16")	6d
866	Choke Former (1" )	6d



<u>Cat.No.</u>	<u>Description</u>	<u>List Price</u>
867	Choke Former (1")	9d
964	6 pin Base	2s. 0d
1090	Frequentite Former	8s. 6d
1091	Frequentite Sub-Base	9s. 6d
1092	Frequentite Base	8s. 0d
<u>R.F. CHOKES</u>		
737	Choke 2.5 millihenries inductance	3s. 3d
776	Choke " " "	4s. 3d
1010	Choke 1.25 " "	2s. 3d
1011	Choke 5.6 microhenries "	1s. 9d
1022	Choke 1.5 millihenries "	3s. 6d
1066	Choke 13 " "	4s. 3d
<u>INSULATORS</u>		
564	Red Moulded Insulator	1s. 8d
565	Black Moulded Insulator	1s. 8d
695	Load-Through Insulator	1s. 0d
766	"Tee" Insulator	16s. 6d
767	"Tee" Insulator	16s. 6d
794	Load-Through Insulator	6s. 6d
916	Stand-off Insulator	1s. 6d
946	Aerial Lead-in Insulator	3s. 9d
966	Pyrex Insulator	1s. 6d
1018	Ceramic Load-Through Insulator	2s. 9d
1019	Miniature Stand-off Insulator	7d
<u>RACK EQUIPMENT</u>		
874	Three-way Equipment Rack(to take 3 x 873)	£1. 7s. 6d
873	Complete Rack Mounting Cabinet Assembly	£2.18s. 6d
861	Spare Panel for Cabinet	7s. 3d
862	Spare Chassis	8s. 6d
<u>CHASSIS, CABINETS, BOXES AND HANDLES</u>		
643	Diecast Aluminium Chassis 8½" x 5¼" x 2⅝" deep	12s. 6d
644	Metal Cabinet 7" high	£1. 8s. 0d
727	Diecast Aluminium Chassis 12" x 9" x 3" deep	£1. 4s. 0d
787	Cabinet	£3.18s. 6d

<u>Cat.No.</u>	<u>Description</u>	<u>List Price</u>
788	Chassis (for 787 Cabinet)	8s. 3d
650	Diecast Box	7s. 2d
608	Large Cabinet Handles, Chromium Plated, $7\frac{1}{2}$ "	8s. 3d
635	Small Cabinet Handles, Chromium Plated, 3"	6s. 9d
<u>I.F. AND B.F.O. TRANSFORMERS</u>		
728	IF Transformer 10 Mc/s	12s. 6d
851	IF Transformer 455 kc/s	7s. 6d
852	BFO Unit 455 kc/s	6s. 6d
853	IF Transformer 5.2 Mc/s	7s. 6d
854	Discriminator Transformer 5.2 Mc/s	8s. 6d
855	BFO Unit 5.2 Mc/s	6s. 6d
856	IF Transformer 10.7 Mc/s	7s. 6d
857	Discriminator Transformer 10.7 Mc/s	8s. 6d
<u>COUPLERS, SHAFTS AND BRACKETS</u>		
50	Flexible Coupler Large	2s. 9d
529	Flexible Coupler Medium	2s. 6d
550	Flexible Coupler Small	2s. 6d
530	Flexible Driving Shaft	7s. 6d
708	Metal Bracket	1s. 4d
1007	Adjustable Insulated Bracket	2s. 9d
1008	Extension Control Outfit	3s. 6d
<u>MISCELLANEOUS</u>		
122T	Metal Tipped Trimming Tool	1s. 8d
125T	Valve Ring Locking Tool	1s. 4d
534	Ten-way Plug with Cover	8s. 0d
535	Ten-way Socket	5s. 0d
549	Gland Fittings (for 534)	2s. 3d
562	Small Valve Cap (9mm)	1s. 4d
563	Large Valve Cap (9/16")	1s. 4d
649	5-way Tag Strip	1s. 0d

Issued by:  
Stratton & Co. Ltd.  
Birmingham. 31.

November, 1953.



## 940 with Low Gain

This set was bought privately through an advert in a magazine. Needs attention, was the description but even at £45 it was decided to add it to the collection.

A first look inside did not show anything out of the normal for a 940, a few soldered joints did look newish and so did some of the resistors. These were not of the same make as the older originals. After this visual check was complete it was decided to apply power and do some simple tests, 'on air'.

The 940 warmed up okay but then the problems started. Even with all gains fully up the audio output on strong signals was minimal, hardly enough to operate phones never mind the speaker.

After voltage checks all appeared to be okay as per the manual table it was decided to do some signal tracing starting from the AF stages, then back to the IF input, then back to the RF input.

As it happened the tests from the AF input, done with an audio signal fed into the rear panel sockets showed very low gain through from here to the speaker. A quick look showed that the 0.01 muf coupling from the AM/SSB switch had been replaced with a new, but seemingly very small condenser, new shiny soldered joints were a tell-tale also. It was necessary to unsolder this condenser to read the value printed on the case. Surprise - surprise, this was not the required 0.01 muffs but was a 100 puffs ceramic type. Replacement of this item with a correct 0.01 muffs rated at 350 vDC restored what appeared to be normal gain to the 940 but there was more than normal hum and so further tests had to be done to locate the reason for this

This was easier, no soldering necessary. A simple replacement 6AL5 cured the excess hum. Further checks showed a heater/kathode leakage on the old valve - which was immediately binned.

The 940 was now put through the full alignment routine as per the manual text. A final check alongside the station 830/9 showed that the 940 was up to par and it was boxed up.

Externally the set was almost mint, one or two transit scratches on the case but a perfectly clean front panel. For the price paid Dennis now has a second station receiver which is every bit as good looking and sounding as the 830. Selectivity may not be as good, but then is it ever with the 940 ?

## MIMCO 3873A

This receiver has been in Pete's possession for many years, a relic of his days in the MN as a ships Radio Officer.

That it had an Eddystone equivalent was not known until a recent correspondence with Ted showed that it was known to him as the EM34.

The only servicing work done over the years had been kept to occasional valve changes as and when needed. Possibly a total of 4-5 valves in some 20 years.

