

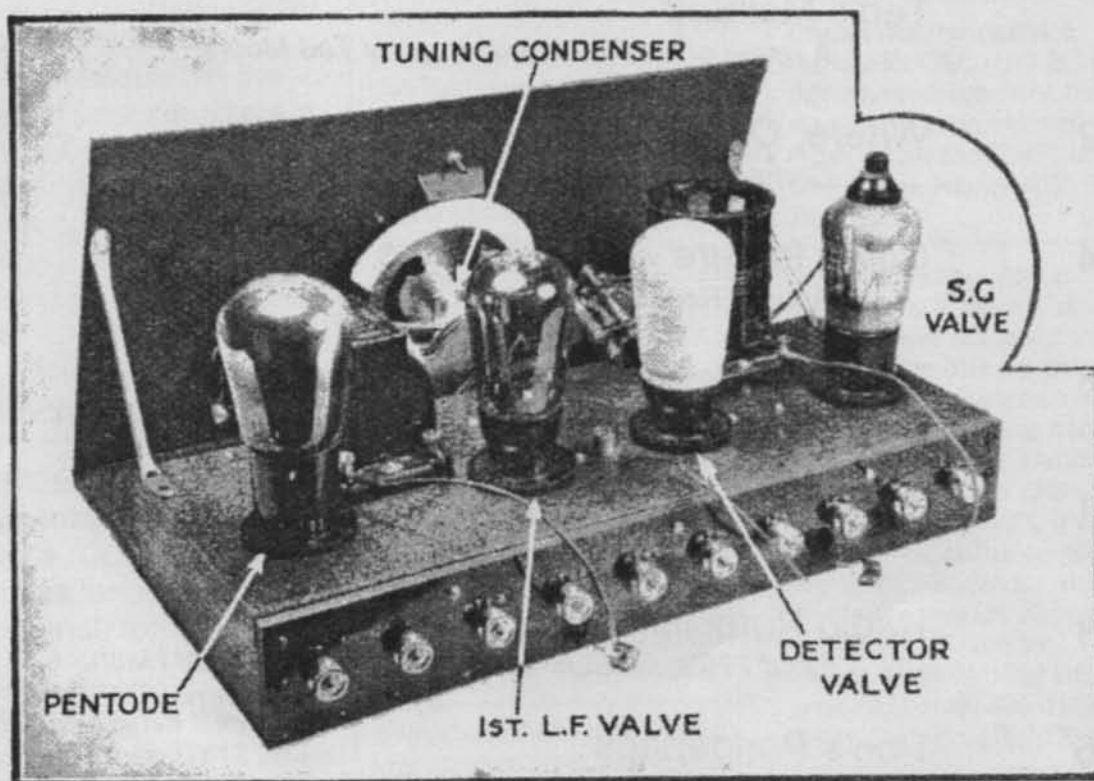
Lighthouse

Founded 1990

The Magazine of the
Eddystone
User Group



Issue 74, August 2002



"The Eddystone Kilodyne Four is a short-wave kit for home-construction. It is the only thing of its kind on the market."

Rave review inside presented by

"Wireless Magazine" - Jan. 1932

LIGHTHOUSE

ISSUE NUMBER 74, AUGUST 2002

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Chris's Column

You should now have received your copy of the new QRG "Quick Reference Guide" and what a guide this is. There is no one who will not fail to be impressed by the hard work that Graeme has put into this guide. Nearly every set has an illustration and it runs to 60 pages. Surely an impressive work of reference. Thank you Graeme. The EUG is very lucky to have someone with his devotion to our interests. It must be nearly a full time job. I was able to receive my copy in advance at the Stan Carney annual bash for Eddystone Veterans. This was the third such do and each time Stan seems to conjure up brilliant weather. I took a very nice picture of Graeme and Jesse who helps him with the newsletters. Hopefully Graeme's modesty will let us all see it on this page.



