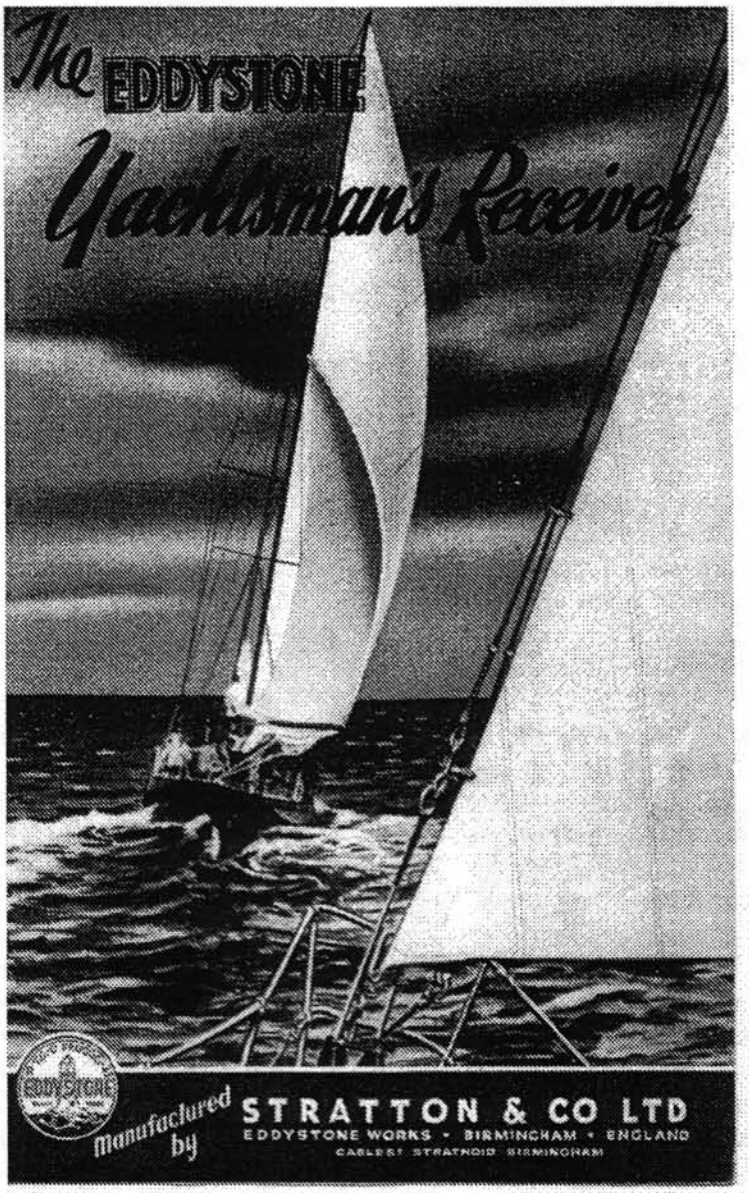
EDDYSTONE USER GROUP NEWSLETTER

Issue No 61 **June 2000**

FEATURED MODEL
"The Yachtsman"



A NON-PROFIT NEWSLETTER FOR EDDYSTONE COLLECTORS

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FRONTIS

Welcome to another edition of the Eddystone User Group Newsletter. I must say it seems to look better each issue. I particularly like the magazine feel to it. Well done all those who put such a lot of effort into giving the rest of us so much pleasure.

It was nice to see a number of you at the Vintage Fair this May, I am even beginning to recognise some of you who come to the local Midland rallies. I particularly enjoyed this year's event although I restricted my own purchases to a few books, ex Simon G8POO, although I did sell one later on in the day to another EUG member whose need was greater than mine.

Graeme is proposing to feature the "TARDIS" Multi-service FM Transposer System which we manufactured under licence from BBC Research in about 1990. Eddystone had for about 6 years enjoyed a good relationship with the BBC who were undergoing an FM re-engineering programme. They had designed transmitters but really needed someone to manufacture them. We went one stage further and licensed them for sale to others and paid the BBC a royalty for each one sold.

This was the foundation of our quite successful FM transmitter business. One of the last things that the BBC designed themselves was this relay system which was intended to provide up to six channels of FM relays (receive on one FM channel and transmit on another) in a single bay with input and output filtering incorporated. It was a high spec design and enable as little as 400kHz spacing between receive and transmit frequencies. Its predecessor had been at least two, sometimes three, racks of equipment requiring several days to install at remote sites.

With the TARDIS everything could be in one rack with all the inter-modulation checked out in the factory making it a one-day 'install and switch on' job at site. Most of them went into glass fibre kiosks on the top of hills and mountains. The BBC ended up having the filters designed and made in India as no one in UK could meet the specification (particularly on size).

They were all machined from solid aluminium blocks. I remember that we gave the Indian company an order for 44 pairs of filters and was able to take delivery of only 40. After several months trying to find out what was going on in India we sent over an engineer to see for himself. It turned out that the workforce were in dispute with the factory owners and rather than just go on strike, they burnt the factory down.

It took us about a year to sort that one out and I don't think we ever took delivery of the last two pairs. Still it was the best FM transposer in the world, albeit only likely to be of interest to those countries that had multi-channel FM networks such as the UK. We used some of the systems in the equipment we supplied to Rwanda. TARDIS was some clever BBC chaps' way of shortening its formal description to s**TA**ndard **R**eceiver-**D**rive **I**ntegrated **S**ystem.

I was talking to Graeme at the Vintage Fair about setting up some special event station using G6SL so that we can give the call-sign a good airing. Perhaps some kind of contest or certificate. If anyone has any ideas let me have them by e mail. I don't mind sponsoring a new QSL card for it.

My best 73's

Chris Pettitt – G0EYO
Patron (chris@g0eyo.freeserve.co.uk)

E.U.G. NEWSLETTER

ISSUE 61, JUNE 2000

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Founded and Presented by Ted Moore

Formatting & Distribution by Graeme Wormald G3GGL, Computer processing by Simon Robinson M5P00)

The Tenth Anniversary Issue provoked a number of letters, some from members who do not usually write. All comments re the success of EUG mean that the hard work of the 'team' has paid off. The further comments from everybody about the new format have ALL been positive *(-except one – Graeme)*, very good news for Graeme. Several members have made mention of the increase in subs yet nobody has so far complained

I do take other newsletters both radio related and other such as Investment guides and Car Clubs. When I consider what I get for those subs as compared with our subs and the size and quality of the EUG Newsletter then we come out on top. Graeme must have magical skills when it comes to dealing with the printer.

The NEC was also well reported by several members who did well in describing to me both their efforts at scouring the NEC for bargains and the EUG team's efforts on our stand. Several have mentioned their pleasure at finding David Simmons next to the EUG stand with his stock, expressing their hope that he will continue with this in the future. Several members got a bonus with a visit to the Classic Car Show but as one says, most bargains there cost much more than an Eddystone would.

Anthony has been trying to get me to go into print with my personal choices of the best looking, and most symmetrical models, I am not yet tired of living so I shall not get publicly involved here. Ted.

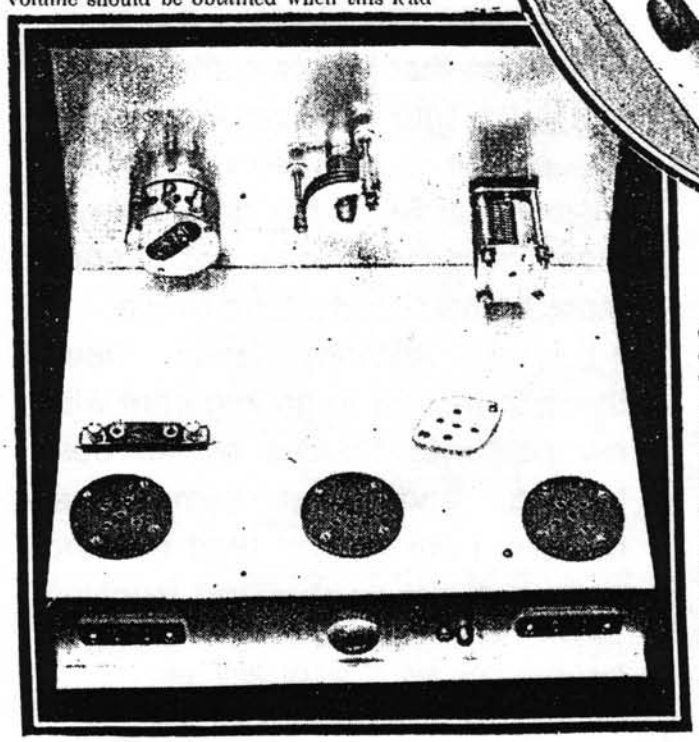
The BANDSPREAD Short-Wave Three

Adjusting and Operating Our Latest Short-wave Receiver

THE constructional details and wiring diagram of this receiver were given in last week's issue, and it is probable that hundreds of short-wave enthusiasts will have completed the constructional work by now. The wiring is so simple that no difficulty whatever should be experienced, but care should be taken to keep the under-chassis components clear of the metal surface. Resistances R1 and R3 have long connecting leads and therefore if there is a tendency for them to touch the metal chassis it will be advisable to place a piece of insulating material, such as empire cloth, underneath these components. Alternatively, their free ends may be secured to the nearest M.C. bolt by means of insulated wire. The only other point that needs mentioning is the volume control. The spindle of the specified control is insulated from the centre tag, and therefore it will not be necessary to use an insulating bush. If a non-specified control is used, however, it will be advisable to insulate the spindle from the metal panel.

Battery Leads

After the wiring has been carefully inspected, the battery leads may be joined up. H.T.3 should be plugged into the 120-volt socket of the H.T. battery, H.T.2 into a socket between 90 and 120 volts; greater volume should be obtained when this lead is plugged into the 120-volt socket, but the H.T. consumption will be greater than with the 90 socket in use. The voltage applicable to H.T.1 is governed by that applied to H.T.3. With 120 volts on the latter, H.T.1 should have approximately 36 volts, but the best socket can only be found by experiment. The H.T.— lead should, of course, be plugged into the — socket of the H.T. battery and the G.B.+ lead into the + socket of the G.B. battery, with the L.T. + and L.T.— leads connected to the + and — terminals of the accumulator respectively. G.B.2— lead must be plugged into the —9 socket of the G.B. battery, and G.B.—1 into the —4½ or —6 socket. As the H.T. battery is running down, it will be necessary gradually to lower the setting of G.B.—1, however. When the battery



On the left is the chassis, and on the right the coil and valves are in position.

LIST OF COMPONENTS FOR THE BANDSPREAD S.-W. THREE.

One short-wave coil, type B (Wearite).
One bandspread tuning outfit C2, C3 (Eddystone).
One 50,000 ohm potentiometer R6 (B.T.S.).
One air-dielectric pre-set condenser, Type SW.87 C1 (Bulgin).
Five fixed resistances (1 watt type) (Erie).
50,000—1 R1. (Erie).
100,000—2 R4, R5. (Erie).
1 megohm—2 R2, R3. (Erie).
Seven Fixed Condensers:
One .0001, Type 665 C8 (Dubilier).
One .001, Type 4501 C11 (Dubilier).
One .01, Type 4501 C9 (Dubilier).
Four .1, Type 4503 C5, C6, C7, C10 (Dubilier).
One 3-point on/off switch (B.T.S.).
Four chassis-type valve-holders, 3 four-pin, one 5-pin (Clix).
Two terminal Strips, aerial and earth and loud-speaker (Belling-Lee).
Seven wander plugs, H.T.—, H.T.1, H.T.2, H.T.3, G.B.+, G.B.1, G.B.2 (Belling-Lee).
Two spade connectors, L.T.— and L.T.+ (Belling-Lee).
One S.W. H.F. Choke, Type H.F. 3 (Bulgin).
One Type RC32 reaction condenser (B.T.S.).
One loud-speaker, Type 37M. (W.B.).
One pair headphones (Ericsson).
One Microfuse with Holder (100 m/A).
One Bandspread Three Cabinet (Peto-Scott)
One metal chassis 10in. by 7½in. by 2½in. (Peto-Scott).
Three valves, Types HP211, HP210 (4-pin), PP222 (5-pin) (Tungsram).

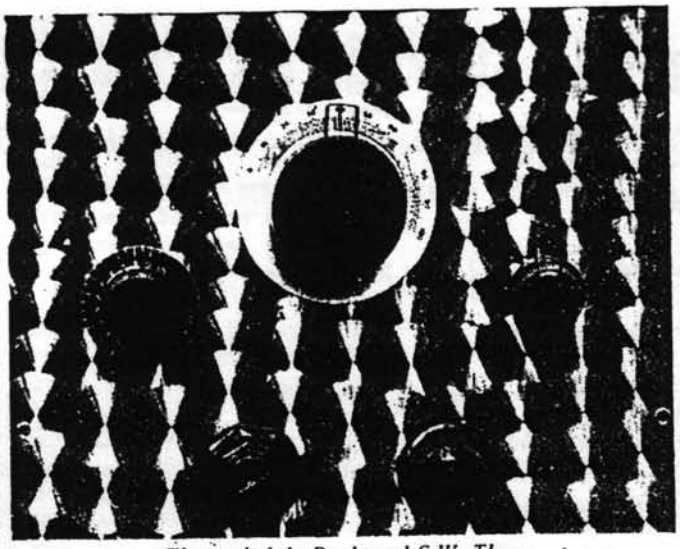
voltage has dropped to 80 volts, about —3 volts bias will be sufficient.

Aerial Series Condenser

When the battery leads have been correctly wired, the aerial-earth, and loud-speaker leads may be joined to their respective sockets and the set switched on by means of the three-point on-off switch. If a very long aerial is used the aerial series condenser C1 should be adjusted so that the moving vanes are nearly out of mesh. Reducing the setting of this condenser has the effect of reducing the effective length of the aerial. In most cases it will be found that best results will be obtained by keeping the volume control at maximum setting, but this control will often be found useful for improving the selectivity when interference is experienced from adjacent stations.