'Now however the problems could not be cured by swapping old valves for new. It was something more intimate than that, something in the 'guts' of the set.

Going over the receiver with an Avo showed that several resistors were way outside the specified values, and their allowed tolerances. R2 which ought to have been a ½ meg was way over the 1 meg mark, R7 at a 100kohm was now somewhere up around 400kohm. R13 was simply open circuit - no reading at all.

These were all replaced with more modern, low noise types of adequate rating, modern resistors tend to be smaller than the oldies and so 1 watt types were now fitted.

R63 and R64 both looked a bit sorry for themselves, cracked outer surface, and so they too were replaced with RS items of slightly higher power rating.

The soldered joints on the CZ6 thermistor looked to be 'dry' and so both were remade with proper high melting point solder - this item does get over warm in normal usage.

By now everything appeared to be on the mark and so a power on test was run. The receiver came on immediately after warm up, all voltages seemed normal and the sensitivity was - if anything - better. It was boxed up and once more went into service in the shack.

## Free Members Adverts

SWOP - Collector of Short Wave Magazines has some duplicate issues to swap. Please phone for list. Richard G4 ICP on 01376 584478. Thanks.

FOR SALE - Eddystone 958 in working order, with case, for £175. Buyer to collect and inspect. Call Robin G4 NEC on 01525 714566 (QTHR, Bedford).

FOR SALE - Shack clear out, Eddystone 840 + manual, fair condition, but a bit deaf, £70 ono. Belcom Liner 2, 2 metre ssb + 30 watt linear transverter, £50 or nearest offer. TS 700G 2metre multimode at £120 o.n.o. A4 to A5 photocopying done, please ring for details. Ring Ron on 01207 284144.

WANTED - Model 1650/1, /2, /3, or /4. This must be in mint condition and preferably cased. With preselector, full coverage and original spec; I am prepared to pay the asking price plus carriage. James Sainsbury, Enton Orchard, Enton Green, Godalming, Surrey, GU8 5AN. 014483 861293.

FOR SALE - Eddystone 358 complete with PSU and some coils, £50. Perdio shirt pocket tranny 'MINI-SIX', £10. Philips PCR Rx with front speaker, correct PSU, £50. All plus postage and packing. Peter on 01372 454381 or 0374 128170 anytime. Thanks.

WANTED - dead or alive model 850/2 and 880/2 receivers. Must be complete. Ring Rob on 01636 686392 (home) or 0181 214 3238 (work). Thanks.

WANTED: Eddystone 830 or 940, must be good condx & working order. Dave Jones, Llanelli, S Wales. 01554 775790. E-mail daiungoed@aol.com

WANTED: Eddystone 830, must be good, clean, and working. Call Peter 01438 871350 (Herts)

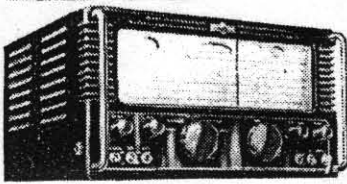


APRIL, 1962

WIRELESS WORLD

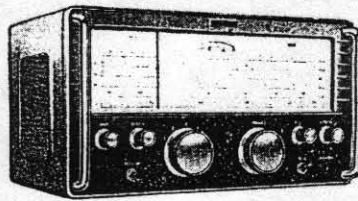
49

*This advertisement invites **YOU** to contact* **HP RADIO for EDDYSTONE RADIO RECEIVERS**

**EDDYSTONE 680X**

A 15 valve communication receiver with many refinements, including crystal filter, variable selectivity "S" meter, push-pull output and stabilized supply to oscillator stages. 1110 kc/s to 480 kc/s and 2.5 to 30 Mc/s in 5 switched bands. Electrical performance, sensitivity for 50 milliwatts, 15 db signal/noise ratio, 4 microvolts on all ranges.

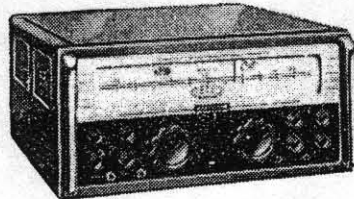
£140.0.0

**EDDYSTONE 840C**

Communication receiver at a moderate price. 8 B8A valves in a straightforward superheterodyne circuit. 5 wave bands 30.6-10.5 Mc/s, 10.6-3.7 Mc/s, 30.6-10.5 Mc/s, 10.6-3.7 Mc/s, 3.8 Mc/s, 1.4 Mc/s, 205-620 Metres. Sensitivity better than 10 microvolts. Selectivity 30 db down to 10 kc/s off resonance, AC/DC internal speaker. £58.0.0

**EDDYSTONE 880**

The Eddystone 880 high stability communications receiver has been designed expressly for use in professional communications systems. Tuning range is from 500 kc/s to 30.5 Mc/s. Please write for technical specification. £380.0.0

**EDDYSTONE 888A**

A 12 valve receiver designed for the amateur bands, giving full bandspread. Double superheterodyne with high selectivity and excellent signal to noise characteristics. Crystal calibrator audio filter, separate gain controls, oscillator trimmer. Frequency 1,800-2,000 kc/s, 3,500-4,000 kc/s, 7,000-7,300 kc/s, 14,000-14,350 kc/s, 21,000-21,500 kc/s, 28,000-30,000 kc/s. £110.0.0

**EDDYSTONE 870A**

A compact, precision built receiver for the home, giving news and entertainment from the whole world. 5 wavebands, vernier device, AC/DC operation, built-in mains filter and loudspeaker. Two tone metal cabinet £33.0.0.



**HP  
RADIO  
SERVICES LTD**

51, COUNTY ROAD  
LIVERPOOL, 4

HIRE PURCHASE TERMS OVER 1 YEAR				
Model No.	Cash Price	Deposit	12 Monthly	of
870A	£33 18 0	£6 16 0	£2 8 8	
840C	£58 0 0	£12 0 0	£4 2 6	
888A	£110 0 0	£22 0 0	£7 17 8	
880X	£140 0 0	£28 0 0	£10 0 8	

HIRE PURCHASE TERMS OVER 2 YEARS				
Model No.	Cash Price	Deposit	24 Monthly	of
870A	£33	£6 12 0	£1 5 4	
840C	£58	£12 0 0	£2 4 0	
888A	£110	£22 0 0	£4 4 4	
880X	£140	£28 0 0	£5 7 4	
SS0	£380		Cash Only	

Carriage Paid per Passenger Train.