The other big event was, of course, the firing up of G6SL on the VHF NFD weekend. As the operator I found the band conditions quite difficult with most contacts being made on 80m or 40m. In the end I managed to work 25 members and in total made about 60 contacts. The higher bands were a washout and one of our American members Joe LeKostaj K9LY tried in vain to work us but could not hear any European stations from Chicago. The schedule I set up with Graeme was punishing and I should have taken into account my other responsibilities on the NFD (barbecue organiser and breakfast

cook!). Still the whole thing was very enjoyable and we will do the same thing next year. Perhaps local EUG members might like to come along and operate the station. I am in the process of getting a QSL card printed for G6SL that we can use whenever the station is put on air. (See 'Ramblings')

I gave my talk to the Bromsgrove ARS in June on the Eddystone Early Years and in the preparation of the talk realised how important it is that researchers can have ready access to the Eddystone Archives now in the possession of Marconi. A little bird tells me that these will soon be given up by Marconi and be available to those who can appreciate them best. I can say no more because I know no more but having been involved in the fight to stop them being sold off at auction, I am assured by those that know that they will be safe for the future.

By the way I saw an item in a trade magazine 'Radio Now' that SBS will continue to sell Eddystone FM transmitters under the name Eddystone Broadcast. There is even talk of Ring Communications making another batch of S6200. I will believe it when I see it.

My best 73

Chris Pettitt - GoEYO

Patron

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THE LAST VOYAGE OF EDDYSTONE 504, SERIAL NUMBER: BG0558

By Peter le Quesne, ZL4TCC

I have been involved with Eddystone receivers on and off since the early 1960s, when, after attending courses in the United Kingdom, I returned to my home town Napier, New Zealand. This has a deep water port and I spent several years repairing radar and communications equipment on Merchant vessels. As a result I was often asked to repair the crews own radios, mainly Eddystones. Most vessels' power source in the 60s was 110/115 volts DC. I kept a good supply of the 'U Series' (AC/DC 0.1 amp heater) valves.



Peter le Quesne, ZL4TCC, with the Eddystone S.504 in his shack

Over the years I owned several Eddystone receivers. Except for a 888A, I cannot remember the types as I sold them in the early-mid 1980s. In the mid 1990s I obtained a 940 (S/N: LT1144) which I still have and also now have a 770R (S/N: CF0186) and a 640. (S/N: GZ1137). I also, last year, had a 504, (S/N: BG0558) for several months, and now the story begins.

Most Saturdays from about 4.30pm to 5.30pm I go to my club for a well-earned beer with some old school friends. One Saturday last October a friend called me over to his table. Stuart is a long time member of the New Zealand Radio Dx-League. He advised me that there were some Eddystones for sale through the League at Oamaru in South Island. Hence I contacted the person concerned and was invited to submit prices by the end of the month.

I was unable to inspect the sets and the DX-League person did not know much about them as they were from a silent key estate. I was unable to find out any further history except they had been in Dunedin, some 100 miles south of Oamaru, for many years.

The sets arrived in far better condition than anticipated, with little if any home modifications. All sets were complete. The 504 had a broken cord drive to the band indicator. The 870 had been modified for use with 6.3v valves and a transformer added. (870 S/N: AJ1387.)

My tender was accepted and I paid the following prices. 504 NZ\$51.00 (£15.00); 640 NZ\$51.00. (£15.00) I also bought an 870 for a friend. NZ\$ 35.00 (£10.50). I contacted a local furniture removal company (Conroys) and they agreed to bring the sets to Napier for NZ\$45.00 (£13.00). The problem was the weight and Cook Strait, which separates the North and South Island, and is the most expensive piece of water in the World for moving freight across, worse than the English Channel.



Peter with Eddystones and aliens!

By this time I had been in touch with David Simmons, mainly over manuals and spares for the 940 and 770R. I noticed David was looking for a 504 and he stated they were hard to obtain in the United Kingdom. So I offered him the 504 I had obtained.

The big question was the cost of freight. So I approached Conroys, as they ship overseas.— wait for it, NZ\$400.35. (£125.00) That was for packing and delivery to David's front door at Bicester. As I have a cheque account with Lloyds Bank, David was able to pay the money direct to my account.