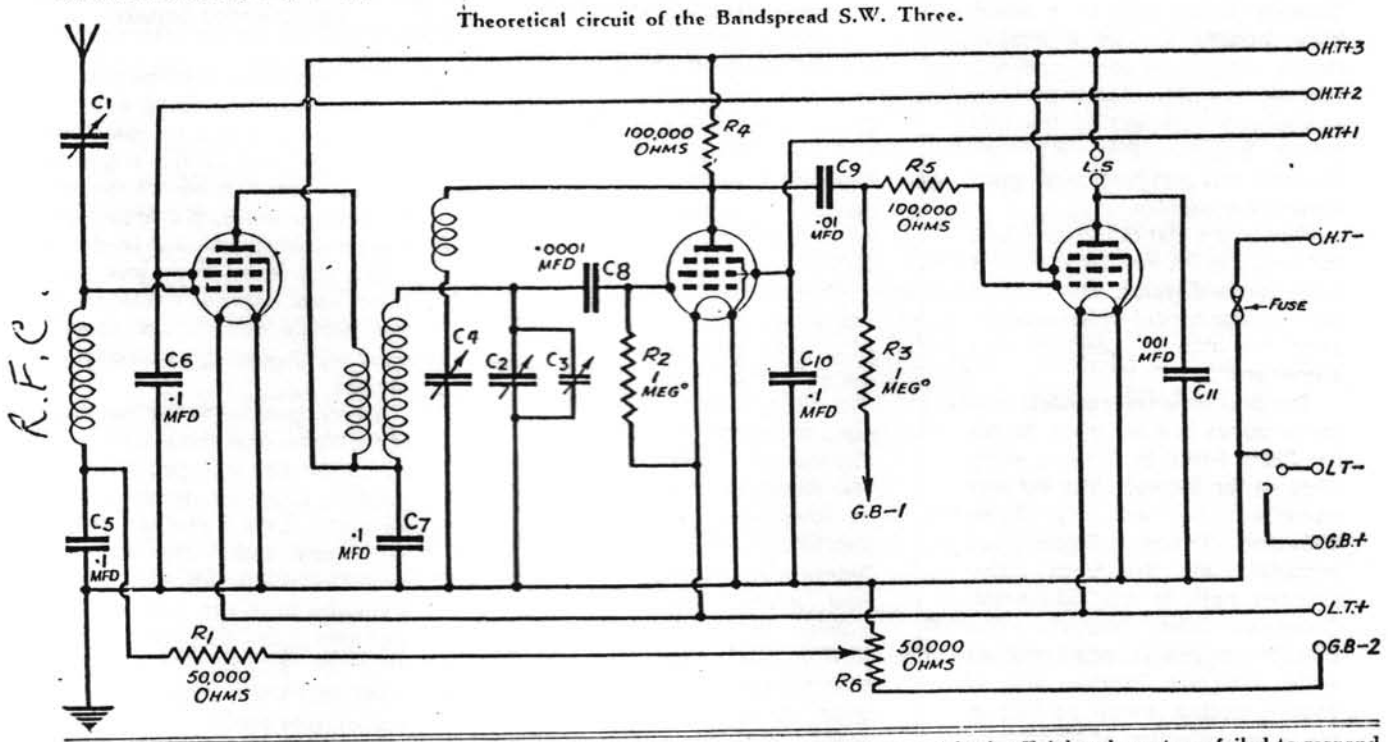
Tank Unit

It is not likely that many constructors will have previously used the Eddystone tank unit, and therefore a few notes will be given concerning this. Condenser C3 is the tank, having a maximum capacity of 140 m.mfd., variable in ten steps by means of the control knob. Condenser C2 has a maximum capacity of approximately 20 m.mfd., and is connected in parallel with the tank C3, thereby enabling the operator to increase the effective capacity across the coil by this value. The specified coil has a wave-range of 24.6 to 51 metres when tuned by means of a .00016 mfd. condenser, and therefore when stations between 24.6 and approximately 27 metres are to be tuned in the tank condenser control should be set at the first stop. If, on the other hand, stations between 40 and approximately 43 metres are to be picked up, stop 5 should be used. The use of the tank unit in conjunction with a band-spread condenser having a remarkably smooth slow-motion drive greatly simplifies tuning—stations can be tuned in as easily as on the medium long-wave bands.



The panel of the Bandspread S.W. Three.

Theoretical circuit of the Bandspread S.W. Three.



B.L.D.L.C.—IMPORTANT NOTICE

IT is regretted that the scheme inaugurated by the B.L.D.L.C., under which readers could obtain through us verification cards from the various stations which they receive on all wavelengths, has had to be discontinued. Members will remember that a form had to be completed giving details of the programme received and this form was sent to us together with 4d. in stamps. We, in turn, despatched these to the various stations together with the necessary remittance for a reply, and the official verification cards, together with other interesting details of the stations and programmes, were then forwarded either direct to the reader or to us. Unfortunately, a large number of transmitters, both official and amateur, failed to respond to this arrangement, and although a remittance for reply was enclosed, no verification card was received, and no receipt or acknowledgment given.

Such a state of affairs causes annoyance to the amateur, and the only practical course is to discontinue this service. The remaining facilities of the Club will still be in force, however.

TED'S MAILBOX

★ ★ ★

* The Earliest Eddystone *

How I DO love controversy ! Now to put the cat amongst the pigeons !!! Well here goes, a letter from Steven who takes us (who?) to task for not "knowing" that the VERY FIRST EVER receiver manufactured by the venerable firm of STRATTONS was/is the REGIONAL ONE battery receiver which was a one valver in a Rexine (leatherette) covered wood case. The 'innards' being built on a wood base board. It was a simple single stage, reaction assisted MW receiver intended to provide headphone listening of the low power Regional Stations which the BBC was just then setting up around the country.

That is the gist of Steven's info but rising to the bait (who me ?) I have been digging into what I have on this model which is so far very little documented anywhere.

The first ever reference to it in my archives is a list given to me by Chris Pettitt in, I think early 1990, at the Bathtub. The list was compiled by a very keen collector. Richard Baker had compiled his list from many sources both in the Eddystone Company and outside. The outside sources included such as early Wireless Worlds and of course models which he had in his large collection of Eddystone Products, not just receivers but also Panadaptors, PSUs, Speakers and smaller Components.

Here, in this list, we have simply the one line reference as follows;—

- **Eddystone Regional One, - 1924. Battery, 1 valve.**
- **Wooden Case.**

Not a lot of gen to go on is there?

So to the next reference, my own, in my first ever List of Models which was purely for personal use,—

***Eddystone Regional One Valve Receiver circa 1924, battery set in wood case with simulated leather covering. MW only and 'phones use.**

That was all I had to say and having no solid info apart this I did not include it in the first EUG List of 1991.

Next we have my second published list of 1993 which was published as a supplement to Issue 20 of the Newsletter for September of that year. Not a lot to say about it here, but top of page 3 second model we have,—

- **Regional One Leatherette case 1+Reaction**
- **MW Batteries Phones 1924.**

Once more nothing much in way of technical gen, but N.B. that it is listed here as the second model made, coming after the Eddystone Twin which is listed as 1923.

Graeme has, I seem to recall, expressed doubts as to the date of 1923 for the start of the life of the Twin and we need to go next to a very comprehensive Model List supplied to myself and Graeme by Tor Marthinsen. This was never published to EUGers, an oversight maybe since it contains a wealth of data **plus** References where available to such as the BP Register, Wireless World by date and issue, ESWMs, and Practical Wireless. This was printed in June 1997 and goes up to, and including the model 1990. Here we have the following,—

***Regional One. Battery. Bands ??? Valves;1. Leatherette Case. Year 1924.**

More or less a rehash of the previous and we are no further along in proving or disproving its originality.

Somewhere there MUST be a written reference to this model and somebody must know about it. **So Please** if you know anything then let us know, we are all ears ! Ted.

Solid State Vibrators

Apropos the items in previous recent Newsletters several letters point out that by the time overseas p&p is added to the Antique Electronic Supply Company product this works out much more expensive than heading straight for the UK supplier in Sale, 'Nuff sed. One EUGer has this item bought last year (and last century) and he expresses complete satisfaction with it, "plug in and play" he calls it.

Ted.

Twin Feeder Aerials

My item in Issue 60 on page 8 re these has prompted a letter from Danny where he mentions that these were all the vogue in the '2Os and '30s before the era of Coaxial cable. He points out that properly made twin feeder is VERY low loss, lower loss than good coax and more tolerant of mismatches since it is usually used with higher impedance type aerials.

Danny goes on to say that most of the Valve type models right on up to the 830 had provision for double balanced feeders. The earliest ever model which Eddystone made for use with such feeder lines appears to have been the All Wave Four which is featured in the Wireless World of 1934 for August. He does not deny that there may have been earlier sets made by Eddystone-Strattons for this configuration of feeder but he has found nothing in print as yet.

Considering the cost of good coax Danny says that home made twin feeder costs peanuts and has one very great advantage over coax. The balanced configuration means that most of the atmospheric static (QRN) and locally generated interference (QRM) are nullified before they reach the receiver input. Most of

the ARRL and RSGB reference books give details for making your own twin feeder so Danny suggests that those plagued by noise should experiment.

Ted.

Excitable 888

David writes in that his 888 became unusable recently, almost continuous whistles on any band and drift on the highest frequency bands.

It was a fairly simple, and quick, cure once he had puzzled it out — but this took time.

The regulator valve V11, a VR150/30, was duff ! It was not even lighting up. The series resistor was suspected at first but found to be okay at @ 2700 ohms so the valve was replaced with one from another receiver. EUREKA ! the set was back to normal, a replacement was purchased by mail and the 888 was back in use.

Ted.

The 1837 variants

A letter re the featured article on this model in issue 60. Allan says that there is conflicting information on page 15 of that issue.

In the text the author says that the 1837/1 has only USB facilities but the Company text below mentions that the 1837/1 variant has both USB and LSB, he queries which is correct ? Ted.

(GRAEME REPORTING: I have looked in the telephone directory which passes as a Service Manual for the 1837 Series and author Dave Jones, MW1DUJ, is quite right. The 1837/1 only has upper sideband. (Page 1.2) The 1978 Brochure is incorrect!)

The 750 Mixer

Simply lifting the AVC line from the hexode side of the mixer valve will help stability on the higher frequency bands.

This very simple mod has increased one EUGers enjoyment of his 750. Distortion was frequently observed when listening to some of the very high powered broadcast signals on 15 Mc/s, just unsoldering R21 at the junction with C22 cured this.

Ted.

KILODYNE FOUR Ads

The ad on page 22 of the last issue has given Bill some food for thought. He says that he is always amazed at the paucity of passive components in the valve stages of the early models. Some stages made do with two resistors, one anode and one grid, plus two condensers, one anode and one grid plus a valve ? Yet the sets worked well. This has led him to consider how the power of transmitting stations in those days was just a few kilowatts, maybe even a few hundreds of watts, yet their operating range was tremendous compared with today's megawatt transmitters. Are all of those extra components necessary or there just to make a profit for manufacturers ? Is the 'ether' becoming less efficient or 'used up'? He asks EUGers for their comments on this.

Ted.

Brain Power

My inclusion of the bit about the average power dissipated by the human brain being about 14 watts. This has elicited comments from two EUGers who ask if this is so, or an April Fool Joke ?

It was true enough, FOURTEEN WATTS ! and not micro or milliwatts as one writer suggested. I checked with the author of the article and he sent me the cutting where it is stated so. A quite authoritative source too. Please do not try plugging your EC10 into your ears!

Ted.

The 820 Tuner

This has always been a bit of an odd one amongst the model line up, both size and style. A number of them are in use by EUGers and they still get praise for their performance. Mods are almost unknown for this model and yet for some the low output level of the audio, nothing more than the rectified signal from the diode, is a problem. One mod that was published some years back was to replace the EB91/6AL5 with a triode strapped 6BA6 audio amplifier whilst fitting two solid state diodes in lieu of the valve diodes. This gives a slightly higher output level for feeding an external amplifier and the higher output level of AF helps overcome problems with loss through matching circuits needed for modern amplifiers. This has been tried by Geoff and he is sold on the idea, it can be put back to normal should he ever wish to dispose of the 820 (very doubtful).

Ted.

Extended MW Band

Whilst most of our classic Eddystones go no higher than 1500 Kc/s on the medium wave band the latest extension to this band has stations licensed for up to 1710 Kc/s. Some stations in Central and South America are even operating around 1800 Kc/s and one correspondent reports hearing broadcast stations from Mexico on 1860 Kc/s !

Many of the newer UK receivers with digital readout do cover the band up to 1710 Kc/s but they have 9 Kc/s channelling so that this rules out their use for Dx reception of the Stateside broadcasters operating on medium wave with 10 Kc/s channeling.

Use of Meths

In the last issue the article on the re—building of a 770/1 mentions the use of about a pint of meths and one letter from an EUGer takes issue with this. He says that meths is mostly water! and that this should NOT be used as it is almost impossible to completely remove any residual moisture, hence the very real

possibility of future RUSTING or corrosion of other metals. Even if care is taken to oil or grease all parts afterwards the heat generated whilst the set is in use will hasten corrosion.

The moisture generated can be a major cause of the white corrosive deposits on zinc/aluminium alloys and that 'orrible green 'goo' on copper wire. I can recall using meths on some of my restorations and remember the subsequent problems which ranged from 'goo' to corroded wafer switch contacts.

I once had to strip an 84OA down for a second restoration job just a few months after completing the first, and then start all over again. And don't lets be fooled by white spirit, it too has a large percentage of water in its composition. The best products are those sold specifically for cleansing of electrical and electronic items, these are also easier to use as they are usually sold in aerosol form.

Ted.

850/4 Lo—Gain

A recently acquired set, this 850/4 was in pretty good condition and performed well on all except the lowest frequency band. Whilst there is little to listen to on that range both noise levels and tests on a bench set—up with a signal generator and output meter showed that the RF end of the 850 were low on gain and that tracking was hopelessly inaccurate.

The manual was helpful here as it does tell the reader that care needs to be exercised when re—aligning this VLF range as it is so very easy to get the oscillator set up on the wrong side of the signal. Guess what ? All signs pointed to the set having been 'tweaked' recently, possibly prior to sale.

It took but minutes to ascertain that this was what had happened and then a good hour was spent re-setting the oscillator stage and re-tracking the RF and Mixer stages. Having regard to this it was then decided to undertake a full re-alignment of ALL ranges, sure enough there were some discrepancies in tracking and a very interesting evening was spent putting them right.

It is a very different ball- game working on such low RF frequency bands and it must be emphasised that unless one has a very accurate RF signal generator and a crystal 'pip' generator then one has to borrow the necessary items. When dealing with VLF frequencies of the order of 10 or 20 Kc/s then the normal run of the mill sig; gene; is useless. It will probably be pretty much useless without proper calibration even up to IFs of the 450 Kc/s range as accuracy will be outside the specification of the receiver being calibrated.

One trick used by those in the know is to compare and calibrate sig; genes; at these low frequencies against such as Rugby on 50 Kc/s or Droitwich on 198 Kc/s. from Dave.

Static Rain — Update

A letter received from Geoff Arnold some months ago has finally surfaced here and it relates Geoff's experiences with QRN of the aforesaid variety.

Many EUGers will know that Geoff has a background in Marine Radio so here goes.

"The letter re raindrop static brought back some memories of my seafaring days. We had horrendous problems at times from tropical rainstorms, and from sandstorms when in places like the Suez Canal, something very familiar to Army and RAF operators serving in that region.

"It was a problem which also affected the Decca Navigator hyperbolic navigation system which was being installed in many ships back in the 195Os. This used a long wire aerial, but was very susceptible to static noise, which could throw the three indicating Decometers into a right tizzy.

"Decca got around the problem by using insulated wire for the aerial, but then found that the plastic coating made a tasty feed for termites. To discourage the little varmints a special wire having insulation impregnated with arsenic was specified.

"This, however, was not the end of the tale for subsequently a memo was circulated warning persons who carried out maintenance on the aerials always to wear stout gloves, as there was a risk of arsenic poisoning for anyone handling the wire who might have cuts or abrasions on their hands.

"Whether this resulted from an actual case of poisoning or was simply a case of an individual's foresight in those days before Health & Safety came to rule the roost, I do not know. We always treated this wire with some respect, however ! "

Geoff.

Replacement Parts

Roger, MO BWP, writes in re the remanufacturing of spares for our Eddystones. He has 4 Eddystone receivers in state ranging from pristine to poor, he is also trying to put together an article on an Eddystone lookalike which he built in the '6Os.