Most carefully packed to ensure safe delivery.

If payments are completed in 6 months, ONLY CASH PRICE WILL BE CHARGED.

## AERIALS and FEEDERS

Many EUGers subscribe to the theory that the bigger and more complicated the aerial system, then the bigger and stronger the signals received. this MAYbe true but it is NOT ALWAYS so.

Possibly the most important factor is correct matching between the aerial, the feeder(s), and the receiver input.

Another important factor is a balanced input circuit where locally generated QRM can be eliminated whilst keeping MOST of the incoming signal intact.

Earth systems provided by the electricity authority these days are next to useless for 'radio' purposes since they are prolific carriers of local QRM. A good installed earthing system by way of copper rods into moist earth will usually be almost free of local QRM.

Now, using a dipole, or doublet, balanced around earth the signals need to see a matched feed line from the aerial itself and thence into the receiver front end

For receiving purposes a simple wire dipole will bring in almost any signals that are there, within its bandwidth (length of arms). The simplest, yet effective, feeder to use with such a wire dipole must be the flat twin, plastic covered such as is sold for speaker connections. This may either be all in one with the arms of the dipole, i.e. the flat twin is split down its length to make the two arms - nosoldered joints then necessary. Or it may be soldered to the two arms of the dipole - the joints must then be weather sealed with self amalgamating tape.

At the receiving end this feeder must be fed into the receiver input in such a way that both arms are balanced about the earth connection, or seen to be at RF.

On most Eddystones this is accomplished by removing the link at the rear which connects the bottom of the input windings to chassis/earth. The chassis/earth must still have the earth lead connected to it.

The above configuration will give you the best matched input, to your Eddystone, that can be achieved using a simple wire doublet, the proof of the pudding is in the eating, so go ahead and try it

Derek.

## Methodical Engineers.

A new company has been formed to take over the above named. Aircraft Spares and Materials Ltd will now market the stock previously sold by Methodical Engineers. They have a fully computerised listing by catalogue numbers of many thousands of spares dating from WW II to the present day.

If you need a Jones plug or socket, electrical or pneumatic parts for anything from a Tiger Moth to a T. 1154 then call them on 01268 792681. Don't say something like "I want a doofer for a model dooby" or you will get nowhere !! Get the precise part name/number and they will then fall over themselves to help you. Ted.



## Where is G6SL ? ? ?

A nice letter from Steve asking me what I know about the fate of G6SL the Strattons/Eddystone callsign - now that Chris has left and there is apparently no amateur interest at the Company now.

I have to admit ignorance here, my interests have never been very 'Amateur' orientated. I guess the correct person to answer this query is Graeme, or Chris himself. My understanding at present is that the callsign is inactive and Graeme is going to ask Chris what the situation is, maybe we can activate it as an EUG station for special events? Maybe as one EUGer has already suggested we (well Graeme or Chris) can apply for a special GB3 call, i.e. GB3 EUG? I have left this matter in the very capable hands of Graeme so I imagine that when he is back from his foray into the wilds of Cumberland we shall hear more. Do please note, - none of this pseudo mish mash of Cumbria for us, it is either Westmoreland or Cumberland. Ted

\*

## From Glasgow - - -

Bill Gibson writes that he has still not had any help with his 940 query from a previous Newsletter, he is still hopeful though so IF you can help then please do. He also mentions having bought an aerial amplifier from Birkett's of Lincoln. He is puzzled by the valve types employed - E186F and wonders what they are. These are so called Mullard Special Quality versions of the EF186 Bill and this ought to be easier to find in your data books. However my info is that they are an improved version of the E180F (EF180) and this is in most books, it is in Peter Lankshear's attached booklet of Eddystone valve types and there are equivalents listed. Ted.

## Newsletter Index, 43 to 48.

This continuing task by Anthony Richards now spans from Issue ONE of the N/Ls to Issue FORTY-EIGHT and I have got a copy as has Graeme. A check through it has so far shown no boo-boos Anthony, the EB34 error was a fluke last time pal! I have already found myself using this extension to my previous index in order to locate items referred to in my mail. It really does Anthony a lot of credit, and shows his dedication to EUG and EUGers, so Thanks from us all. If any EUGers want their copy, of the full Index to date, or just this latest addition then please contact Graeme as I have no copying facilities here. Ted

## Those Blue Print Register Copies.

My typed up copies are now in the hands of Dave Simmonds who will do us a fair copy and then a master will go to Graeme so that EUGers may order their own copy. This old register really is a masterpiece and is so choc full of info that it is required reading for anybody with an interest in the products of Strattons/Eddystone. You will not be disappointed. Ted.

\* SEE BACK PAGE - GRAEME

# RADIO RAMBLINGS

*Gottings from my Notebook*



By

Graeme Wormald

G3GGL

SEASON'S GREETINGS to all our readers, as the columnists say, and a very Merry Christmas to one and all. This is EUG's ninth December Newsletter and probably the heaviest. Speaking of weight: although our overseas members pay a standard subscription, there are actually three postal rates involved. When despatching Newsletters it's my habit to take all the Overseas ones to our local Post Office here in Bewdley and post them together, at the same time buying the several hundred stamps needed for the UK members. You have to post over 500 items to qualify for bulk posting rates (and automatic stamping). They don't take into account the fact that EUG Newsletters are ten times the weight of ordinary 'flyers'!