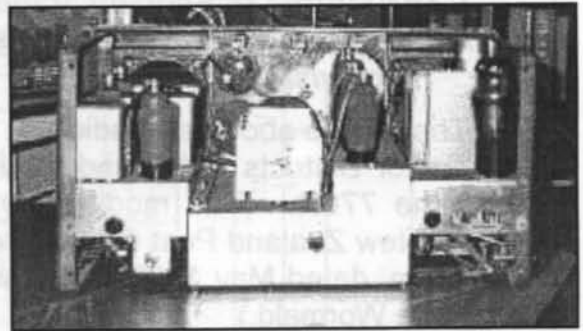
I thought I would track the passage of the 504. It went from Napier back to the Port of Lyttelton* in the South Island. On 16th March it left on the container vessel Kota Jasa for Singapore, then transferred to another container vessel (Name not known) for

Tilbury Docks. It was then taken over by International Movers, of Wembley, via TNT Couriers, who delivered it to the Simmons residence on 10 May. HM Customs did not charge any Duty or VAT. May be that's because I addressed it to the Eddystone Museum C/o David's address.

See photos of the 504 both in NZ and the UK. As one will realise it is a prize in David's collection.

** The 'Lyttelton' family of Hagley Hall has provided High Sheriffs of Bewdley and Lord Lieutenants of Worcestershire as well as the Governor General of New Zealand and jazz musician cousin Humphrey Lyttelton.*

For reference the 940 cost NZ\$200.00 (£60.00). The 770R NZ\$300.00 (£90.00). It would appear that, when available, Eddystones are possibly cheaper in NZ than the UK. Note that you get about NZ\$3.30 to £1 Sterling. Prior to WWII until the middle 1970s N.Z. had a very strict import regime, which made it hard to import luxury items, unless one had overseas funds.



Plenty of octal valves tucked into the back of the S.504. This was Eddystone's first post-war communication receiver and used the same series of Mullard 'Red E' valves as the wartime S.358.

I have sent Graeme Wormald, copies of advertisements from the late 1940s into the 1950s, advertising Eddystones by the NZ Agents.

"Limited stocks arriving, order now". The prices were also in many cases beyond the average person. I cannot say with any authority what the market was for Eddystone in NZ for private persons.

Various Departments of the NZ Government bought receivers, and over the years these come on the surplus market but not in quantity. The 770R I have was originally used by the Radio Inspectors of the then New Zealand Post Office, in a station wagon at Blenheim, at the top of the South Island. It was converted to run from a 12 volt battery and Vibrator pack.



The much-travelled Eddystone S.504 returns to England at the home of Dave Simmons, EUG's Archivist, in Oxfordshire

There were about ten Radio Inspector Districts in NZ and they all had the 770R. (The modified, very large, New Zealand Post Office Circuit Diagram, dated May 1953 is now with Graeme Wormald.)

As a matter of interest I bought my first communications receiver, a CR100, in Lisle Street, London in 1957. Got it somehow to Waterloo Station, then on the train to Ashtead in Surrey, finally to the place I was living. Then I discovered that the side of the street I lived in was DC mains. Finally I got the CR100 to New Zealand and sold it at a good profit. I remember paying £25.00 for it.



Unpacked and ready for inspection

Over the years New Zealand has been (and still is) a store-house of old communications equipment. It is amazing what comes up from time to time. A lot, I feel, has been stored for years and then for various reasons comes on the market - if you hear about it — like the chance meeting re the above-mentioned Eddystones. Prices in New Zealand seem to be much cheaper than in the UK when one can obtain the items.