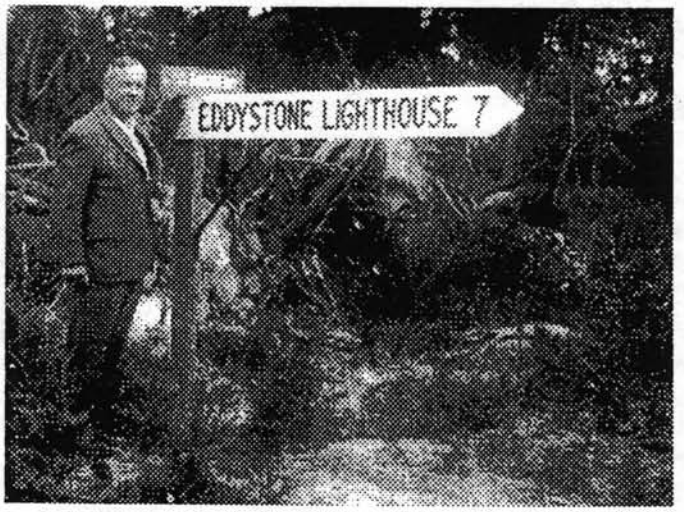
His first thought is to discover via the Newsletter just which parts are most in demand and what quantities are likely to be required. Roger has a background in engineering and he has some personal knowledge of people who can make small quantities of parts for a reasonable cost. He is willing to help out if more information comes to hand.

This is a subject we tend to shy away from since small quantities mean high prices (usually) and high quantities mean big outlay of cash and storage facilities.

My first comment is that the most basic, simple, item most mentioned in MY mail is either the diecast 'feet' for raising the set face up to a comfortable operating angle, or, more

You'll Never Believe It!

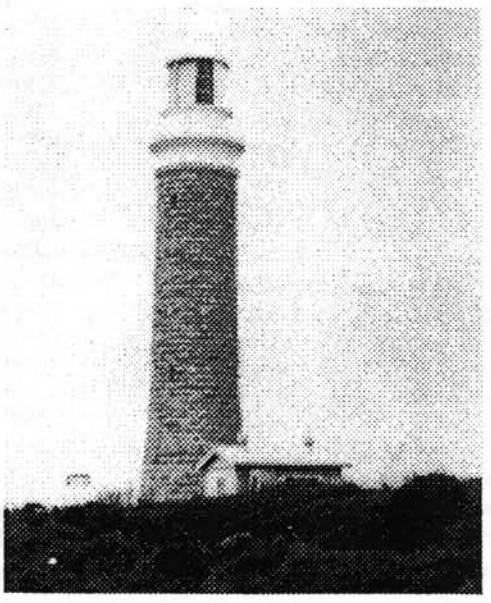
In the EUG Newsletter #59, last February, Ted was asking about the replica Eddystone Lighthouse in the English West Country. Nobody, but NOBODY came up with an answer for him, but guess what former chief engineer Bill Cooke came up with . . .



"Mind the snakes, Bob . . . and the bush fires!"

Bob Cunningham, of R. A. Cunningham Pty, Australia, was a first-class agent for Eddystone.

And here is the Lighthouse itself, located at "Eddystone Point", on the north-east coast of Tasmania.



(never in my wildest dreams . . . Graeme)

difficult, the castings for the diecast speakers.

There have been EUGers who have made their own using the 'cold casting' method, but nobody has gone so far as to produce such parts for others in commercial quantities.

If EUGers DO have ideas on this subject then write to me (Ted) and I shall collate any such info for Roger. The re-manufacture of escutcheons (finger plates) or of scales can be a very expensive undertaking.

Ted.

The Atlantic Two

Hey, miracles do happen !!! Bryan Marsh (in New Zealand) has been on the land line to Graeme to say that a pal of his has acquired an ATLANTIC TWO, the only one known in captivity. There appear to be some differences to that shown in the 1928/9 Harrods catalogue as this one has a wood-finish metal front panel not glass. Pictures are 'on the way' and hopefully an article to follow. Ted

Pictures have just arrived, but too late for an article here – Graeme).

The NEC

Well many EUGers have written in to say how they enjoyed the NEC and their visit to the EUG stand. Graeme's comments include the fact that he was kept so busy that he barely had time to go walkabout. Every time he set off somebody else nabbed him for a chinwag. BE WARNED, he is threatening to find himself a false beard to disguise his by now well-known 'fizzog'.

This way he hopes to be able to go walkabout and buy himself some goodies. He did nab a genuine collectors item, a brand new boxed 339 1FF variable condenser. Pride of place in his collection by now

Another very handy item was a nice Indigraph dial (remember them?) as used on many Strattons models. To be used on his next replica. On a recent visit to Wooferton, accompanied by Simon, he was able to snare a new 31A that was destined for the skip, seems fine except for the DEAC which will not hold a charge.

Ted.

(A report on the visit, with details of the Tx's has to be held over until next month – Graeme)

Age-Related Faults

A letter from Ross Paton in New Zealand re comments contained in previous Newsletters, he deplores the use of diodes to replace valves. He says the sets were designed for slow warm up valves, they should be kept that way.

Next comment is that passive components go wrong more often than valves — at least in older sets. It is far more likely that your low gain comes from leaky condensers or out of tolerance resistors than from poor emission valves. Given that there is still a plentiful supply world wide why go for expensive valves when a condenser worth pennies is to blame. There are many 'new manufacture' condensers with high voltage ratings and in general for a given value and rating the new ones are slightly smaller than the oldies. Same goes for resistors.

On the matter of post WWII TRF sets he mentions one made by Pilot for the Admiralty (can anybody help here ? Ted). This used a whole 'fleet' of 6U7G pentodes, he promises a further update on this when he can examine one. There was also, says Ross, the US made HAL, and RAK, TRF set which used 6D6s for its tuned RF and detector stages. The RAK was the LF version but the RAL tuned from 300 Kc/s to 23 Mc/s in 9 bands. Ted.

The Zeppelins are coming – Again!

Non,-.Eddystone stuff this. Apparently a German company is building Zeppelins for cargo carrying, real rigid framed 'aerostats' these, not just gas filled balloons.

As one who at the age of 5 or 6, saw one of the original Zeppelins over Northern England just prior to WW II the idea of the skies being filled with such monsters fills me with unease.

These days they would be a definite hazard to planes, their size, and unwieldy operating characteristics just do not fit in with today's aviation. I once owned a simple spark transmitter that had been designed for use in the old Zeppelins, at the time I thought that the use of such a device in close proximity to such vast amounts of Hydrogen appeared ill conceived and dangerous.

Ted.

Model 888 Output Transfo

Ian has had to replace the output valve on his 888 twice since he has had the set, some 7—8 years now. He has recently had to replace the AF output transfo when the primary winding went open circuit.

This has caused him to consider why he has had so much trouble with the 888. Two factors have been considered so far. He only ever uses the 888 on phones, a pair of 600 ohm ex Air Ministry padded type, and he has noticed from the schematic that the output transformer primary has no tone corrector condenser directly across it.

When used on phones the secondary has no load on it. The tone corrector condenser serves a secondary function in that it will limit high AC voltages across the primary when the transfo is unloaded.

As a result Ian has now fitted a 1000pF condenser rated at 450 vw across the primary winding and he has wired a 12 ohm 1 watt resistor across the secondary.

He has found a replacement transformer and has now recommenced using his 888.

There appears to be no

difference in the output strength or quality as both are buffered by the series resistors and condenser in the phones circuit.

Ted.

The Scientific Five

Oh NO there wasn't. Oh YES there was! There really was one, a Sci-5 receiver and Peter has seen a mention of it in an old magazine. Just the mention of 'an Eddystone Scientific Five' receiver with no further details.

So now we need somebody to come up with more details. We know that the Sci—2 came out in 1931, the Sci—3 in (I think) 1930, *(and the Scientific Screened Grid H.F. Short Wave Three in 1928 – Graeme)* and the Sci—4 came out in 1928/9 so it must be after this date. Myself I know of only one 5 valve Eddystone after 1929 and pre WW II, this was the Sphinx All Electric of 1935. Can anybody help out?

Ted.

The 640 N/L

The Noise Limiter on this set is used frequently as there is an unknown source of noise in the neighbourhood. When it doesn't come on after operation of the switch then there is always the one known check to make. The EB34 double diode valve.

This particular valve has always had a poor reputation for some reason, unlike its relative the 6H6 which is practically immortal.

Over the many years that this 640 has been owned by the correspondent two or three replacement EB34s have been needed, always the same fault — a dud heater. This is one valve where it is not usually possible to see the glow of the heater when the valve IS working.

So the old timer's tip has always been to scrape the metallic coating away in a small *(1/2* inch diameter) circle at the centre top of the valve, this enables one to see at a glance that it is 'lit up'.

Why this particular valve has such a poor reputation has been the subject of much consideration over the years. Especially so since it is not used in circuits where there is anything but signal voltage or very low DC. Whatever the reasons, this is always the first thing to check when the N/L stops working.

Ted.

The Marconi Sentinel

This is simply a badged version of the Eddystone 1004 and Tony has recently bought one at a rally, £25 was far from expensive even if the set did need a new tuning knob.

What Tony is asking now is whether all of the Marconi badged sets had an Eddystone label on the back for the model/serial numbers, (they usually did, - Ted).

He has been able to buy a knob (minus the centre disc insert) and has the 1004 working okay but he comments on the high noise level and wonders about other EUGers experiences with this set. I know myself that the 1000 series could be noisy but all of those I have heard have been old, well used versions so this may be as a result of aged transistors, although it might well be due to other causes.

One well-remembered 1000 series set had back to back diodes across the aerial input, one of these IN4001 diodes was duff and had turned into a very effective noise generator on all ranges.

On another occasion 'frying' noises emanated from the output integrated circuit but there was no need to change it — just wiring a 470 pF condenser from the can to chassis earth cured the problem.

But be careful with the 1004. Other 1000 series have the standard IF of 455 Kc/s but the 1004 has an IF of 720 Kc/s. The reason for this has its place in history. Whereas so many 'land-based' superhets were standardised with an IF around the 450 to 465 Kc/s band, this band constituted part of the old MF CW band for Marine purposes. Many Post Office-run Coast Stations transmitted in this band, hence the move to 720 Kc/s for many marine receivers to avoid IF breakthrough.

An incidental fact re the 1004 is that besides its appearance as a MIMCO Sentinel it was also sold as a Redifon model, a Hagenuk model, and an ITT model. Pretty versatile eh?

Ted.

MORE FROM TED's MAILBOX ON PAGE . 33 . .

Don't forget, send your letters and questions to TED, c/o Jim Murphy 63 Wrose Road BRADFORD BD2 1LN

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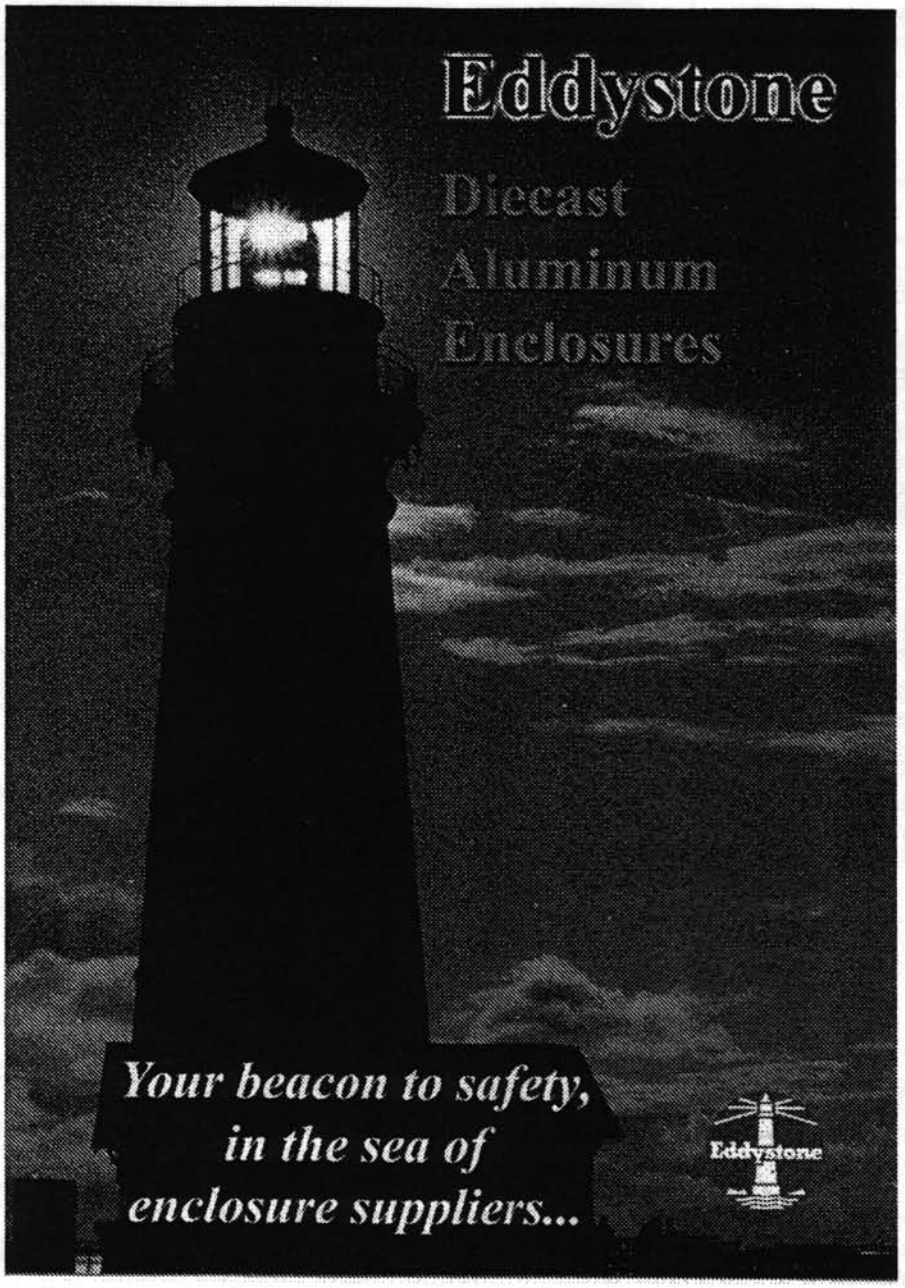
For Handbooks, Back numbers, and Spares, call Dave Simmons on 01869 347 504 or e-mail: ***eddyspare@onet.co.uk***

★

The Lighthouse Still Shines



In Episode Nine of 'The Cooke Report', (N/L #56, Aug. 1999), Bill Cooke, former Chief Engineer at Eddystone, told us that the thriving Eddystone diecast box business had been sold in 1998. The buyer was Hammond Manufacturing of Guelph, Ontario, an old-established Canadian family business. Many of you missed this and have asked about the continued presence of Eddystone diecast boxes in various catalogues.

Above is the new Hammond box catalogue, based at Basingstoke, Hants. Over the page is some of the history of the company which helps to keep the lighthouse alight! Note that they have no connection with Megahertz Communications, last year's buyer of Eddystone Radio.

HAMMOND MANUFACTURING
ELECTRONICS GROUP

Hammond Manufacturing was founded in 1917, and began as a manufacturer of radio receivers and other related equipment.

By 1927 Hammond had focused its efforts on transformers. These products positioned the company for rapid expansion during World War II when demand for radar, radio, and communication equipment increased dramatically.