ANYWAY, LAST MONTH I took them in and presented the 'European' batch first, then the 'North American' batch; then: "... and this lot is for the antipodes." There was a long pause whilst the counter clerk scanned the rate-tables. Finally she asked: "Is that in the Caribbean?" (*Collapse of stout party.*)

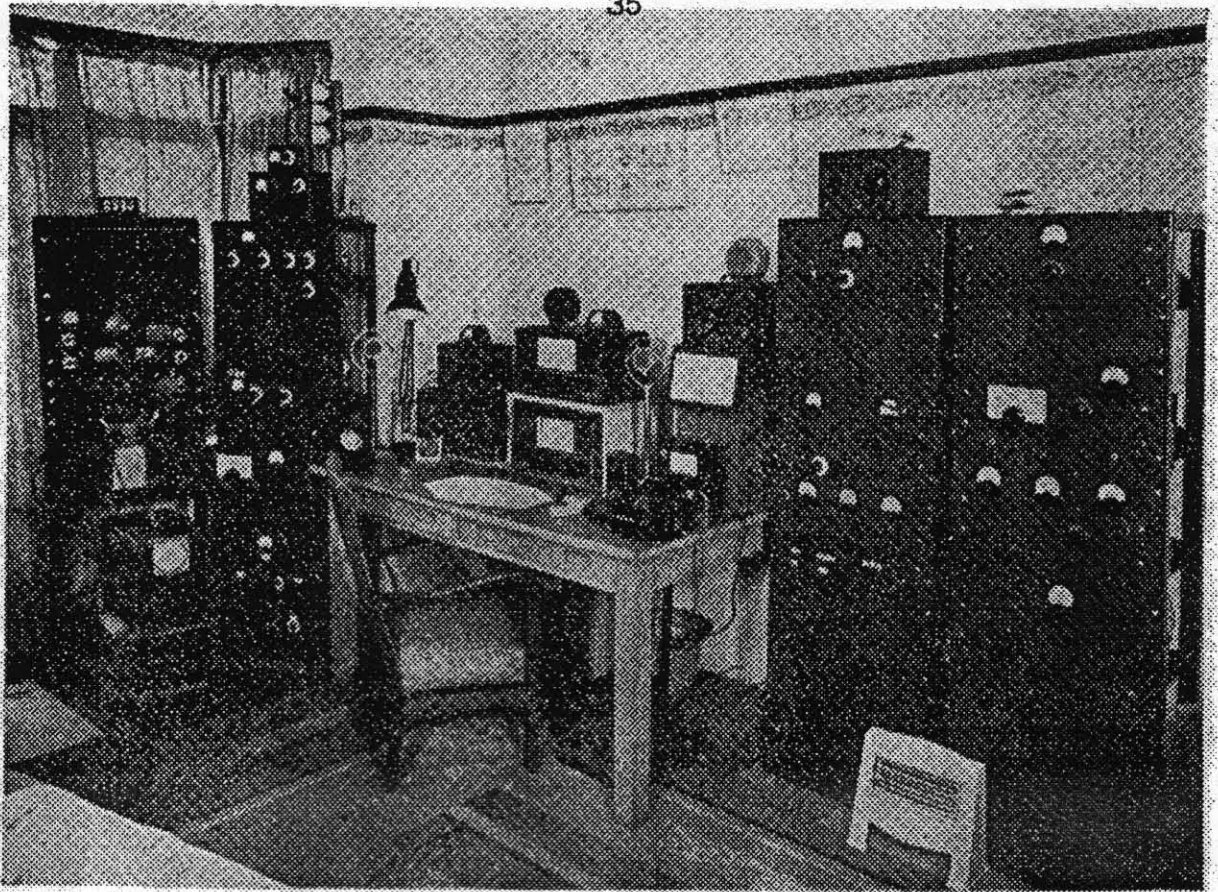
NEXT I MUST thank members who were kind enough to telephone at the end of October when Bewdley received star coverage on local, national, and international television due to the unseasonal and anti-social behaviour of the River Severn (Britain's longest), whose banks Bewdley straddles. The waters managed to invade 200 mainly medieval cottages, in the worst spate for 30 years. Sabrina Drive is located about 100 yards off the top of television screens in the shots of the riverside cottages, but has the advantage of being built in modern times (1980) and allowance made for the fickle nature of the eponymous river sprite. The ground was lifted above flood level before building took place.

ELSEWHERE IN THIS Newsletter there is a piece (presented anonymously by Simon G8POO!) which has a picture of two Eddystone speakers, one of them being a hornier of the 'twenties. The owner (who has over a hundred horners) said he thought it looked like a 'badged' REEVO speaker. I spoke to Bill Cooke who confirmed that it almost certainly was badged (a common practice of Harold Cox in the early years) but may well have been an S.G.Brown product. Reevo, of course, was the large Wolverhampton electrical manufacturer founded by Fred Reeve.

His only son, Jim, retired to Bewdley some years ago and intrigued me with tales of running the gauntlet through the German lines to Eindhoven in late 1944. A captured German Army truck was driven to the Philips factory by night and loaded with the latest Nazi goodies, then returned for Air Ministry Scientific Intelligence to examine! Unfortunately Jim became SK last year so I can't check with him. He once told me that his father sold so many electric lamp-posts to the authorities in Brazil that the word 'Reevo' entered Portuguese as a generic noun for lamp-post. Rather like 'Hoover' for vacuum cleaners in Britain.

*continued . . .*





" . . . the station of G6XJ (Birmingham). It can almost be described as an 'all-Eddystone station' - and well it might, for G6XJ himself is Sales Director of the well-known firm manufacturing Eddystone equipment. . . "

So reads the caption on this photograph in the December 1949 edition of the Short Wave Magazine; the station of Arthur Edwards, G6XJ (see this month's 'Cooke Report'). It looks as if a month's output from the Bath Tub went into making it! Two Rx's, one a 640, the other (according to Bill) a 504 - but could it be the new 680? Two round speakers, an S-meter, a modulation meter, and countless dials. I asked Bill, who well remembers visiting this shack of shacks, how Arthur managed to fix it with his XYL. 'Quite easy,' said Bill, 'he was a confirmed bachelor and this was the dining-room of his parents' house.' I should have guessed!

First licensed in the 1920's Arthur is seen below during World War Two. He was a pilot with the Fleet Air Arm, the flying branch of the Royal Navy, whose carrier-based mainstay was the Fairey Swordfish torpedo bomber. Very dated, but as tough as old boots, the Swordfish was universally known as the 'Stringbag'. The Fleet Air Arm Museum at Yeovilton, Somerset has a fully airworthy example, which thrills crowds at airshows throughout the country. What a sight!