Re Peter Lankshear's article on capacitors in the last Lighthouse, and his recommendation to try Antique Electronics Supply in Arizona USA. I sent an order off for 175 x 400 volt Metalized Polyester Tubular, Axial Leads capacitors, including some Silver Mica. I faxed the order Monday night and Tuesday morning had a reply with copy of invoice, excellent service.**

Peter le Quesne, ZL4TCC

23 Oriel Place. Napier. New Zealand.

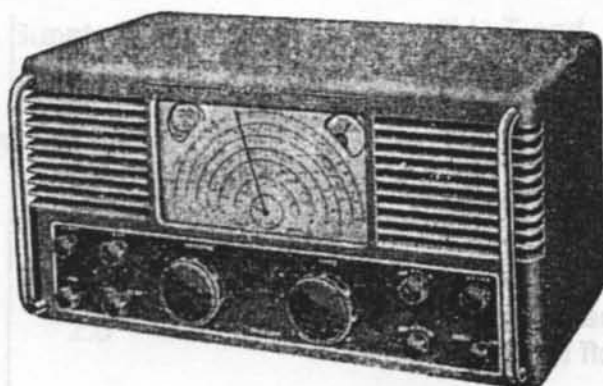
E-Mail: pleq_tcb@clear.net.nz.

** Here's the prices in \$US of some of those 400v tubular film capacitors:-
0.01mfd - \$0.26 (about 17p Sterling)
0.047mfd - \$0.34; 0.1mfd - \$39;
0.47mfd - \$0.54. Paid for by Visa, on an order for \$88 (£59) the carriage was \$13.50 (£9). It seems worthwhile stocking up for the future. - Graeme.

An Advert from the Pacific ham radio magazine "Break-In" of the late 1940's (just see that price!!)

YOUR CHANCE NOW . . .

to secure a "504"
EDDYSTONE
Communication Receiver



We are pleased to announce the arrival on the "Rangitata" of a small shipment of "504's." From this shipment only 8 remain to be sold.

This receiver is in a class of its own and surpasses all other receivers for performance and reliability. A few of its technical points are:—

Range 10 metres to 540 Kc/s.
Vernier Tuning 140 to 1 ratio
Full Vision Dial
Two R.F. Stages
B.F.O.

Crystal Filter
A.V.C.
Noise Limiter
"S" Meter
9 American Base Tubes

£108

Place your order now with your local Radio Dealer

Factory Agents :

ARNOLD & WRIGHT LTD.

BOX 198, TE ARO

BOX 1076, CH.CH.

BOX 2253, AUCKLAND

Could it be that one of these eight sets became the subject of Peter le Quesne's article (above)? Quite likely, I should think. . . .

Ted's MailBox

A Review of Mail and Happenings
By Ted Moore, Founder of EUG

Getting Old

That's me I guess ! What brought it on is not the fact that I recently bought myself a racing type bike and am very much enjoying getting around the locality on two wheels. No, what happened was that I showed my 940 off to a local school.

At the request of one of the teachers I took it along and powered it up for the pupils to try, a forty foot random wire was rapidly hoisted high up in a tree, fed through the open window and we were off. They were especially intrigued by the ability to hear such stations as Gander ATCC, the RAF Volmet etc; and some foreign Broadcast Stations.

Then came the crunch, the question put by one wide-eyed pupil. "How old is it - the 940 that is. When I told them, and explained how we interpreted the serial letter/number plate I was greeted with the comment. "It must be almost as old as you are!" Ah well, such is life.

The EC10 Schematic

I have several schematics of the EC10 and the EB35 series and they all have one thing in common. The ERRATA notes in the top left hand corner of the schematic are FIVE in number.

In my experience all copies of this circuitry bear the same notes, and my oldest copy of an EB35 schematic is a

multi generation photocopy which I obtained in the early 1980s.



EC10, Eddystone's solid-state largest production-run.

Recently I had some correspondence with Stan who complained that whilst repairing and restoring a pretty beat up EC10 he had discovered that according to the schematic given him by the previous owner the OA70 in DI position was reversed (according to the schematic!)

I referred Stan to the ERRATA notes as mentioned above and was astounded to hear by return mail that the notes re the OA70 (DI) and two DD006 (D4 & 5) were absent on his copy of the schematic. How to explain? I cannot

The note re R24, the note re C10, and the note re C23a are there okay but not the others. I now have my own copy of this schematic as a curiosity, unfortunately there is no way of tracking down the provenance of what must be a VERY early schematic of the EC10. If anybody else has an EC10 Instruction Manual where the

diode notes are omitted then I would appreciate knowing the date which is printed on the back page of this manual in the bottom right hand corner, mine obtained from 'GGL says "Issued December 1968".