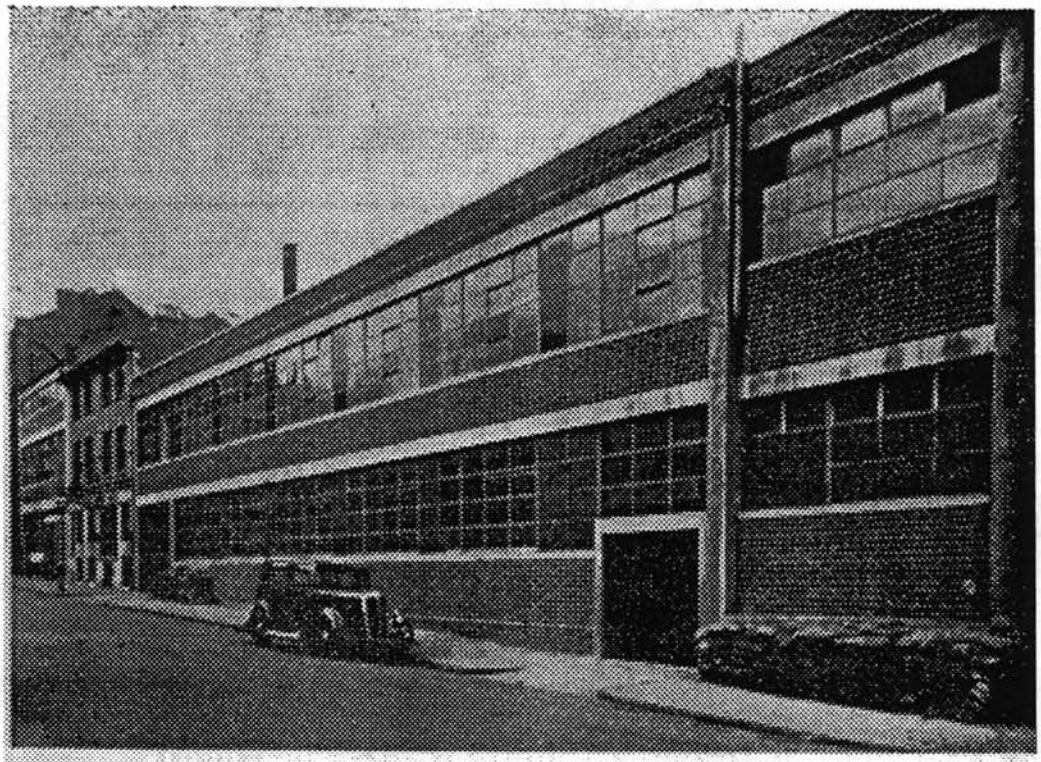
During the 1950's Hammond expanded into the production of enclosures, as well as extended its transformer capabilities to take advantage of the growing electrical and electronics markets.

The Company has annual sales approaching $200million and manufacturing plants in Canada, the United States, and England. For the past 25 years Hammond have handled Eddystone diecast boxes and in 1998 acquired the plant and trademark.

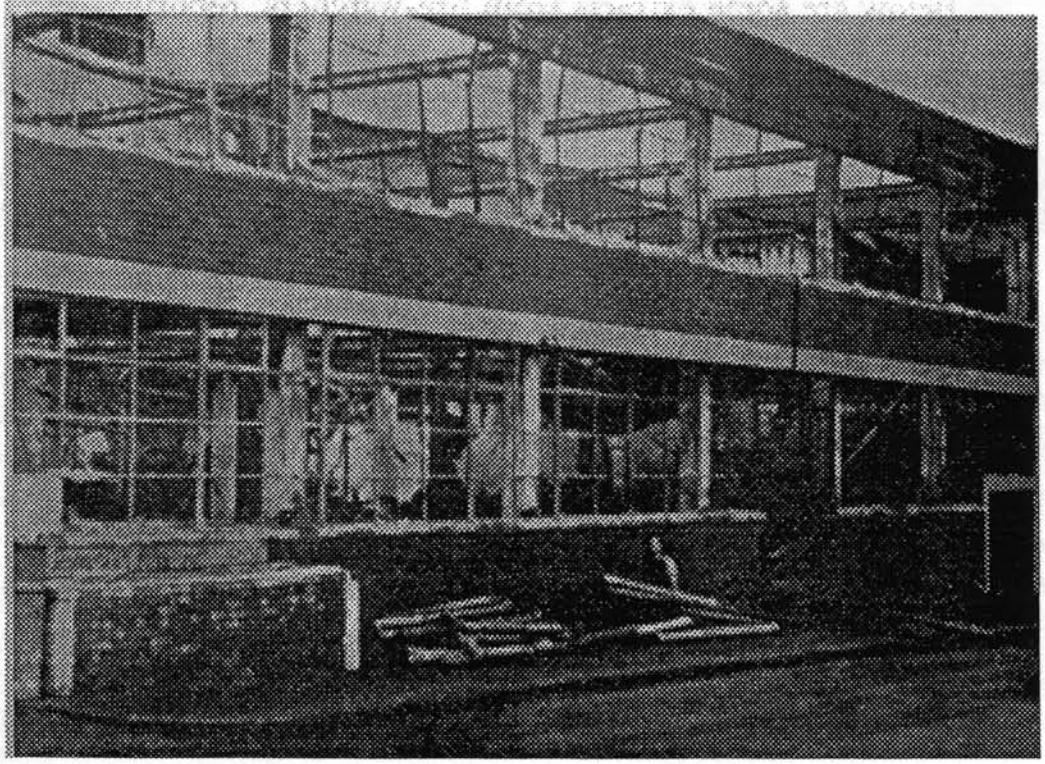
Fred Hammond, VE3HC, first licensed in 1929, founded the impressive Hammond Museum of Radio. The items exhibited reveal how the development of wireless equipment has progressed throughout the Twentieth Century.

Many types of valves are on display from the original Fleming diode through to transmitting types of 100 kilowatts. Examples of receivers from 1912 through the 1940's are displayed; every effort has been made to show items of interest to radio Amateurs, Vintage Collectors and the General Public. The Museum is located at 595 Southgate Drive, Guelph, Ontario and the website may be found on: www.kwarc.on.ca/hammond

Rob Hammond, the Chairman of the Company, is a member of EUG.



LEOMINSTER WORKS, BUILT 1937
A BRAND NEW FACTORY OF 30,000 SQUARE FEET
(STANLEY WORKS just visible at extreme left.)
Before and after the Blitz, November 2nd, 1940.



The accuracy of German bombing was incredibly good, due to beam flying.

The Early History of Eddystone

In previous episodes we described the dreadful destruction, not only of Stratton's Eddystone Radio Works in Birmingham's city centre, but also of the rest of the Laughton empire (the parent company of Stratton). Within 24 hours the workers were re-located at a defunct Lido, known as the Bath Tub, located on the southern fringe of the city. Within three months production had outstripped that of 1940.

Almost everything had been lost in the Luftwaffe's destruction of the city factories, raw materials, tools, drawings, prototypes, test gear, the lot. Ironmongers and tool shops around the city were scoured for equipment to enable a new start.

It must be remembered that the older members of the staff were not eligible for military service. It was very important that they should be kept occupied within the company as they would be badly needed after the war. It was also essential that the offices and staff in London, Manchester and Glasgow should have something to sell.

Soon the Lido was transformed. The 1,000,000 gallon pool was drained and air-raid shelters built in it. Power presses took the place of the dressing cubicles, the fun-fair became a packing department and the ice-cream parlour became a workshop.

Initial priority in the Eddystone Radio section was for the manufacture of type 339 radar IFF tuning condensers and type 358 communications receivers. By the spring of 1941 full output was achieved and Webbs Radio were even advertising in the Wireless World! Around 5,000 S.358 and variants (358X, 400 & 400X) were constructed by 1945. Not a vast quantity, perhaps, but Stratton was a small family business, not in the same league as Pye, Murphy, and E.M.I.

During World War II no further damage from enemy raids took place and over 4.5 million radio components were manufactured for use by H.M.Forces, mainly the Admiralty, but also for the Police and R.A.F. About 4,000 V.H.F. Duplex Radio Telephone sets were produced – the Stratton S.440/450B, so beloved of post-war two-metre buffs.

A final achievement that gave Stratton's much satisfaction was that these VHF telephone sets were used as cross-Channel links on D-Day for the first British landings in France. They worked with great success.

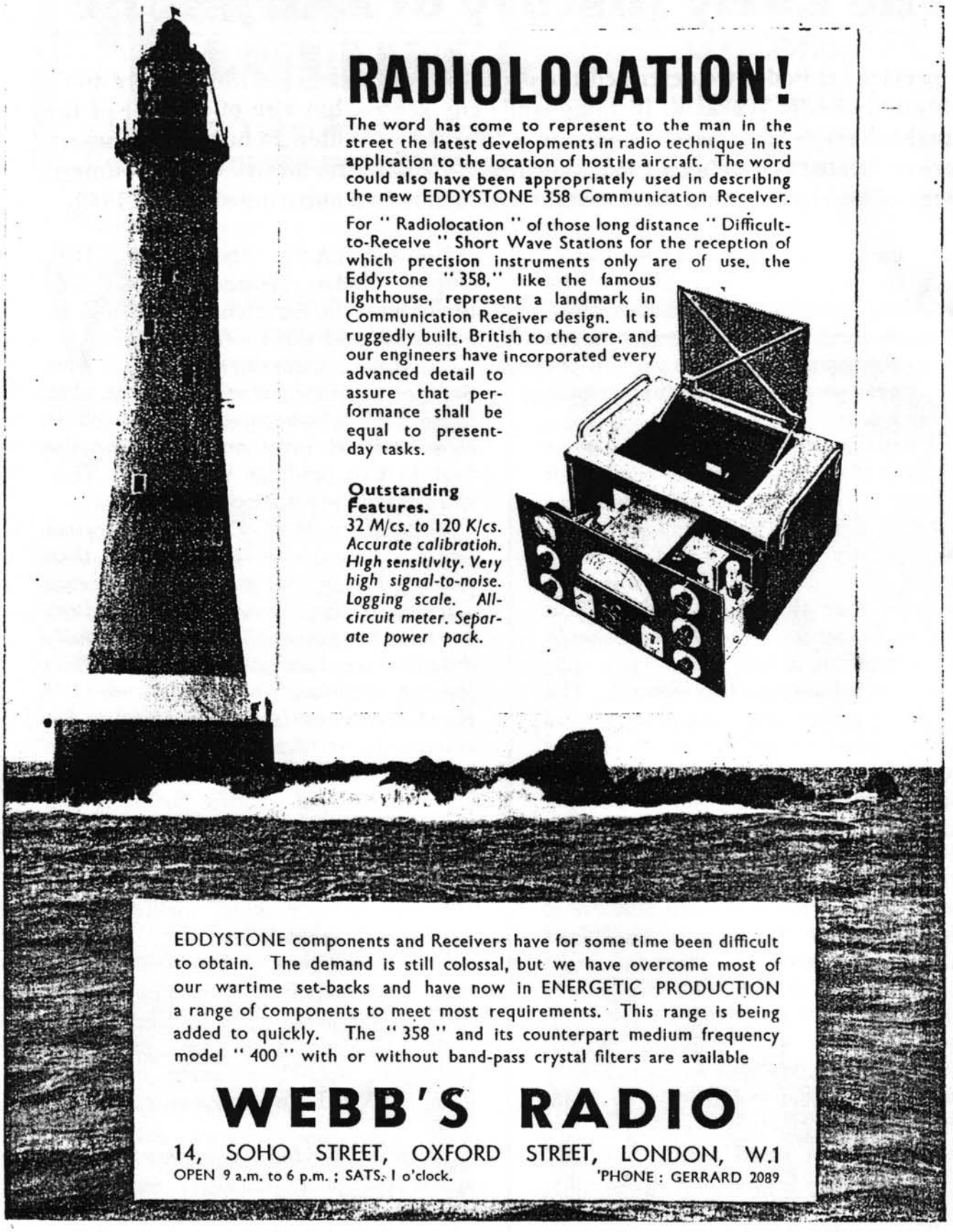
(I used a 440B Tx on two metres AM/CW throughout the fifties and then converted it for four metres in the sixties – it was by far the best piece of British wartime low-power VHF gear. It is fully described in Louis Meulstee's 'Wireless for the Warrior, Volume I', under its Royal Signals designation of Wireless Set Number 57 – Graeme.)

A difficult period followed the war. The Services placed little business, and the unloading by Government departments of surplus stocks depressed the market for the type of equipment Stratton's were making. Selling prices were uneconomically low.

Export markets were also meagre, as very good supplies of surplus U.S.A. radio equipment were available. A major decision was now made, in retrospect probably an error, not to re-enter the V.H.F. two-way communication field.

It was decided to concentrate on specialised communication equipment, well constructed for performance and stability, and selling on those points rather than on price. By the 1950's this policy was paying off . . . But that's another story! Keep watching for the "Profile of Eddystone, 1946-72". ★

The Early History of Eddystone . . .



RADIOLOCATION!

The word has come to represent to the man in the street the latest developments in radio technique in its application to the location of hostile aircraft. The word could also have been appropriately used in describing the new EDDYSTONE 358 Communication Receiver.

For " Radiolocation " of those long distance " Difficult-to-Receive " Short Wave Stations for the reception of which precision instruments only are of use, the Eddystone " 358," like the famous lighthouse, represent a landmark in Communication Receiver design. It is ruggedly built, British to the core, and our engineers have incorporated every advanced detail to assure that performance shall be equal to present-day tasks.

Outstanding Features.
32 M/cs. to 120 K/cs. Accurate calibration. High sensitivity. Very high signal-to-noise. Logging scale. All-circuit meter. Separate power pack.

EDDYSTONE components and Receivers have for some time been difficult to obtain. The demand is still colossal, but we have overcome most of our wartime set-backs and have now in ENERGETIC PRODUCTION a range of components to meet most requirements. This range is being added to quickly. The " 358 " and its counterpart medium frequency model " 400 " with or without band-pass crystal filters are available

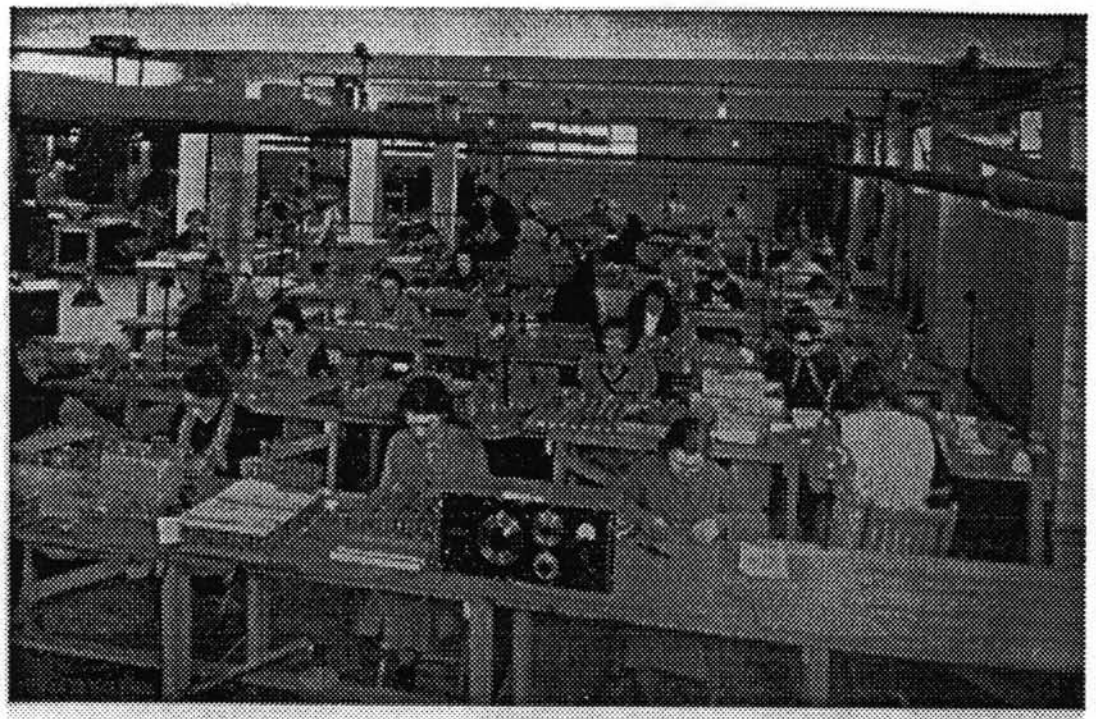
WEBB'S RADIO

14, SOHO STREET, OXFORD STREET, LONDON, W.1
OPEN 9 a.m. to 6 p.m. ; SATS. 1 o'clock. 'PHONE : GERRARD 2089

. . . incredibly, by the spring of 1941, Eddystone's production was higher than before they were totally destroyed in the blitz. But they never advertised the location of their new factory until after the war! Webb's Radio was a wholly-owned part of Strattons.