THIS MONTH'S 3 x EF50 project is one which was developed by S.W.Amos of the B.B.C. Engineering Training Department, Wood Norton Hall, in the Vale of Evesham. The history of Wood Norton is almost as interesting as that of the EF50! It was built in 1906 by the Duke of Orleans, the pretender to the French throne (France, of course, having been a Republic since 1871). It was modelled on a Loire Chateau and no expense spared in its appointment. In 1910 the Duke's daughter married in the (then) tiny Roman Catholic church in Evesham and the reception which followed at Wood Norton was grand beyond avarice. It bankrupted the Duke and the Hall became a girl's boarding school round about the first World War. In its turn that went broke in the mid 'thirties and was bought by the B.B.C. as an 'emergency' replacement for Broadcasting House (BH). The clouds of war were gathering and the Corporation was very mindful of the effect of a high-explosive bomb on its still very new (1931) headquarters.

The B.B.C. had barely moved in when the Hall was mysteriously ravaged by fire, the top floor being destroyed completely except for one maid's room (which was to become the laboratory of yours truly in 1955). As an emergency measure a flat roof was fitted. A miniature version of BH was installed and performed sterling wartime service (another fascinating story). After 1945 it was, of course, redundant. Until somebody had the bright idea of turning it into a training school, which it still is. A few years ago the missing top floor was restored and Wood Norton now doubles as an international broadcasters' conference centre.

THE CHRISTMAS SPECIAL this year may disappoint some members but please many others. It is a copy of the Eddystone sets of 1946-56 from 'Radio & Television Servicing' by Molloy & Poole. I know that some of you have the originals of these, but I also know that most of you don't. This comes to light from time to time when members telephone me with minor technical queries and the first thing I ask is 'Have you got Molloy & Poole?' It came to a head recently when a member requested a handbook for a model 680 (the original, not the 680X). Christine hadn't got one. Ted hadn't got one. I hadn't got one. We had to go to M & P for the circuit and servicing details and make up a 'handbook' with a copy of the sales sheet. So here you are; fourteen service sheets for the price of none! All the early post-war valve sets (but, of course, not the military ones such as 730 & 770). The material was prepared by Jerry Walker, G5JU, well-known member of Stratton staff.

THE SURVEY OF members' Eddystone receivers is now reported after several false starts. I kept compiling the list and the postman kept bringing more! Anyway, here's the final result, ready or not . . . 63 members responded out of a possible 260. Ownership varied between zero (!) and three figures (just!). The final count was 450 sets, which averages out at seven sets per response, but in fact most members reported an ownership of 2-4 sets. The winner in the numbers race was the EC10-series, reaching a grand total of 43. This was followed by the 730-series and 770R at 25 each and the 940 at 22. The 830-series might have been expected to produce more than 19. Valve-sets outnumbered solid-state by 7:2.

THE BIGGEST SURPRISE was the paucity of pre-war models and the complete absence of the wartime 400. The low numbers of the 670-series may be due to the fact that it was marketed solely as a 'cabin set'; also the original 670 was not available in the UK due to currency restrictions in force at the time. *continued . . .*



SURVEY OF EUG MEMBERS' RECEIVERS  
NOVEMBER 1998  
(Sequence reads from left to right)

## PRE-WAR SETS:

Eddystone Twin...1	Sci Portable Three...1
E.C.R.....2	Improved Everyman....1

## WARTIME SETS:

358.....4	358X.....8
-----------	------------

## POST-WAR VALVE SETS:

504.....6	556.....2	640.....10
659.....4	659 with floor baffle spkr....1	
659/670..10	670.....1	670A.....3
670C.....4	680.....4	680X.....14
700..... 2	710.....2	

*(730 series - 25)*

730/1a....3	730/4....20	730/6.....1
730/10....1	740.....9	750.....13
770R.....25	770U.....10	770S.....1
770RmkII..7	770UmkII..3	820.....4

*(830 series - 19)*

830.....1	830/3.....3	830/4.....2
830/5.....1	830/7.....8	830/9.....4
840.....1	840A.....14	840C.....15
850/4.....5	870.....5	870A.....14
880.....1	880/2.....3	880/3.....1
888.....4	888A.....9	890.....1
909A.....5	909A1.....1	909A/2....1
909A/3....2	930.....4	940.....22
EA12.....15		

## SOLID STATE SETS:

960.....2	990R.....7	990S.....7
EC964/2...2	EC964/7A..1	1570.....1
1990R/2...3	1990R/3...3	EC958.....6

*(EC10-series - 43)*

EC10.....27	EC10mkII..12	EC10A.....3
EC10A/2/RM..1	EM34.....1	EB35.....6
EB35mkII....2	EB35mkIII..2	EB36.....1
EB37.....2	40A.....4	1001.....1
1002/1.....2	1004.....2	1560.....2
1650/6 ....1	1650/9.....1	1830.....1
1837/2.....1		

Models which are 'missing' are not owned by members responding to the survey. 63 members responded (of a possible 260).

## BIG EATS IN DERBY



BROWSING THROUGH a vintage Short Wave Magazine I spotted this photograph of the Derby & District Amateur Radio Society dinner in February 1949. Nothing very exciting about that, you might say. Then I read the caption, " - G5YY (centre, top table) took the chair, with G2CVV, Derby's honorary secretary, on his immediate left."

G2CVV, Fred Ward is, of course, one of our EUG members, still resident in Derby. Congratulations, Fred, on staying the course. Weren't those club dinners the bee's knees!

## A CHRISTMAS STORY . . .

There are two types of radio buff; the social and the acquisitive. The first may be seen at rallies sipping coffee or knocking back ale at the bar, surrounded by kindred spirits, catching up on the year's gossip. The latter can be seen scurrying round with rucksack and carrier bag, eagerly scanning stalls in the flea-market. I must admit belonging to this latter category.

Last autumn I was seeking out the latest must-have bargains and hurrying past a stall featuring CD ROMS. Suddenly my eye caught a repetitive photo-flash. A small circuit-board carried a diminutive xenon tube which flashed steadily once a second. Beside it was a pile of similar boards carrying the legend "12-volts, £1.50 each". An instant must-have. Back home the XYL and the dogs watched pityingly as I dragged in the standby car battery and coupled up the new toy. Success!