An 830/7

I have made tentative arrangements to view and possibly purchase an 830/7. It means a trip to West Sussex and I cannot see myself getting there for a couple of weeks so this set will hopefully be the subject of a few paragraphs in the next issue.



Eddystone 830-series, pride of the 1960's

My reason for saying "tentative" arrangements is that I have been warned that some internal mods have been done by the vendor. He admits that the mods do not appear to have helped improve the set. I shall decide when I see it.

Noisy EB36

This set had gradually become noisy over a period of time and the owner had sent it to me for repair. Compared with my own it was somewhat noisier on all bands, the noise was slightly reduced if the six volts supply to the RF stages was dissed. A check on this supply with the scope showed some spiky waves which ought not to have existed.

With the six volt supply STILL dissed from the RF stages the zener regulator diode D3 (an 0AZ203) was removed by chopping both ends from the circuit board leaving a short 'tail' poking through the holes at each end. Sure enough the spikes had gone.

Fitting a more modern six volt zener AND replacing the 10 muffs condenser which parallels it produced a complete cure for the noise. This could be a clue to the increasing noise with age syndrome on this series of first generation transistor model. Worth trying anyway. The actual noise generator would have been the zener but the condenser ought to have removed the noise the fact that it did not indicates it had "had it".

Super Ginormous QRG

Well this time Graeme has really done it ! He has sent me preliminary details of his latest version of his Quick Reference Guide as told by his computer; and it promises to become a Magnum Opus.

We ought to be getting it soon and I trust that EUGers will recognise the amount of hard work and dedication which has gone into this work of art. A lot of 'midnight oil' must have been burnt during the editing. I cannot wait to get my sticky hands on my copy. (Note from Graeme - You should all have had your copies by now.)

Rustlers - of the Electronic kind

Some time back, actually issue 65, 'POO mentioned his tracking down of a 'rustler' in a 770R. His eventual finding was the AF coupling condenser in an almost inaccessible place.

A very similar fault was recently encountered on a Marconi CR150D. Luckily I recalled Simon's experience and when I discovered that the noise

persisted with gain at minimum I headed straight for the pesky condenser.

This proved not to be the original as per the schematic but a ten times higher value paper condenser of about 1960s vintage. It was replaced by the correct value from a modern range of polypropylene condensers and the cure was complete.

Now comes the twist to this tale (tail). The condenser in question was tested and found to be not only leaky and to be a prolific noise generator, it also produced a nice 1.2 volts when connected across my DVM. Left connected across the DVM overnight the voltage was still almost one volt when I arrived next a.m. On a HEATH Valve voltmeter the reading was down to about a half volt but reasonably steady. This is not a case of Free Power as on an AVO 8 the reading was nil.

Ultra Violet 6V6 ?

When Peter fired up his 640 after many years of it having been left languishing in the cupboard he got less than he had been expecting. Very low AF output and some distortion.

First thoughts went to the speaker which he had also recovered from the cupboard. But no, using 'phones he got the same result as before.

Perforce, he had to remove the 640 from its cabinet and power up again on the table. There was a very definite glow from the large bottled 6V6 which was a very vivid purple when he turned out the room lights.

The 6V6 was replaced with a 6V6GL poached from a small audio amplifier used as a shack to house intercom. No more purple glow and the 640 functioned as it had in 'ye olde days', says Peter.

A really close look at the duff bottle showed a hairline crack in the glass just above the point where it was joined to the base. Something else to look for in future says Peter.

Non Eddystone Enquiry

From an EUGer this, he does sound a bit desperate so here goes. Alan has been given a very nice McMichael of what he thinks is 19405 vintage. It is designated the Colonial Supersonic Receiver and was the property of his late father in law.

That, so far, is the good bit. He can see that it apparently used an accumulator for the LT and a plug in HT battery but as there are no valves he doesn't know the voltages of these supplies. From much perusal of the under chassis wiring he can make out that the set used three pentodes and a triode but has no idea what they were.