EDDYSTONE RADIO

Working in improvised surroundings at 'The Bath Tub,' 1941

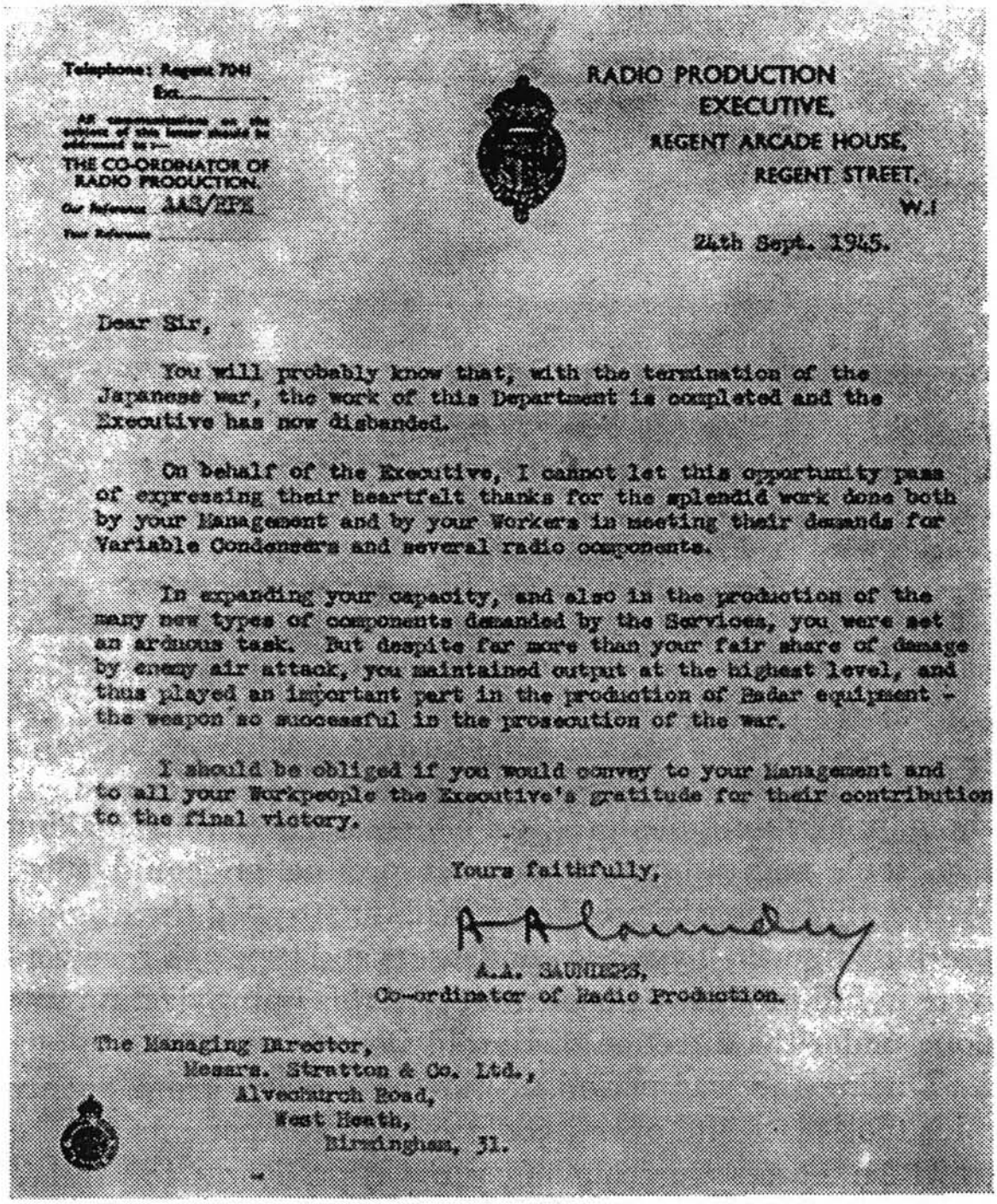


ASSEMBLING EDDYSTONE RECEIVERS IN FORMER LADIES' DRESSING ROOMS

RADIO ASSEMBLY IN THE OLD BALL ROOM

West Heath Lido had been opened in 1937 by Gracie Fields, star of stage & radio.

Now for the good news . . .



Telephone: Regent 7041
Ext. .....

All communications on the subject of this letter should be addressed to:—
THE CO-ORDINATOR OF RADIO PRODUCTION.
Our Reference AAS/EPE
Your Reference .....

RADIO PRODUCTION EXECUTIVE,
REGENT ARCADE HOUSE,
REGENT STREET,
W.1

24th Sept. 1945.

Dear Sir,

You will probably know that, with the termination of the Japanese war, the work of this Department is completed and the Executive has now disbanded.

On behalf of the Executive, I cannot let this opportunity pass of expressing their heartfelt thanks for the splendid work done both by your Management and by your Workers in meeting their demands for Variable Condensers and several radio components.

In expanding your capacity, and also in the production of the many new types of components demanded by the Services, you were set an arduous task. But despite far more than your fair share of damage by enemy air attack, you maintained output at the highest level, and thus played an important part in the production of Radar equipment - the weapon so successful in the prosecution of the war.

I should be obliged if you would convey to your Management and to all your Workpeople the Executive's gratitude for their contribution to the final victory.

Yours faithfully,

A.A. SAUNDERS,
Co-ordinator of Radio Production.

The Managing Director,
Messrs. Stratton & Co. Ltd.,
Alvechurch Road,
West Heath,
Birmingham, 31.

Interesting that the official letter of thanks only mentioned the type 339 IFF Tuning Condenser. Communications equipment was virtually ignored!

EDDYSTONE GOES OVERSEAS
EDDYSTONE SHORT WAVE RECEIVERS BEING LOADED ON ROYAL MAIL LINER 'ANDES' FOR SHIPMENT TO BRAZIL

JOURNEY'S END
ARRIVAL OF THE SAME CONSIGNMENT AT RIO DE JANEIRO

After the War new markets had to be opened up by Stratton & Co.

A BLAST FROM THE PAST

G3GGL at the BBC, 1953

This is the only known photo of Graeme, G3GGL, supervising four hundred kilowatts of R.F. in a main Sender Hall at Skelton, part of the B.B.C.'s largest H.F. transmitter site, about 12 miles south of Carlisle.
From his relaxed attitude the season must have been autumn or winter. Thunderstorms and power dips during spring and summer produced a constant state of apprehension due to trips and lockouts of the EHT (11,000v) on the output stage anodes.

THE STATION at Skelton was built in 1943 as a necessary prelude to the invasion of Normandy in June, 1944. It consisted of two buildings, about a mile apart. In one were six Marconi 100 kW H.F. transmitters covering 3.3 to 22 Mc/s. Band-changing was carried out using 6ft trucks on rails to carry the drive and anode coils. The output valves were CAT17SWs in push-pull Class 'C' configuration, anode modulated by two CAT20Cs in Class 'B', giving about 70 kW of audio.

IN THE other building were six twin ST & C transmitters (i.e. 12 100 kW R.F. units with common modulators for each pair). The transmitter tank coils were integral and it was a day's work to change bands. This meant that they were re-set on a seasonal basis. These were mainly used for the Russian and General Overseas (English) services.

BY 1953 THE Cold War had hotted up considerably and broadcasts were carried in 49 languages. Frequency hopping and crash starts were common practices to baffle the Russian jamming transmitters.

THE LAND between the two stations comprised 700 acres and sported an aerial farm of fifty-one 300 foot masts carrying 45 Koomans beam arrays, each having from 8 to 64 elements. They could be fired forwards or backwards and also be slewed electrically by about 12 degrees either way. All these were switched by hand, riding out to the arrays on a bicycle!

WHILST GRAEME was quietly monitoring the Far Eastern Service (coded 'Green Stripes' – the marking of the schedules), he was quite unaware that a young engineer of the N.Z.B.C. (New Zealand Broadcasting Corporation) was copying his transmissions on a brand new Eddystone 680X to re-broadcast them in the Pacific Zone. Peter Lankshear is also now retired and an active member of E.U.G. The long arm of coincidence reaches out! ★

FEATURED MODEL

THE AMAZING DISAPPEARING YACHTSMAN

MODEL 720

Some of Stratton's sets are scarce, some never made it to the shops; but this one did make it to the shops and was never seen again! Who'll be the first EUGer to send us news of a new discovery . . .

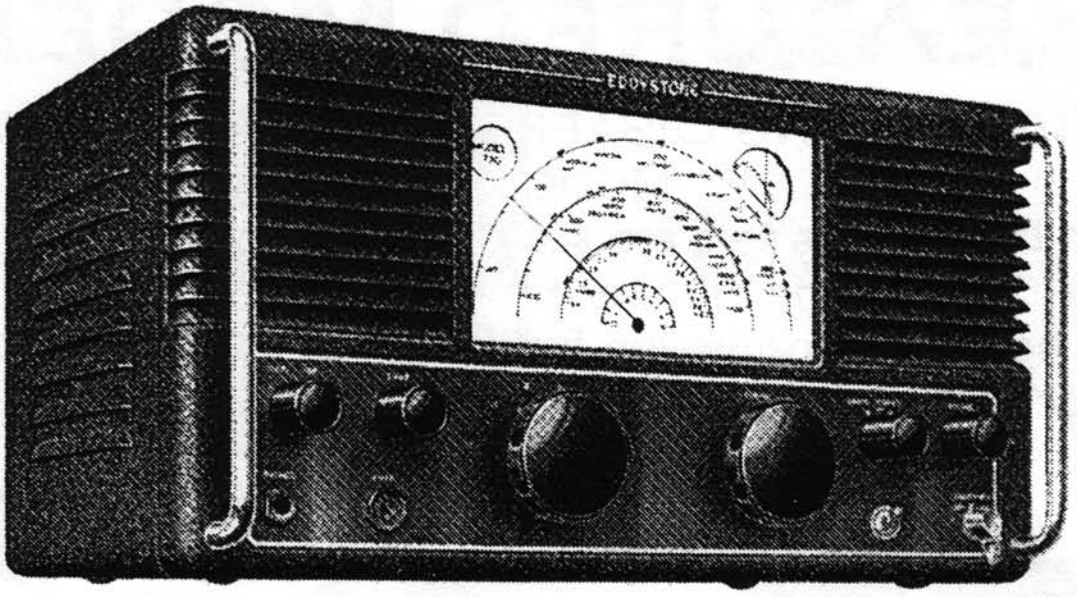
Advert from 'The Yachtsman'

Arthur Edwards, G6XJ, had been the Director of Sales at Eddystone almost since it began, certainly from the mid-twenties. He had joined Stratton's at the same time as Harold Cox, Technical Director, and they had both steered the company through the expansion of the 'thirties. Arthur was a life-long bachelor and had a shack in his parents' house in Birmingham, which would do justice to the BBC.. After ham radio, his great love was small boats. He owned a yacht and sailed the length and breadth of these islands.

By the late 'forties he persuaded Harold Cox (against his better judgement!) that there was a growing market for receivers to use in small ships.

A receiver was designed and a batch of 120 produced in 1950. And that's about all we know of its history... It was advertised in 'The Yachtsman' magazine in 1950-51, but that's about all. No copy of the service sheet has survived, not even the circuit. It's reasonable to assume that it was a development of the Model 710 'All World Six' (intended for 6-volt operation in far-away places), but there aren't many of those about, either!

All we have is the above advertisement and a copy of the sales literature, which we present in the following pages. All you seaside members keep your eyes open at the ships' chandlers. You never know what may be around! Graeme – G3GGL



THE EDDYSTONE "720" YACHTSMAN'S RECEIVER

A DISTINCTIVE RECEIVER DESIGNED FOR USE IN CABIN CRUISERS, YACHTS AND SMALL SHIPS GENERALLY

The Eddystone Model "720" Receiver has been developed to fulfil the requirements of owners of not-so-small craft. It incorporates many of the refinements to be found in professional radio equipment and the performance, accuracy of tuning and reliability are well above average. In particular, much effort has been directed towards obtaining the best possible results on Consol navigational signals.

For these reasons, the size of the "720" receiver (16¾-ins. across the front, 8¾-ins. high and 10-ins. deep) is perhaps somewhat larger than many small boat owners would wish. Nevertheless, it is reasonably compact and a reduction in the dimensions would have necessitated the loss of some of the special features that are responsible for the outstanding quality of the receiver.

The manufacturers of the Eddystone Yachtsman's Receiver are specialists in the production of radio communication equipment of advanced design, for marine and government services. Added to expert technical experience is the personal knowledge of small boat cruising of members of their staff, resulting in a thoroughly well-designed receiver, ideal for its purpose. We state with confidence that no better receiver is available for use in cruiser craft.

THE EDDYSTONE "720" RECEIVER

Provides you with the following Information Services

Weather reports and forecasts (B.B.C. and Airmet).

Time Signals.

Consol Navigational System.

600 metre International distress wave.

News and general broadcasts.

Trawler and small ship band.

TUNING RANGE

The tuning range is 80 to 620 metres and 900 to 2,300 metres.

RECEPTION OF CONSOL.

Consol transmissions are primarily intended for use by aircraft but can be and are being successfully used as an aid to navigation at sea. Consol stations transmit combinations of dots and dashes and by counting the number of dots and dashes received, the radial position line on which the receiver is situated can be identified. Reception from two Consol stations enables a fix to be obtained.

Around the British coast, the two most reliable stations are Bushmills in Northern Ireland (call sign MWN, wavelength 1140 metres) and Stavanger, Norway (call sign LEC, wavelength 940 metres). Reception conditions vary according to location and are liable to be uncertain when close to land. Screening effects are sometimes noticeable.

Prolonged tests indicate that whilst at times good reception is obtained from both Bushmills and Stavanger, at others only one station can be successfully received. At present, this state of affairs does limit the usefulness of Consol to the yachtsman, but when a new station in course of erection at Brest and scheduled to come into service in 1950 is completed, a very useful navigational service will become available.

Price £48 : 6 : 8

(Extension Loud speaker, if required £2 : 17 : 6)

Comprehensive instructions and a 12 months Guarantee are provided with each receiver

GENERAL CONSTRUCTIONAL DETAILS

DIMENSIONS AND MOUNTING.

The "720" receiver is housed in a rigid metal cabinet measuring 16¼-ins. long, 8¾-ins. high and 10-ins. deep. The power unit and high efficiency loud speaker are self-contained inside the cabinet, the top of which can well be utilised as a shelf for other articles. The weight of the receiver (unpacked) is 35-lbs.

POWER REQUIREMENTS.

The "720" receiver operates from a 12 volt accumulator. In some vessels, low consumption is a necessity — in others, where continuous charging facilities are available, this feature may not be important. To suit all requirements the current consumption has been reduced to the low figure of 2 amperes.