Christmas arrived all too soon and out came the festive decor. Neighbour's windows were draped with flashing festoons and illuminated Santas. We were in grave danger of being upstaged. Then I remembered my trump-card. The xenon tube. It was sealed in a Marks & Sparks plastic peanut jar (carefully hoarded from the previous festivities) and hoisted to the top of the highest aerial. You could see the flashing beacon for miles. Well, nearly.

On New Year's Eve there was a rap at the door. Two constables and a Panda car.

"Good evening, gentlemen."

"Good evening sir. Is that your flashing light, sir?"

"Flashing light?"

"Yes sir, up in the air."

"Oh, that! It's a beacon."

"A beacon, sir?"

"Yes, constable, a reindeer beacon."

"A reindeer beacon, sir?"

"Yes, to guide Santa on his way."

"Really, sir! We thought perhaps it was a burglar alarm . . . "

GRAEME - G3GGL



# Midget Three-Valve A.C. Mains Receiver

*Adding Long Waves and a*

*Stage of Tuned R.F. Amplification to the Original Two-Valve Receiver*

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THE article in the March, 1949, issue on a midget 2-valve a.c. mains receiver aroused much interest and the author has received many requests from readers for guidance in adding an r.f. stage, a long-wave band or both to the receiver. These requirements are met in the t.r.f. model described in this article; it is a 2-band receiver using EF50's in r.f., detector and output stages. The sensitivity is markedly superior to that of the 2-valve receiver and is such that worthwhile results can be obtained on signals of less than  $100\mu\text{V}$  amplitude; it should be adequate for reception of B.B.C. programmes in most parts of the country whereas the original 2-valve receiver was intended for use only near high-powered transmitters. The new receiver, illustrated in the accompanying photographs, is constructed on a chassis measuring  $9\text{in} \times 5\text{in} \times 2\frac{1}{2}\text{in}$ , the overall height being  $6\frac{1}{2}\text{in}$ . The 5-in diameter loudspeaker used with the new model is larger than on the original receiver and gives better quality. The total cost of the components for the new receiver is about £4 5s.

The circuit is given in Fig. 1; it has much in common with that of the 2-valve receiver and comparatively few additional components are necessary to modify the original set to the t.r.f. circuit. Tuning is by a 2-gang variable capacitor and the tuning inductors have standard values, commercial dual-

range coils (Denco type C) being used in aerial and intervalve circuits. To give high selectivity and to minimize the effects of different aerial constants on the first tuned circuit, shunt-capacitance aerial coupling is used, the low voltage gain of this form of coupling being largely offset by the high  $g_m$  of the r.f. valve. The primary windings of the aerial r.f. transformer are not used. The 470-ohm resistor  $R_1$  is necessary to preserve d.c. continuity in the grid circuit of  $V_1$  and also to make the receiver input impedance low at 50c/s; with a high value of  $R_1$ , weak signals tend to be modulated at 50c/s.

EF50 valves are cheap and plentiful and because of their low heater consumption they are used in all stages of the receiver. The use of this valve as r.f. amplifier introduces a problem in controlling gain, because the EF50 is not a variable- $\mu$  valve, and whatever form of gain control is used must prevent overloading of the leaky-grid detector. The method finally adopted is shown in Fig. 1; a 50-k $\Omega$  potentiometer is connected in the primary circuit of the intervalve r.f. transformer and the slider is taken to the anode of  $V_1$ , this particular circuit being chosen to keep the damping of the detector tuned circuit constant, in spite of variations in gain setting. The gain control gives no protection against overloading of the r.f. amplifier but, of course, this receiver is