Since the set is such a nice looker and is in pretty good condition he would like to try and restore it to a functioning item, it would look good in any living room and as it covers both medium and short waves it could still be used. Can anybody let Alan have some gen on this model ? Write to me and after a quick 'shufti' at what appears to be an interesting set, I shall forward the info.

670A with Low Gain

This set was seriously lacking in RF/IF gain when I received it recently. A signal injected across the volume control proved the AF stage to be fault free.

Using the scope probe it was soon found that there was almost no signal across the secondary of the final IF, but loads of signal across the primary. Oh heck, here we go again was the way I began to think. I have had

numerous o/c IF windings in my time and dread these repairs. My fingers are nowhere near as nimble as of yore.



Model S.670A, the Seafarers' cabin set of the 1950s

I began by removing the wiring from the base of the transfo and removing it from the chassis. Primary read fine on a meter but there was zilch continuity on the secondary. A case of opening up the can and guess what? The earthy end of the secondary had corroded through, no green goo but simply gray wire ends.

A small length of tinned copper wire was carefully used to bridge the gap and the transfo was checked, both for continuity and using the ever handy Heath RF1U signal generator it was checked for IF signal transfer before being re-inserted into the chassis.

This small but time-consuming repair job proved to be the only thing necessary to restore the set to full working order. All RF and IF trimming was accurate within the maker's tolerances and so was not touched.

Since I do not charge highly for my labour the owner was a very happy man. I charged him a 'tenner' for my work and with no parts needed he went off with his repaired 670A, promising to bring any other repairs to me. Hope they are not caused by dud IFT5.

The 870A

This really is a lovely little set, a true mini Eddystone and despite its limited controls it can provide hours of entertainment.



Model S.870A 'cabin set' of 1960 was Eddystone's smallest valve AC/DC radio at just 11 inches wide

The set I bought recently was, and is, in good working order, looks newish too and provides good short wave broadcast listening. I shall someday need to replace the AF output bottle which shows a lack of emission yet continues to provide plenty of output.

It is normally used with about twenty feet of wire hanging out of the workshop window towards the ground. Whilst tuning up and down the other day I came across a clear yet not too strong SSB station and being too lazy to fire up another receiver I simply stuck a length of scrap wire into the coax output socket of the previously mentioned RF1U sig genny.

This when tuned across the SSB signal enabled me to resolve it quite well. Anyway the signal turned out to be a broadcast station in South America giving a spanish language news and current affairs programme on SSB too It does show that the 870A is not limited to AM reception though. I have since used the same method to resolve a number of utility and a couple of amateur transmissions.

Admiralty Station BYE

I was intrigued some months back when I began exploring this area by car. There at the roadside was a sign which indicated 'Old WT Stations' it has since disappeared but the station is still there and the truncated but sturdy mast is bristling with dishes and some VHF/UHF folded dipoles.

I tried to get info on site but apart from the modern day mobile phone engineers there was nobody there. Talking to these guys got me nowhere, nobody seemed to know anything.

Further investigation showed that this station near Foxhall on the outskirts of Ipswich was an Admiralty WT Station many years ago. Even more digging and I have discovered that this site was originally the Admiralty station callsign BYE and that it operated on the wavelength of 2400 metres. This works out at about 125 Kilocycles. It boasted two towers in those days and had a claimed range of more than 250 miles.

The transmitter was of the 'improved spark type' and emergency power was provided by a large paraffin engine dynamo giving direct current without the need for rectifiers.

It is nice to have my curiosity satisfied and to know so much about this historic site, my thanks to Miss Taylor a local librarian.

If anybody wishes to locate this site it is marked on the O.S Explorer number 197 and can be found due east of Ipswich on the north side of the Foxhall Road at Foxhall Heath.

Back to the Model S.400B.

A letter just today from a non-EUGer but evidently somebody who has access to our Newsletter. Bob tells me that if any of our members out there has back files of the old, original,

Wireless World then there was a write up of the S.400, not the 'B' version, in the November 1943 issue.