CONSTRUCTION.

The "720" is very robustly constructed. The front panel and the coil box are stout aluminium diecastings forming a remarkably strong and rigid foundation to the whole receiver assembly. The cover is steel, heavily rust-proofed and anti-resonance sprayed internally. The most reliable tropical finish components are employed, and the receiver is suitable for use in salt laden atmospheres. The exterior is finished a fine ripple brown. The controls are mounted on an appropriately marked finger plate.

VOLUME AND QUALITY.

The loudspeaker gives ample volume with excellent tonal quality. It is possible to use one or two extension speakers and a special under-the-pillow speaker can be connected when it is desired to listen without disturbing others.

CONTROLS.

All controls (and also the safety fuse) are on the front panel and comprise :—

On/Off Switch.
Waverange Selector.
Tuning Knob.
Volume Control.
Tone Control.
Selectivity Switch.
Consol Reception Switch.
Stand-by Switch.

The tuning control is flywheel loaded giving very smooth operation. The illuminated dial is directly calibrated and any station within range on a known wavelength can be tuned in positively. The selectivity switch is mainly for use when receiving Consol signals.

AERIAL REQUIREMENTS.

It is appreciated that difficulties exist on a small vessel in putting up a long aerial. The radio frequency amplifier stage in the receiver increases the sensitivity very considerably, and this in turn permits good results to be obtained with a short simple type of aerial.

BRIEF TECHNICAL SPECIFICATION

For the benefit of the more technically-minded, to whom it may be of interest, we give below abridged details of the specification of the Eddystone "720" Receiver.

CIRCUIT.

R F Amplifier, Frequency Changer, I F Amplifier (127 K/cs), second Det., A V C and A F Amplifier, B F O, Push-pull Output.

TUNING RANGE.

Three wavebands tuning as follows :—

Range 1	80 - 214	metres.
Range 2	214 - 620	metres.
Range 3	900 - 2,300	metres.

SELECTIVITY.

Variable between 20 db down for 5 K/cs off resonance, to 45 db down 5 K/cs off resonance.

SENSITIVITY.

Better than 10 microvolts input for 50 mW output for a signal-to-noise ratio of 15 db with 30 per cent modulation.

STABILITY.

To all practical intents and purposes drift is non-existent.

A V C

Output is constant within 12 db for a change in input of 80 db. Zero level = 10 microvolts at 1 Mc/S.

CALIBRATION.

The accuracy of calibration is within 0·5 per cent.

BATTERY CONSUMPTION.

2 amperes at 12 volts.

HIGH TENSION SUPPLY.

This is provided by a non-synchronous vibrator and selenium type bridge connected rectifier (line voltage 155).

OUTPUT STAGE.

Push-pull with negative feed-back giving 3 watts output.

We reserve the right to modify the above specification

RADIO RAMBLINGS

Jottings from my Notebook

By
Graeme
Wormald
G3GGL

June, 2000

We seem to have a lot to report this month, so I've hived off one or two items into features on their own account (*see 'A Blast from the Past' and 'The EC10 Report'*). Let's start by picking up the threads from last month and looking at the claims for the oldest Old Timer in EUG. If you remember, Fred Penny of London, born August 1918, threw down the gauntlet . . .

Well, it didn't take long for the 'phone to ring with old-timer SWL Phil Screen from Wolverhampton on the line. "Fred's wrong," said Phil, "I'm the oldest member, I was born in May 1917! My first Eddystone was an S.640 bought new in 1949."

That seemed to be the end of it, but NO! At the Vintage Communication Fair held at the NEC (see later), a sprightly figure ran up to the table to renew his subs and pressed a note into my hand.

And this is what it said: "I AM THE OLDEST EUG'er, 25th AUGUST 1915. ERNIE BEAMER G4TKY" (of Bridlington, Yorkshire). Which just goes to show how bracing is the seaside air! Let's see if we have even more contenders (I shall claim it myself in 2030 on my 99th birthday . . .)

Speaking of the NEC, it was great meeting so many members and having chats about the meaning of life, the price of 830/7s, and the amazing collection of items on offer. Not that I was too tempted myself, mind you. (I've actually reached the stage where any more radios will have me building an underground bunker. . . except, of course, for a 670C.)

Do you remember the episode in last month's "Early History of Eddystone" about the Stratton Condenser type 339, for the Chain Home IFF system? Well, window-shopping along the stalls what should I see but a brand-new 60 year-old model 339 condenser; lacquered brass shining, in its original Air Ministry box with full provenance. "VARIABLE CONDENSER TYPE 873; A.M. REF. 10C/894; MAKERS REF. 339."

I paid £5 for it and thought myself fortunate. I know half-a-million were made, but how many have survived brand new?

Then, at another stall, I spotted one of those early 'micro-dials', an 'Indigraph' made by Igranic, the jack-plug people. They were used on the Eddystone 'All World Four' of 1931 and several other early Stratton short-wave sets. It was still as smooth as silk and I willingly gave the asking price of £1. I decided it would do nicely for a reproduction 'Kilodyne Four' project.

When I got it home I noticed some fine pencil marks on the celluloid logging scale. They were too small to read with the naked eye. So out with the spyglass (an essential tool for all collectors) and there it was: W8XK! Just in case you've forgotten, that was the Pittsburgh, Pennsylvania, short-wave station, which every Eddystone Rx had to receive before it left the factory! Then I turned it over and there were more pencil marks on the back: "Purchased Sept 16th 1933 from J. Stone's, 6/-" (6

shillings, that is, Imperial currency). In 1933 you could buy 120 premium cigarettes (Player's Navy Cut) for six shillings. What I'm getting round to saying is that this dial cost its original owner the current equivalent of about £28. No wonder short-wave radio was a rich man's hobby in those days!

A subject which has cropped up before (many times) is the alleged 'deafness' of Eddystone VHF/UHF valve and early transistor receivers (to wit, the 770 and 990 series). The sensitivity of most of these sets is quoted at around 5uV for 50mW output (NBFM), which I don't think is bad for a design nearly half a century old in the one case, and the world's first solid state vhf/uhf multi-band sets in the other.

It cropped up again last week in an enquiry posted on the Internet by a Canadian collector. I posted the answer, which I'm repeating here for our newer members (and older ones who've forgotten!).

VHF/UHF low noise pre-amplifiers are widely available in the High Street. Mine came from the 'Argos' catalogue shop, but there are plenty of other sources and makes; the main thing is to check its price. Mine's made by Labgear (a well-known name in the business), cost £12, and has a gain of 14dB at 44-800mHz.

When used in front of my 990R, it increase the carrier level meter from 2 to 6 divisions (S-points?), depending on sundry different circumstances. A great improvement, I think.

And there's one thing about a 990R which you can't do on the average modern scanner. And that's browse the bands with ease. Set the IF bandwidth on wide (200kc/s, like the wartime RAF R1132 tunable airband VHF Rx), and then tune for narrow signals, say on AM airband or NBFM coastal VHF (if it's still there!).

It's as easy as tuning medium waves. If you get adjacent channel problems just switch to narrow (30kc/s standard, 15kc/s special) and sort them out! A very nice set to play around with is the 990R. Superb for FM b'cast DXing. But don't forget that you need a vertically polarised rotary beam to get the FM pirates. They all use co-linear transmitting aerials (easy to conceal and dismantle). I remember the first time I heard a West Midlands FM pirate. I was using a discone (vertically polarised). I quickly changed over to the (horizontal) rotary beam, and Zilch! Nothing. After cursing the 990 for spurious responses it suddenly struck me . . . Most legitimate transmitters, by the way, use slant polarisation which works OK both ways.

As subscription renewals come rolling in I notice that Welsh and Scottish contributions are sporting their new (parliamentary?) stamps, and very smart they are too. A lot better than the Millenium series which, quite frankly, I consider to be by far the worst British issue ever. You've got to look at the value to tell which way up they should go!

As a matter of passing interest, all your stamps are carefully torn out of the envelopes and donated to my local RNLI (Royal National Lifeboat Institution) organiser who sells them to stamp dealers. Many people think that the huge network of lifeboat stations surrounding these islands are state-funded, like the coast-guards. Not so; it's entirely run by charity collections.

When we congratulated our first new M5 members last month we overlooked the very first. Mainly because he didn't tell us about it! Graham Ridgeway bagged the 21st call to be issued, M5AAV, but he got in under the fence. He already had a full Class 'B' and a Class 'A' Novice ticket. Which meant that he had all the qualifications needed and just had to ask! Graham would also like members to know that he is the RSGB M5 QSL sub-manager. To collect cards from him it's not necessary to be an RSGB member, just lodge with him the usual large SAE. Any queries, call Graham on 01254 682351. He explains that due to major surgery he has plenty of spare time! I know all members of EUG will be wishing

you the very best for a successful recovery, Graham.

Close behind him are Robin Birch, with the same tickets who is now M5ABD, John Coleman (formerly G7VZJ), now M5AJC, and Colin Robertson (previously G6CDX) who becomes M5CTR. Stephen Cape, BBC/TV's crime reporter, has just reported that following a successful Morse Camp at Potters Bar he is now M5AKD. Well done, everybody (and see 'POO's Ponderings).

Just a reminder about the disaster which struck some copies of Newsletter #57 (October 1999). Random pages were only half printed and we offered a replacement to anybody so blighted. In fact we only had about six requests but then we had a flurry with members' renewals.

All this tells me that there are probably many more of you out there with unreadable pages. If so, you've only got to ask me for a free replacement.

Chris, G3XTE, has a 770R which has been subjected to treatment from the phantom fiddler, including dial drive components.

Sundry efforts to rehabilitate the drive cord have come to naught, including the correct 16 thou steel cord; oversize 30 thou steel cord; 50-pound fishing nylon; and 8 thou guitar wire. They all came off the damaged spiral groove. Now Chris has been successful with ultra-fine nylon fishing line. Fingers crossed. ('thou' = one thousandth of an inch.)

From time to time members' letters make reference to the widely available and toughly built Eddystone 730/4, used in quantity by the British military and Diplomatic service in the 1960s. The question is usually "how do I improve its SSB performance?" Now I never advocate wholesale rebuilding of historic radio sets, especially Eddystones! But I'm prepared to accept an add-on improvement which involves no holes or anything like that. One such facility was described in the "Short Wave Magazine" for March 1974 (when the 730 was really only just beginning to date!). It's a transistorised product detector using three BC107s (or similar) and a handful of resistors and condensers, built on a piece of Veroboard and slipped under the chassis. I telephoned Kevin Nice G7TZC, the present-day editor of SWM and asked his consent for copyright clearance to reproduce it for EUG members. He willingly agreed and if you look on page ✳ you will find an interesting project. SEE BELOW

Peter Lankshear, writing from New Zealand, reminds me of an old trick which has worked well for me in the past. He recently had the job of restoring a vintage S.750 belonging to the grandchildren of a Silent Key.

After fighting the alignment problems of a double superhet on Medium Waves all was well except for the permanent grubby effect of the 'off-black' wrinkle finish. He applied black boot polish (Kiwi, of course) and acquired a perfect smudge-free finish with the brush. I used it on my S.640 and can confirm the excellent results.

Even as I write these notes I have received a transcontinental 'phone call from EUGer Bryan Marsh of Auckland, New Zealand. Bryan subscribes to an interesting 'phone company which lets you talk for nothing! Well, not quite, they charge him NZ$10 to talk as long as he wants to the UK. That's about £3. He made full use of the facility.

He brings us news of the finding of an Eddystone 'Atlantic Two' which, by the sound of his description, has many differences from the set of that name offered in the 'Harrods' catalogue for 1928/9. Pictures have just arrived, and we will cover it in detail in a later Newsletter.

I notice that the May/June edition of 'Medium Wave News' has a list of members' receivers, with no less than six vintage Eddystones among the Sonys and 7030s.

They are an EC10; 730/4; 870; 958, and 840C. What a mixed bag! ★

✳ HELD OVER TO NEXT ISSUE DUE TO LACK OF SPACE. G.

Letter from EUGer Michael O'Beirne *(held over from earlier . . .)*

Dear Graeme,

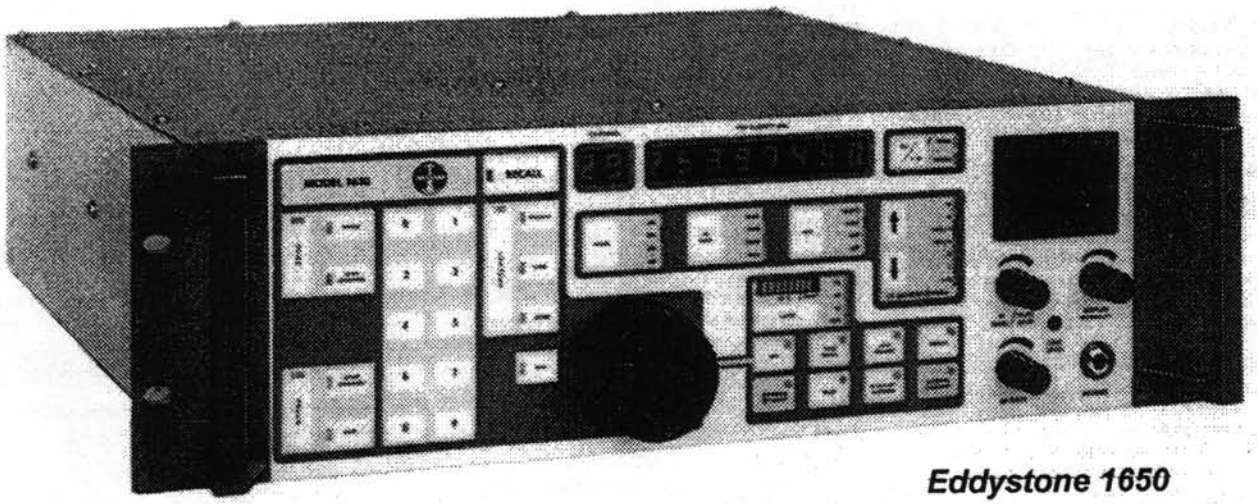
Well done on the Christmas issue of the EUG newsletter. There are two points which may interest members.

1. EC 1650

I have one of these and acquired it on the strength of Chris Lorek's review in *HRT* shortly after that issue was published. For the benefit of anyone contemplating buying one here are some pros and cons. I try to make accurate comparisons with some of my other professional quality receivers.

Pros:

1. Lovely silky smooth tuning with variable speed up - ie the faster you tune the faster are the Khz per rev.
2. Excellent IF crystal filters, though for my ears the 2.4 Khz SSB filter is too narrow, but others will prefer it particularly with bad QRM.



Eddystone 1650

3. Excellent AM performance through the use of synchronous detection. You need a decent external loudspeaker or qualitv headphones to appreciate this. The monitor speaker is just that - to tell you that there is a signal.
4. Excellent recovered audio without any trace of hum or gunge. One of the best I know.
5. Good strong signal performance, but not quite in the league of the Racal RA1772.
6. There are no unique semiconductors though the Plessey SL600/1600 series are no longer made and may now be impossible to replace.
7. The handbook is excellent.
8. The stability is superb, including the BFO which is derived by synthesis.
9. There is not much heat or physical noise, in contrast to the RA1792 which vibrates away gently at 50Hz.

(Continued over . . . .)