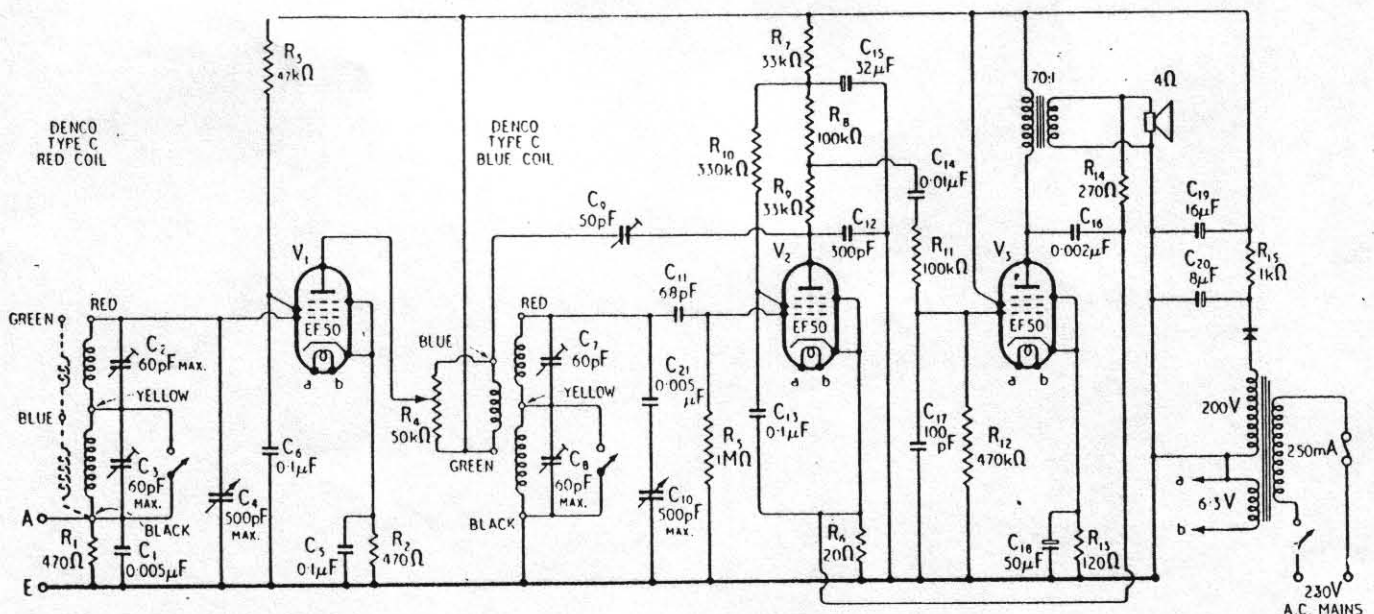
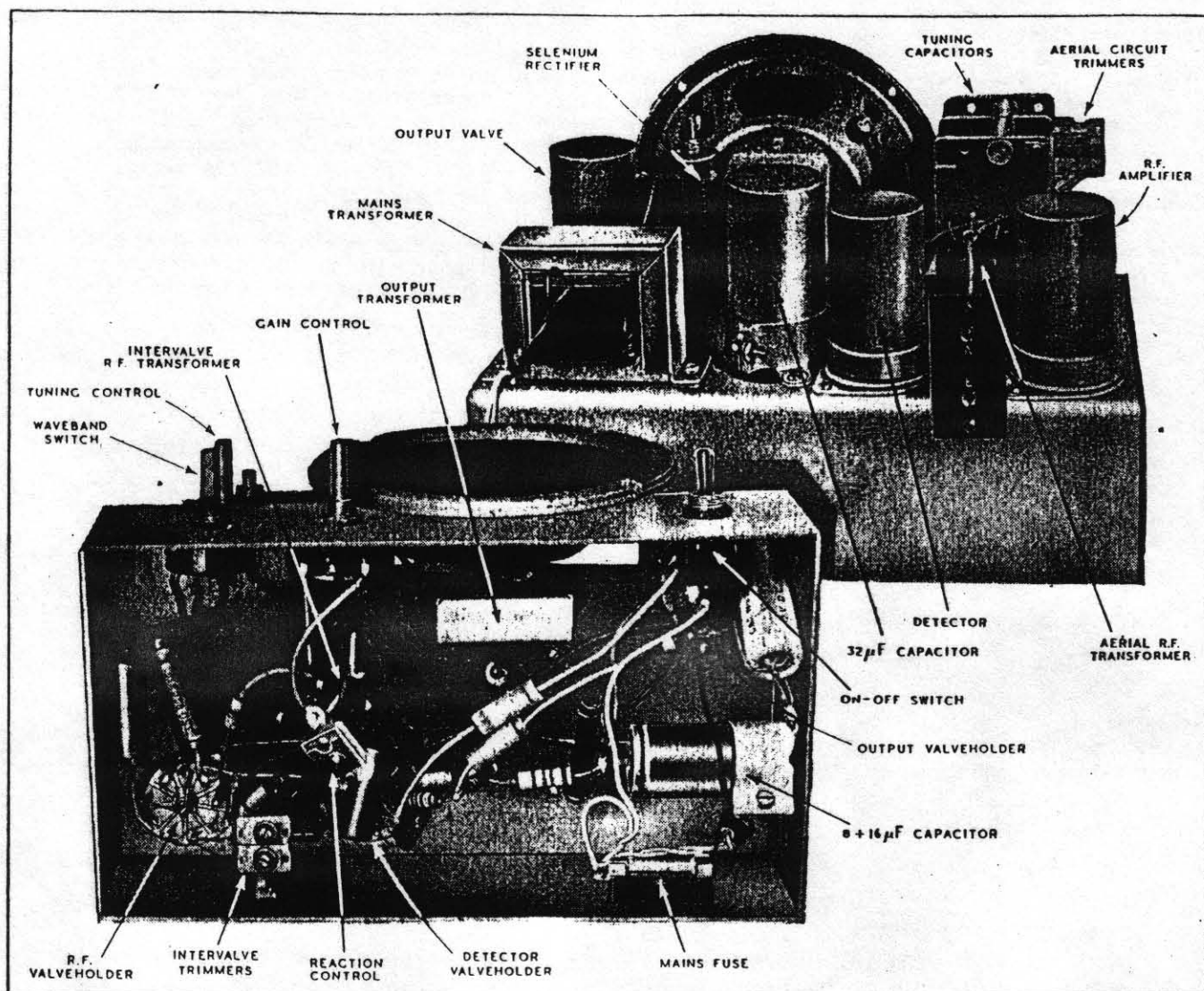


Fig. 1. Complete circuit diagram with component values. All resistors can be of 1-watt rating.



Two views showing the general layout of the receiver. To ensure r.f. stability the components in the grid circuit of the r.f. amplifier are mounted above the chassis and those in the detector grid circuit are located on the underside.

primarily intended for use in areas of comparatively low field strength. Nevertheless, the low voltage gain and high selectivity of the aerial circuit give good protection against overloading of  $V_1$  and no symptoms of cross-modulation have been noted using the receiver within a few miles of a high-power transmitter.

Reaction is applied by a small pre-set capacitor; this should be adjusted well below the point of oscillation, but even so gives a useful improvement in gain and selectivity.

The  $0.005 \mu\text{F}$  capacitor  $C_{21}$  is included to simulate the aerial-coupling capacitor  $C_1$  and makes the effective tuning capacitance in the intervalve and aerial tuning circuits approximately equal, thus ensuring good ganging at the low-frequency ends of the wavebands.

When an r.f. valve is used in the output stage, particular attention must be paid to post-detector r.f. filtering, for even a small r.f. signal in the a.f. amplifier can mar reproduction. Three measures are used to suppress r.f. signals in this receiver:  $C_{12}$  shunts the anode load of  $V_2$  and reduces the r.f. amplitude there; further attenuation is provided by

$R_{11}$  and  $C_{17}$ ; finally  $C_{16}$  connected between the anode of  $V_3$  and the cathode of  $V_2$  gives considerable negative feedback at radio frequencies without affecting the performance at audio frequencies.

As the gain control operates in the r.f. section of the receiver, a fixed amount of voltage negative feedback can be used in the a.f. amplifier and is provided by  $R_6$  and  $R_{14}$ . Fixed feedback is an advantage because it means that less h.t. smoothing is necessary for a given amount of hum; thus it has been found possible to reduce the value of the first smoothing resistor  $R_{15}$  from  $5 \text{ k}\Omega$  in the 2-valve model to  $1 \text{ k}\Omega$  in the 3-valve model, yet the hum of the new receiver is less than that of the original. By reducing the value of  $R_{15}$  the h.t. voltage is kept reasonably high (170 volts) in spite of the additional drain of the r.f. stage.