I don't have access but I would guess that somebody out there does. So please, can you check out this info for us all, it may just possibly shed some light on the topic of this mystery model.

Any such info can go to 'GGL who will disseminate it in the usual manner to all of us. PLEASE.

Memories

Back in the '80s when I was first considering some kind of group of Eddystone aficionados I visited the Bath tub on several occasions. One of those I met had long since retired but could not completely tear himself away from the place.

Geoff and I corresponded over a period of a couple of years and from him I received a fair amount of photocopied schematics, blueprints etc; relating to the pre war models. He was as keen as I was avid for such info to be made available to us all.

A couple of his letters have comments a propos sets which have featured recently in the pages of this Newsletter. I have appended them to my copy for this issue in the hope that 'GGL will be able to scan them into his computer for use in the next issue. He mentions the work which he shared at the outbreak of World War II on the VHF equipment for the Met Police; the 770M, 770R, 770U and 770S. Then again we have mention of the S.700 heavyweight, the All World 8 and its derivative the LPC, alias the R101. He also confirms the usage of the 440/450 transmitter/receivers on D Day. Enjoy it all.

(See our item at the end of this MailBox - Graeme)

E.U.G's Future

There have been a couple of letters in my post lately asking about my future and also as to whether I had any intention of taking a 'larger' role in the management of EUG.

I have not even considered discussing this with 'GGL & Co for the very simple reason that I know darned well that neither I nor anybody else I know could do anywhere near as good a job as Graeme. This Newsletter has grown and grown whilst he has been in charge, membership has increased, the quality of our organisation has improved considerably whilst it has been in the hands of 'GGL, 'POO etc. I am happy to leave everything in that way. However I shall be available to them for any chores which they consider can be entrusted to me. So please, no more letters on this subject. Ted.

Eddystone Pennies

Remember some time back we had a bit about this in the Newsletter? Well at a recent Salvation Army jumble sale I found a saucer full of old pre decimal REAL coins. Amongst them a number of pennies. Wonder of wonders I am now the owner of a Lighthouse penny dating from 1944. It is not very clean and I am undecided as to whether I ought to 'shine' it up a bit or leave it dull, as is. It is a nice enough memento and one I shall treasure. How much did it cost me?

Inflation is rife, I had to pay out Sop for it.

EF91- 6AM6 etc;

When I went to the Elvaston Rally recently I bought very little of Eddystone related stuff, just a basket case 840 for spares. What I did find, and buy, was a box of 12 of this type

of valve. They were in the typical 'bulk pack', as they were supplied to manufacturers in the '50s and were all new and unused. I have wondered just what I shall be using them for since very few of the sets I get for repair use this valve. If I come up with something I shall share it with EUG, unless I get a sudden rush of sets needing them, i.e. the 888.

Arial Theory

The more I hear and read about the theory of our skywires as used for reception, the more I wonder whether we need to bother

I guess the 'random loop' which I saw at 'GGL's QTH was a prime example. This is used for transmitting on the amateur bands too.

It was just a few weeks back that I heard from one EUGer who had spent a lot of cash on a commercial kit and had found after installation that it had a performance much worse than the random wires he has tried in the past. Noise pick-up especially was BAD.

Whilst the bought-in system is still there he now enjoys good reception on almost all bands HF and MF from a 'Z' configured random wire of about 100 feet which is never more than 25 feet up and droops to about 20 feet at one point.

My present trial System, if it can be given that grandiose title, is perfectly satisfactory and yet it consists of little more than a random wire of some 70 feet of teflon insulated 'hook-up' wire strung between the outside wall at first floor level and a suitable tree. Aimed almost due North West I find it gives me all the signals that I need.

Very loosely coupled by winding a few insulated turns around the trial of my hand-held scanner it even improves the VHF/UHF reception quite well.

Those 100 Kilohm Resistors

There have been a number of comments over the years about IOOK resistors which have been found to be either open circuit or very high in value. See issue 69 for GGL5 comments on this.

I received this 940 for repair with the comment that it was 'dead' and really was thinking of a valve problem when I got it onto the bench.