Cons

1. Less sensitive than many amateur receivers, but for most purposes and with a reasonable aerial it makes no difference. Excessive sensitivity merely leads to greater intermodulation and blocking.
2. Hopeless S meter type of bargraph.
3. Unpleasant membrane keys. The front panel resembles an office coffee machine. The keys on the RA1792 are far nicer.
4. Hopeless AGC for my taste. My 1650 (probably an early one) clips the first syllable because of insufficient attack time. Chris comments on this. I believe this may have been corrected in later models. Does any one know? The best AGC that I know of, however, is on the Plessey PR2250 and the RA1792 (but don't look at what these originally cost!).
5. The crystal filters and the ovened crystal master oscillator were made by Cathodeon who ceased trading ages ago. A replacement MO that will fit the pcb may now be hard to find and is likely to be very expensive - I know because some years back mine failed, and the bill from Eddystone just for the unit was into three figures. What's more the frequency is non-standard: 5.6Mhz (ie four times the second IF). Were it to be say 1Mhz or 5Mhz I could pipe in the frequency from the output of my RA1772 or 1792 in the next rack.
6. The RF front end tuner is an optional extra and may not be fitted. Prospective buyers should check. The tuner is the size of a large shoe box.
7. A friend reported a continuous problem with his tuner and eventually returned the receiver to Eddystone.
8. The receiver is huge, about 21 inches deep, and at least 6 inches deeper than my RA17, and that's no small set!
9. The BFO is tunable only in increments of 100Hz. This is only critical in some FSK systems.
10. The rx affected other receivers alongside using a common antenna. I suspect some spurii was escaping in the VHF region. I never did track it down, but the rx by itself was fine.

As for the description *"Incredible* ", perhaps a shade OTT when you have seen the products of Watkins-Johnson, Plessey, Racal, Siemens, Rockwell-Collins and R&S, but certainly several quantum leaps beyond the EC940!

I would be pleased to discuss this set with any readers.

2. GEC BRT400 rx

A non-member asks whether there is any connection between the GEC BRT400 and Eddystone. I am currently repairing a BRT402E (a later variant, though the changes are small) and reckon to know it inside out. The answer in my opinion is no. I do not think that at the time (early 50s) Eddystone was even owned by GEC, but I may be wrong.

(In fact Eddystone was bought by G.E.C. in 1966 when it bought Marconi, which itself had bought Eddystone from Stratton in 1965. There is no connection between the BRT400 and Eddystone. At this point in his letter Michael enlarges at length on the G.E.C. set but it's not EUG policy to major on rival marques. I'm sure you understand, Michael; nothing personal!. We now present observations on Michael's letter by Roger Sutton, the set's designer - Graeme)

difficult, the castings for the diecast speakers.

There have been EUGers who have made their own using the 'cold casting' method, but nobody has gone so far as to produce such parts for others in commercial quantities.

If EUGers DO have ideas on this subject then write to me (Ted) and I shall collate any such info for Roger. The re-manufacture of escutcheons (finger plates) or of scales can be a very expensive undertaking.

Ted.

The Atlantic Two

Hey, miracles do happen !!! Bryan Marsh (in New Zealand) has been on the land line to Graeme to say that a pal of his has acquired an ATLANTIC TWO, the only one known in captivity. There appear to be some differences to that shown in the 1928/9 Harrods catalogue as this one has a wood-finish metal front panel not glass. Pictures are 'on the way' and hopefully an article to follow. Ted

Pictures have just arrived, but too late for an article here – Graeme).

The NEC

Well many EUGers have written in to say how they enjoyed the NEC and their visit to the EUG stand. Graeme's comments include the fact that he was kept so busy that he barely had time to go walkabout. Every time he set off somebody else nabbed him for a chinwag. BE WARNED, he is threatening to find himself a false beard to disguise his by now well-known 'fizzog'.

This way he hopes to be able to go walkabout and buy himself some goodies. He did nab a genuine collectors item, a brand new boxed 339 1FF variable condenser. Pride of place in his collection by now

Another very handy item was a nice Indigraph dial (remember them?) as used on many Strattons models. To be used on his next replica. On a recent visit to Wooferton, accompanied by Simon, he was able to snare a new 31A that was destined for the skip, seems fine except for the DEAC which will not hold a charge.

Ted.

(A report on the visit, with details of the Tx's has to be held over until next month – Graeme)

Age-Related Faults

A letter from Ross Paton in New Zealand re comments contained in previous Newsletters, he deplores the use of diodes to replace valves. He says the sets were designed for slow warm up valves, they should be kept that way.

Next comment is that passive components go wrong more often than valves — at least in older sets. It is far more likely that your low gain comes from leaky condensers or out of tolerance resistors than from poor emission valves. Given that there is still a plentiful supply world wide why go for expensive valves when a condenser worth pennies is to blame. There are many 'new manufacture' condensers with high voltage ratings and in general for a given value and rating the new ones are slightly smaller than the oldies. Same goes for resistors.

On the matter of post WWII TRF sets he mentions one made by Pilot for the Admiralty (can anybody help here ? Ted). This used a whole 'fleet' of 6U7G pentodes, he promises a further update on this when he can examine one. There was also, says Ross, the US made HAL, and RAK, TRF set which used 6D6s for its tuned RF and detector stages. The RAK was the LF version but the RAL tuned from 300 Kc/s to 23 Mc/s in 9 bands. Ted.

The Zeppelins are coming – Again!

Non,-.Eddystone stuff this. Apparently a German company is building Zeppelins for cargo carrying, real rigid framed 'aerostats' these, not just gas filled balloons.

As one who at the age of 5 or 6, saw one of the original Zeppelins over Northern England just prior to WW II the idea of the skies being filled with such monsters fills me with unease.

These days they would be a definite hazard to planes, their size, and unwieldy operating characteristics just do not fit in with today's aviation. I once owned a simple spark transmitter that had been designed for use in the old Zeppelins, at the time I thought that the use of such a device in close proximity to such vast amounts of Hydrogen appeared ill conceived and dangerous.

Ted.

Model 888 Output Transfo

Ian has had to replace the output valve on his 888 twice since he has had the set, some 7—8 years now. He has recently had to replace the AF output transfo when the primary winding went open circuit.

This has caused him to consider why he has had so much trouble with the 888. Two factors have been considered so far. He only ever uses the 888 on phones, a pair of 600 ohm ex Air Ministry padded type, and he has noticed from the schematic that the output transformer primary has no tone corrector condenser directly across it.

When used on phones the secondary has no load on it. The tone corrector condenser serves a secondary function in that it will limit high AC voltages across the primary when the transfo is unloaded.

As a result Ian has now fitted a 1000pF condenser rated at 450 vw across the primary winding and he has wired a 12 ohm 1 watt resistor across the secondary.

He has found a replacement transformer and has now recommenced using his 888.

There appears to be no

handbooks are available for most products. One is the Operator's Handbook, which we supply with every equipment. This basically deals with installation and use. The other handbook, called the Workshop Manual, adds information about the circuitry and servicing and includes parts lists and circuit diagrams. This handbook has to be specially ordered as an extra item.

8) STABILTY. Most synthesised receiver's oscillators (including the BFO) are all phase locked or derived directly from a single master crystal oscillator. On the 1650, this crystal oscillator is oven controlled and of very high quality. Thus, after a few minutes warm-up time after switch on, very high stability is maintained over a wide ambient temperature range.

9) HEAT AND PHYSICAL NOISE. Personally I would hope a receiver of that generation wouldn't become too hot or exhibit any mechanical vibration.

NOW THE 'CONS'.

1) SENSITIVITY. Excessive sensitivity is generally not a requirement for VLF-HF receivers intended for professional use with large or high gain antennas perhaps connected via active antenna multicouplers. Because of the relatively high level of background noise present on 'short waves', the 1650's noise figure in the region of 12dB is considered acceptable.

2) S METER. Although not generally a requirement for professional receivers, one is normally provided as economically as possible. The signal strength meter on the present 6200 receiver is similar but much better.

3) MEMBRANE KEYS. Switches and push buttons can be a particularly inconvenient source of unreliability. Membrane keys, although perhaps not feeling so good as some mechanical keys, do virtually last forever even in aggressive, dirty environments.

4) AGC. The 1650 agc attack time is a little slow and can generate a slight click on leading syllables of SSB speech. It can be particularly noticeable if the agc circuitry is out of adjustment. Generally selecting audio agc gives the best results. The attack time of about 20mS was derived from a marine receiver specification. The attack time of the 6200 series is shorter at about 5 to 10mS, which gives better results.

5) FILTERS. Although the filters and master oscillator in Mr. O' Beirne's receiver were made by Cathodeon, for many years now Eddsytone receivers (including 1650s) have been fitted with filters and oscillators from other UK manufacturers who definitely are still in business.

6 and 7) RF TUNER. It is an option and was fitted to certainly less than half all 1650s produced. Later 1650s had the option of a sub-octave rather than a motor tuned bandpass pair tuner. Some examples of the motor tuned preselector could sometimes be temperamental, as alignment of them was not easy. However, they seem capable of lasting many years. Recently some originally manufactured in 1985 have been returned for servicing and can be seen to still be working satisfactorily.

8) SIZE. Yes the 1650 is large, especially in its ISB (Independent Sideband) form. But this does tend to make it easier to manufacture, test and service.

9) THE BFO. The 100Hz steps are sufficient to give standard BFO offsets for CW and FSK mode purposes and allow a somewhat simpler BFO synthesiser design. Smaller steps can effectively be made using the 5Hz steps of the main tuning control (with a resulting offset within the IF filter passband).

10) SPURII. Some spurii from internal receiver oscillators etc. can be present at the antenna socket. If the receiver is operating normally they should be in the very low microvolt region. However, if not properly isolated via an antenna multicoupler (which would hopefully give 20dB plus isolation) they could obviously be picked up on a sensitive receiver tuned to the spurious output frequency.

IN CONCLUSION, the 1650 Receiver was designed to meet the specifications and requirements of the commercial (i.e. not military or amateur) market, at a price which would be acceptable to them (i.e. in the 'medium' price bracket). R.T.Sutton

More From Ted's Mail

Abortion or Hybrid ?

David writes in from Llanelli with some info on his collection and to say thanks for the featured set last issue. He also comments on the new format — easy to use with the PW/SWM binders. He now has two 1650/6 and a 1650/2, he is well on with mods to the /6. He has also obtained a very nice 840A, which a move to his new shack will enable him to run from 110 volts, for cooler operating. He got this at the Elverton Castle rally for £80. At the same rally he bought an 1837/2 from Anchor Surplus, for £175, pretty good that.

The next items were via a 'silent key' sale. Amongst other (non-Eddystone) stuff was a 1990R/2, a mint 958/7E, an 1837/2 in MIMCO Pacific guise. Then later, at a Swansea rally he got a new, boxed, ORION 5000. Still sealed in its packing and with the optional psu built in — for £175 *(N.B. – still available from Eddystone last year at £1,800 plus VAT! – Graeme).*

His last purchase was an 830/7 at the NEC for £180. Must be running out of pennies by now

One last item mentioned by David is an RR1O2 which has a manufacturers label marked RR1O2 and Sound Powered Telephone Company of LONDON ? I can find no trace of this company in either Kelly's or the Compass Guides for the early '9Os, so cannot help David here.

The RR1O2 appears to be a standard Eddystone 1002 case with the guts ripped out (sacrilege !) and a tuner with many small coil cans in what may be a QRM proof bandpass front end covering 150 Kc/s to 30 Mc/s plus the AM/FM band., no audio or output stages at all only line outputs. Whilst well constructed the inside looks as though it has been designed and constructed by an electronics engineer rather than a radio engineer. It also has a NATO stock number. Interestingly the RR1O2 manual gives great detail on how to gut the Eddystone 1002 of its innards to wire in an RR1O2 ! David, MW1DUJ would appreciate any info on this bastardised Eddystone.

Ted.

Help for a 640 Owner?

Ron has a 640 which he has been advised (by a member of his local club) to either 'dump at the tip' or 'sell on to another sucker'. Not being one to take such cavalier advice he has persisted with the necessary repairs and having fitted a new mains transfo the set did work after a fashion. However the IF stages will simply not peak at anywhere near the specified crystal filter frequency. His first task was to replace the 200 pF condensers with new ones. IFT3 was the big shock as it had been converted to a bandpass crystal filter with two crystals about 100 Kc/s off the original IF frequency. This was restored to original with new condensers and refitted. The original crystal was in situ but the glass envelope was now opaque, a sign of a broken vacuum. A new crystal was bought and fitted. The IFs now aligned up on frequency but the crystal filter worked only vaguely and selectivity was poor. So, HELP ANY IDEAS PLEASE ?

For those like myself who dislike the idea of a mains transfo running warm the solution is to replace the 6V6 with one

taking lower heater current. A 6AK6 takes but 0.15 amps and can be used with an adaptor comprising of a B7G holder wired to the base of an old octal valve via a small piece of pcb maybe, and using a new kathode resistor of 520 ohms. Also the rectifier valve can be replaced by a pair of BY127s wired to an old valve base (!!!). In this case there was no problem with extra HT since the replacement smoothing choke had higher ohmic value than the original. Any help re the IF/Filter problem would be appreciated

. Ron *(via Ted)*.

(Graeme suggests that an easier solution for the AF output would be to simply plug in a 6J5G or 6J5GT ***(not a 6J5, unless you want electrocuting!)*** and fit a 2K bias resistor, this will give a 1/2 watt of audio. (Plenty!) My idea for the If problem might be to check that the original ferrite slugs are in use, different ferrite composition might give different results. And remember that with a crystal filter the IFs need to be aligned on the crystal frequency and not to the exact frequency as per the manual, one Kc/s here could make a lot of difference. Ted.)

VLF Aerials

A mention by Anthony that he is now the proud owner of an 850/4 and a query about the best type of aerial to use with this set brought back some happy memories of my experiments in the early 1980s. I had both an 850/2 and a /4 and tried a variety of aerials with them in my search for NDBs and LF standard frequency signals.

I suppose my first results came with the 150 foot long wire running west to east up the back field. Pretty good with many new NDBs but then things began to get out of hand. I soldered a lead-in wire to the top length of barbed wire which ran up the back field and then across the top of the field and down the other side, almost 1000 feet and with good continuity where the barbed wire had been joined. Results were definitely improved down below 100 Kc/s but experiments went on. The next step was to 'liberate' a full 250 metre roll of that yellow/green insulated heavy duty earth wire. This was rolled out on the uphill back field with the near end fed into the 'shack' (bedroom) and thence to the 850. The wire was pegged to the ground with wooden tent pegs. I was impressed with the results from this. My last foray into the realms of fantasy style VLF aerials came when a full loop of this earth wire was connected to the 850/4. Still lying on the ground but now in a neat rectangle with its sides aligned almost N,S,E, and W. The only real gain with this was that I now had a perfect thunderstorm detector, I must have picked up every lightning flash within a thousand miles Strangely I could also hear on about 24 Kc/s the landline phone conversations of a neighbour, never did solve this mystery ! As Anthony comments, maybe he needs a pair of 250 foot masts with enormous dipoles as they have at nearby Criggion for sub communications.

TED.

★

DON'T FORGET, WRITE TO TED:
c/o
JIM MURPHY,
63, WROSE ROAD,
BRADFORD
BD2 1LN

POO'S PONDERINGS

'Stray thoughts from an absent mind!'
by Simon Robinson M5POO

The Eddystone Light

Before I get started I would like to let all those who ordered *"The Eddystone Light"* that they will be dispatched very soon. Our sculptor is making them at cost for us therefore he needs to give priority to his paying business. Please be patient. We can still take orders for more at £10 for UK members but £15 for overseas. Everyone at the NEC thought they were tremendous.

"POO" Grows Up!