Apart from the alteration in the value of  $R_{15}$  the mains rectifying and smoothing components are identical with those used in the original receiver.

To align the receiver the trimmers  $C_2$  and  $C_7$  should first be set to their minimum capacitance and then advanced until a frequency of approximately 1,500 kc/s (200 meters) is received with the tuning capaci-



tors at minimum and the waveband switch set to medium waves. Finally, the trimmers should be accurately adjusted to give maximum output from the receiver on a signal near the high-frequency end of the medium-wave band such as the third programme on 1,474 kc/s. Trimmers C<sub>3</sub> and C<sub>4</sub> should be adjusted in a similar manner near the high-frequency end of the long-wave band, but on this band the trimmers should first be set at their maximum capacitance otherwise it may prove impossible to receive the low-frequency end of the band. The coil manufacturers (Denco, 355-9, Old Road,

Clacton-on-Sea) recommend a trimming capacitance of 70 pF for this band.

With many receivers the addition of an earth lead makes comparatively little improvement in reception, but with this receiver (and with the original 2-valve model) the addition of the earth lead makes a considerable difference, and it is recommended that a good earth connection be used whenever possible. Needless to say, a good aerial should also be used and it is perhaps worth stressing that the calibration and selectivity of this receiver are practically unaffected by the constants of the aerial used.

#### COMMENTS BY GRAEME, G3GGL, ON THE 'AMOS' 3 x EF50 Rx.

Looking back in time this is probably the most famous of the many 3 x EF50 sets which were published in the decade following WW II. That's one of the main reasons it's presented here - because it neither specifies 'Eddystone' parts nor covers short waves! But it could, quite easily; and students of home-constructed valve sets will find it a fascinating and well-written exposition. There are more offerings to come in future Newsletters and I, for one, haven't decided which to build yet! (I believe the 'Denco' coils specified here are back in production.)

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### QRX QRX QRX

Well that is your Xmas N/L, a bumper issue even before the Supplement is included! One thing not mentioned in the 5000 write-up is that this model was superseded by the Orion 7000 series and that even recently this model 7000 could be ordered and supplied. The EF50 receivers seem to have hit a nerve with some folks as besides our efforts in recent issues the 'HUM' version was the subject of a write-up in the last Radio Bygones mag. Next issue? well we have an Everyman Two Tx which according to the Blueprint could never have worked! and much more besides. So really the heading QRX - QRX - QRX is my way of saying do please wait patiently but listen out for issue number 53 - I would like to say Bigger and Better but one of these days the chap who holds the purse strings (G3 GGL) will say 'cool it Ted', 'let good fiscal policy reign at EUG'.

Have a very merry and thoroughly enjoyable Xmas all of you, may you all receive a new (but well used) Eddystone for your Xmas prezzie, may the coming year be a good one for all. Take care, TED.

#### LATE, LATE, MEMBERS ADVERTS

FOR SALE: Trio JR-60 Communications Receiver, 550kc/s-30mc/s plus 2 metres Amateur bands bandspread (C.1964) 15 valves, Q-multiplier, calibrator, with Mauritron circuit etc. £35. Call Richard 01376 584478 (Essex)

FOR SALE: Eddystone Receiver Mains Filter type 732 - offers.  
Call Trevor on 01844 261520 (daytime) or 01865 875689 (evenings) (Oxford)

FOR SALE: Eddystone EC958 High Stability solid state Rx, 10kc/s-30mc/s working, cased, £175. Buyer to inspect and collect. Call Robin G4NEC on 01525 714566 (Bedford)

## A SPECIAL CALLSIGN FOR E.U.G.?

### Official Position from the Radio Agency and the RSGB

by Graeme G3GGL

Several times this year members have raised the question of the User Group having its own distinctive callsign, in particular a GB3 Special Event call. On Page 33 of this issue, and also in Chris's *frontis*, the matter is again considered. You will have seen Chris's very interesting statement about G6SL, the original Stratton Company's experimental callsign, held by the founder of Eddystone Radio and using his initials (Stratton Laughton).

I have spoken today with both the Radio Agency (R.A.), responsible for issuing Permanent callsigns, and the R.S.G.B., responsible for issuing Special Event callsigns. Here are the results.

A callsign, once issued, is the 'permanent' property of the licensee and upon his death becomes the 'gift' of his next of kin. For instance, I am the 'guardian' of my late father's callsign, G3JQE. It cannot be re-issued without my written consent. At present it's being held 'on ice' for my son, G7BMZ, in case he ever passes the morse test! He then has the option of a new M/xxx call or a 1954 family call. In this way Chris, the current 'owner' of G6SL, may assign the call to anyone who is qualified to use it. The R.A. would then license the new owner to use it on the air. So that's one option.

New callsigns: it's possible to 'book' a new unissued callsign up to six months before it's due out. The next Class A call which would fit the Group is M/EUG but the RA tell me that it won't be issued for about two years. M1EUG, the next Class B, will come sooner, but I don't think it would be appropriate, we couldn't use it on the net. But any other member could 'book' it!

OTHER OLD callsigns: G/EUG and G4EUG, both Class A, are still active. G2EUG, G5EUG, and G9EUG have never been issued (and are not available). G1EUG, G6EUG, G7EUG, and G8EUG, are all Class B (and are still current).

Which leaves G3EUG, which was issued in 1948 but is no longer active. If the former licensee were still alive and would relinquish his right, then it could be ours. If he is dead and his next of kin could be traced, and could be persuaded to grant consent, then it could also be ours. The R.A. don't know who held it. The R.S.G.B. have it listed in their old call books and are searching it out. It's then up to us to find the family and persuade them that we are a worthy cause to inherit the callsign.

Special Event callsigns, ie GB3EUG, can only be issued for 28-day periods, which is not appropriate to EUG (unless it's in 2023 to celebrate the centenary!).

So there it is, chaps. More news next time.

NOTE (for SWLs and overseas members): Class A licencees are all-band operators (written exam plus Morse test at 12 wpm). Class Bs are exam only, VHF bands only, no Morse, no HF. There is much talk about reducing the Morse test speed to 5 wpm.