The more observant of you will have noticed a minor change to the title of this page. I finally took the plunge and attended RSGB Morse Camp at Harrogate Ladies College. Unfortunately the college was on half term! What a great weekend it was too. I met many very helpful instructors determined to get everyone through the 5 wpm test. The examiners were, despite rumours to the contrary, human flesh and blood too. Just prior to and during the test I can remember that I had never felt as nervous since I took my A-Level exams back in the cretaceous period. The examiners kept us waiting a few minutes before handing me my orange "PASS" certificate. Wow, I'd finally done it! Whilst learning the code was *my* job, I'd probably never have gone to Morse Camp without the encouragement of my good friend Ron Drew G8URU. Thanks a million Ron. The fun didn't end there though.

Having grown rather attached to the "POO" part of my callsign issued at random back in 1978 I rather hoped to keep it. After all, many greet me as "POO" rather than Simon; at least I hope they are greeting me! I checked with the Radio Licensing Authority and was told M5POO was indeed available. They asked me to include a covering letter asking for the specific callsign giving my reasons.

The very moment my official pass slip arrived complete with scary passport photograph all the forms were filled in and returned. This included making extra boxes to tick as the RSGB had sent out obsolete forms. I waited a few days and then, being the patient man I am, rang the Radio Licensing Centre. They told me M5POO was on a "do not issue" list as it might cause offence to anyone issued with it. But, I said, I specifically want M5POO. I was told the decision was down to the Radio Licensing Authority. I immediately rang them and stated my case. To cut a long story a bit shorter, everyone at the RLA and RLC were very helpful and my covering letter was enough to convince them to issue M5POO. It was officially issued on 8th June 2000.

I look forward to gracing the EUG net in future when I get out of bed in time and hope to work some other EUGers too. If anyone out there is putting off taking the 5 wpm Morse Test, stop worrying, just go to Morse Camp and do it!

Restoration Tips and Tricks – Older Valved Sets

This is the main part of "Ponderings" as promised last issue. I must point out immediately that these are my own ideas and they work for me. They are a guide to help you best formulate your own procedure.

Tools of the Trade

Before you embark on any form of repair or restoration you need a basic set of tools and equipment. Tools include a variety of screwdrivers, pliers, wire cutters, trimmers and a 50W soldering iron. Buy good quality tools and look after them, poor tools damage radios and are a waste of money. It is also well worth buying a set of BA spanners covering 0BA to 6BA or even 8BA if available. Both ring and open-ended type are useful. Again, buy good ones.

Many of you will be dying to get out the nice shiny digital meter Santa Claus bought you last Christmas. That's fine but it is very unlikely to give readings that match the voltages stated in the Eddystone Manuals. These were taken using 20K per volt meters and in some cases 10K per volt. You can buy an old AVO 8 for as little as a fiver at rallies. You will also find a modulated signal generator and oscilloscope very useful although many tell me Eddystone did not use them. The signal generator should cover from around 150KHz to 30MHz and the 'scope should have a bandwidth of 5MHz or better. Remember we are amateurs and do not need the most expensive equipment; look for cheap second hand gear at rallies. You may also like to get hold of a Marconi AF Wattmeter for audio tests rather than deafening the household by using a speaker. A VARIAC and Capacitor Reformer and Tester should be considered virtually essential; I know I go on about this but it really makes a difference! As you progress you may add extra items to your workshop but let's get started.

Choosing Your First Project

There are two parts to restoration and repair; one physical and the other electrical. It is essential that one is in keeping with the other. There is no point making a rusty hulk of radio look mint on the outside when the inside is corroded and damaged. It is however worth having a case restoved if the set is good internally. You should also consider the history or 'provenance' of the set. A radio that has an important or infamous past should be subject to very sympathetic and minimal restoration.

Don't dive in to an 830, 880 or 770S as a first project. You'll probably give up. Look for one of the simpler sets such as a 659/670, straight 670 or 840. These are good but basic sets that are easy to work on with lots of space inside.

If one is not provided, contact Dave Simmons for a manual before you start. Obviously you should ensure the set you have is complete whether working or not. DON'T PLUG IT IN YET.

Your first job is to remove all the valves and crystals making notes of their individual location as you go. At this point have the valves tested if possible. If you are in any doubt replace them, as many will be those fitted over 30 years ago. You should now thoroughly clean and inspect the set for damage and burning. A small vacuum with a fine nozzle and a paintbrush are useful here.

Nicotine – The Radio Killer

I DO smoke but NEVER near my radios. Nicotine kills radios period! It clogs up controls, valve sockets, relays etc... and causes overheating and arcing. If you have a "brown" set then there is a rather unusual but effective cure if you're brave. Dismantle the front panel and remove it. Remove any valves and covers that are easily accessible. Place a rubber mat in your bath or shower and stand the radio on it. Apply copious amounts of Jiff Bathroom Mousse (either Lemon or Spring Fresh is good) to the set top and bottom and work in with your paintbrush. Wait about 20 minutes. There should now be a thick brownish goo running out of the bath. Using ***hot*** water from a shower head thoroughly rinse the set top and bottom getting in to any crevices with that paintbrush. Once dried initially in the bath you will need to move the chassis to your airing cupboard where it should remain for at least two weeks. You can use this time to work on the front panel or get the case restoved.

After two weeks take the radio out of the airing cupboard and it should look like new. Now you will need to grease and lubricate all moving parts e.g. switch wafers, capacitor bearings and dial drives.

Initial Tests

Inspect the set for any obvious signs of burning or 'external interference' by others. DO NOT twiddle the alignment cores or trimmers. If the set is an AC/DC set, i.e. it has no transformer, make sure there is no connection between either mains input lead and the outer case. The internal chassis will often be totally insulated from the case but a previous 'expert' may have replaced the fibre insulators with metal washers. Be warned, it's common!

The next step is to make sure the mains lead is intact, if not replace it. For a suitable plug and socket replacement see last issue's Ponderings. If the set uses silicon HT rectifiers check them for shorts. Also check the spike suppressor capacitors across the transformer if fitted. Next remove the wires to all HT smoothing capacitors if they look intact. Using the EUG Capacitor Doctor or similar device attempt to reform the capacitors to their full working voltage. If they look swollen or the little rubber dimple is anything other than flat, change the capacitor for a new one. New capacitors are difficult to find so buy them when you can for the future. Don't forget to reform OLD, NEW stock too. Check the fuses are the correct rating and type.

Higher than usual value fuses or 'wire wrapped' items should alert you to potential problems although these are normally caused by defective HT capacitors. Once reformed or replaced, reconnect the capacitors.

Test for Smoke

We now need to make sure the set has not lost it's smoke; see last issue. A Variac is useful here. Insert the rectifier valve ONLY and check the mains voltage selector is set correctly. Connect the set up to your Variac set to zero volts. Connect your meter on the 500VDC range across the HT capacitor(s). Switch on and slowly bring up the voltage until the rectifier begins to conduct. Make sure the mains transformer is not overheating and that the voltages are within that of the capacitors. Remember, with no load the HT voltage will be beyond the normal working voltage. If all is OK here switch off and insert any voltage stabilizers. Repeat the switch on procedure checking that the regulated voltages are correct. Assuming all is OK switch off.

Going for Gold

Now insert the remaining valves and connect the set to a speaker and an aerial. Again switch on and bring the set up with a Variac watching for any signs of overheating or smoke. Use your nose carefully here! With luck the set will work either perfectly or with faults. If problems are present you need to check bypass/decoupling capacitors (especially Hunts type) for leakage. Check all anode, screen and cathode resistors. Replace with the correct wattage please. At this stage you will need your manual to check voltages around the valves. If you have a problem here there are several EUG members, myself included who will be happy to help.

Alignment

In my experience I have found that the original alignment from the factory rarely shifts much unless it has been interfered with. You will have to follow the procedure in the set's manual for alignment, as each set is slightly different. Remember that coils set the low end of the scale and trimmers the HF end. If the set is a long way out a great deal of scale spinning will be needed. Fortunately this is an Eddystone plus point.

"As I understand it, the poor chap couldn't decide on which side of the signal to place the local oscillator!"

Sets with 455KHz (or similar) Intermediate Frequencies are the most difficult to align on the higher frequency ranges. You can easily try to set the calibration to the IMAGE frequency.

Hopefully your set will not have been too badly interfered with. The golden rule is **"IF IT AIN'T BROKE, DON'T TRY TO FIX IT".**

Well, that's all for this issue, I hope it's given some of our armchair engineers the incentive to bring another Eddystone gem back to life for their enjoyment. Believe me when I say that using a set you restored yourself is almost as good as sex; if I can remember that far back! ★

☆ The EC10 Report ☆

An Occasional Series about Eddystone's most Successful Product

By Graeme Wormald G3GGL

The EC10 was Stratton's third solid state design (not the first, as many would have you think!). It entered the High Street in 1963 and remained in production until 1976 (long after the sale to Marconi). It spawned the popular EB35 broadcast set which then turned into the EB36 & EB37.

As with all Eddystone products it was hand built in small quantities. Peak production was about ten a day. Let's assume that average production was half this, for 250 days a year. That makes 1250 a year, or a total run of 17,750. Wow!

Add to this all its EB relations and you're into what is undoubtedly the greatest quantity of any one variant ever produced at the Bath Tub. No wonder it accounts for so many enquiries from members (and others!) about the series.

Let's make it clear from the start that I'm not a solid state buff. I make no secret of it. I earned my living as a self-taught engineer in the broadcasting industry until 1960. Then I saw the writing on the wall and decided I didn't want to spend the rest of my life at night-school! My aptitude for the new technology was marginal. I changed seats in Master Control and became the Transmission Controller.

Having got that off my chest I have to accept the fact that the EC10 family is so much like old technology, that I can at least create a focal point for information interchange.

One of the queries which cropped up recently was concerning drift on Range 3. A former member in France reported that he had cured it in his EC10 by making a change from the very early OC171 germanium transistor to the (slightly) more modern silicon BSX29. But he didn't tell us about the other circuit changes involved.

Not being sufficiently literate in these matters I threw the question open to members and had quite a spate of comment, all of which told me that you can't change from germanium to silicon without redesigning the DC arrangements.

Necessity being the mother of invention, most practical offerings come from members who have a junked set, and no worries about making it worse. (Unlike myself who's not prepared to risk his perfectly good EC10 & EC10 Mk II).

Dave Jones (MW1DUJ) writes to say that his EC10 had been zapped by lightning. The RF stage was dead. He tried a BSX29 and got zilch. But he had a stock of old AF139s left over from his TV servicing days. He tried one and obtained first-class results with no other circuit changes. Thanks, Dave. (Now try it in the local oscillator . . .)

Back now to the Range 3 drift problem. Pete in France was not the only one to have it. Whilst rooting around I found the following slip of paper:-

Eddystone Model EC10 Receiver.

Range 3 frequency drift modification procedure:-

1) Locate and identify 22 ohm Resistor R12 fitted on range 3 oscillator coil L14.

2) Replace R12 by the enclosed 150 ohm resistor.

3) Re-adjust Range 3 calibration by means of C41 trimmer and L14 core, as per manual.

4) Check frequency drift. In the unlikely event of excessive drift remaining, try a new OC171 oscillator transistor TR.3 - supplied separately.

ACH/GT/671 EDDYSTONE RADIO LTD.

Amazing what you find when you look! Get to work, all you EC10-owners. . .

The most common question is:- "Where can I get new IFTs" (intermediate frequency transformers – 465 kc/s). Our EUG spares supplier, Dave Simmons, has used up all his stocks. . . . It seems the phantom fiddler has had a field day with EC10s. The IFTs are rather delicate (by old-fashioned standards) and it's easy to jam the cores and split the formers. And they don't make them any more!

My own view is that it's worth experimenting with the well-known, inexpensive, and widely available TOKO range of IFTs. Ted disagrees with me and says the impedances will be all wrong!

But, says I, there's only one way to find out, and that's to try it. I know that TOKO IFTs are only single-tuned, but they are very hi-Q and for general listening I would have thought the selectivity would be quite adequate. But if the ultimate is desired, there's plenty of room to mount a pair of them side-by-side on a piece of VERO and inductively couple them using the aperiodic secondary. Then mount them verticaly on the printed board. Any triers?

More News and Views next month . . . *Graeme.* ★

EDDYSTONE RECEIVERS FOR METEOROLOGICAL WORK

The British Meteorological Office has ordered 22 general purpose v.h.f. receivers, Type 990R, from Eddystone Radio. They are largely intended for use with radiosonde equipment, to receive information on meteorological conditions in the upper atmosphere from radiosonde balloons and rockets.

The Eddystone 990R receiver was first introduced at the end of 1967, as a replacement for the highly successful 770R equipment. It provides a completely solid-state equipment with a unique free-tuning range from 27 MHz to 240 MHz.

The receivers will be used for radiosonde work at meteorological stations in the United Kingdom and overseas. They will receive information on temperature, pressure and humidity transmitted from both conventional balloon-carried radiosonde, and a free-falling type which is ejected from a rocket. This latter type is usable at more than 200,000 feet and transmits f.m. signals.

Reported in "Radio Constructor" magazine for June, 1970.

MEMBERS' FREE ADVERTS

WANTED: EC 958/7, would consider the 7E or the 958 (analogue readout) model. NOT QTHR. Call Tony, G0LGT, evenings on 01494 778352 (Chesham)

FOR SALE: 680X and 770R. Reluctant sale but need the space, both working and in good condition, £75 each. Also yaesu FR101 160m to 2m (but not 4) in 500 kHz bands £75; Lowe XCR30 H.F. good condx similar cct to FRG7 £50. Both G.W.O. & condx. For anybody still building I have a quantity of EF50, EF54 and EF55 also a chassis from a GEE RF26/27 (3 off B9G sockets) seems original but tuning caps reduced vanes. For the Tx'ers some 807, 5V4 & 5R4. QTHR but prefer phone first 020 8303 1879 (new number). Buyer to inspect and collect Eddystone & Yaesu Rx's. (Bexleyheath).

WANTED: 504,556 and 659 receivers, any condx, but complete if possible. Also Wanted 770S and 960 receivers, and EP20 Panoramic adaptor. Wiil buy or swap for 640, 730/4, 840A or 770R receivers. Phone Dave on 01869 347504 or e-mail windana@onet.co.uk

WANTED: Eddystone 670C cabin broadcast Rx. Must look good but need not work. Phone Graeme, G3GGL, (Worcestershire) 01299 403372 or e-mail g3ggl@euphony.net

WANTED: Model 770U (the UHF one). Working order not essential but would prefer one that has not been refurbished or significantly modified. Phone Martin on 0117 969 3796 (Bristol area) or e-mail martin.ackroyd@virgin.net

WANTED: For 880/4 – complete 100kc xtal calibrator unit & main tuning cover. Call frank Maitland on 0777 178 6750 eve & w'ends.

FOR SALE: Eddystone 680X with round matching speaker. GWO & condx. £150 ono. Call Martin at works QTH, 9 to 5, 01727 850961 or mobile anytime 07941217711 (Herts).

FOR SALE: Eddystone EC10 Mk II – needs a little external TLC but works well £75. Eddystone 659/670 – restoration project complete with spare set £35. Eddystone 640 fair condx but needs a little internal TLC, valves are good £55. Eddystone 770R – complete but untested £40. I also have an AVO CT160 valve tester, signal generator, digital frequency meter and other test gear for sale. Please call me if you want a list. **WANTED:** Please see my list in last month's newsletter excluding a 556 which I now have. Call Simon M5POO on 01434-633913 or e-mail simon@nomis.co.uk

WANTED: Good clean EA12, preferably restored to like new, Contact C6ANI, P.O. BOX N4106, Nassau NP, BAHAMAS