Not so! It soon became obvious that the problem was in the AVC circuitry and a quick check of resistors and condensers showed that the feed resistor in the AVG delay line was reading a steady 460 Kilohms, strange when it was clearly marked Brown-Black-Yellow for 100 Kilohms. A new modern variety was fitted and the job was done.

Out of curiosity the circuit parameters were checked, volts across this component and current through it showed that it was well within the power dissipation for the original resistor, so WHY?

Any resistor which overheats due to excessive dissipation can be expected to have a shortened life and many would go open-circuit but why then do these resistors go open-circuit or high in value when they are operated within their design parameters?

We must not complain though as both the resistors in question and all other components are nowadays operating well beyond their originally designed life span.

On this subject think of those toggle switches. How many times have they been 'toggled'? Certainly far more than the manufacturer ever expected them to experience. I seem to recall figures of a half million 'operations' as being the designed life for switches of the fifties.

More Whiskers

That this problem is not just one for the very old PNP trannies is given in recent findings that the later AF series also suffers from this leakage problem.

A report that broadcast sets using AF127 transistors can be revived by chopping the fourth leg, the can screen connection seems to echo our common cure for the problem with deaf EB and EC series sets.

First Slide Rule Dial ?

This is something which we shall no doubt have settled once and for all by the appearance of the new QRG however two recent letters have differing opinions. Sam's tale is that he bought a 670A a year before the 840A came onto the market whilst in his detailed letter Ian believes that his 840A pre-dates the appearance of the 670A, let us leave it all to Graeme's new QRG to settle.

(Note from Graeme: to save you all the trouble of looking in your new 'QRG' I'll tell you now that they are both listed as 1954!

I'd like to see the serial numbers of both these sets before venturing an opinion. Some Eddystone dates are notoriously difficult to pin down. Various Company references often differ. The company's Blue Print (BP) Register doesn't list the circuit diagram of either set!

My earliest advert for the 670A is in the Merchant Navy News for May 1955. In my book that means they were building them to stockpile in 1954.

The 840A was mentioned in Practical Wireless for October 1955. How long had they been making them by then? Come on, chaps, let's have your earliest adverts for both these sets.)

Paralled Heater Chains ?



Eddystone's original Seafarers' Cabin Set Model 670 of 1948

I can well recall the first time I worked on one of these sets, the original 670 with the half-moon dial. My surprise when I checked out the circuitry of the heater chain was such that I sent off to Eddystone for the official instruction booklet and circuit. What happens when one valve in the series-parallel chain goes kaput ? Well you need to be an Olympic athlete to get there quickly enough to prevent another one going in the opposite side of the chain.

Charles had a problem with his 670 and whilst just one valve had gone out with an open-circuit heater he had to replace three valves which had developed heater-kathode shorts whilst being over-run in the few minutes that Charles had been wondering why the set was not operating.

Despite all this the 670 is now back on the air and giving a good performance. He likes especially the AF output from a push-pull UL41 stage, a design which he thinks should have been used more often in Eddystone sets. He also notes that these AC/DC sets are still good runners when the mains voltage drops below 180, as it used to do in Ethiopia on a daily basis. His 670 continued to burble away happily.

The S.740

There are not too many of this set around apparently, yet occasionally we do hear from an EUGer who has one. Derek has owned this one for more than twenty years and has been very happy with it. He recently bought a modern solid-state Trio R600 and after the first novelty had worn off he found himself going back to the 740.

His reason is that for one of advanced years the tiny controls and cramped front panel of the R.600 are not suited to arthritic fingers and thumbs. The well spaced layout of his 740 does suit him though and so he has invested in another set of new valves, he reckons this will be the last set whilst the 740 is in his care as the last time he re-valved it was in 1984 and there appears to be no difference in performance now with the new valves. He can still winkle out the odd rare amateur station and many QRP South American broadcasters. Used with a rather random length 'Marconi-type' iErial which is never more than 15 feet above ground. He does have an ON/OFF switch in the receiver earth lead as he sometimes finds he can get improved signal strength with the outside earth rod diconnected, depends upon the frequency band in use, he says. I would guess that an ATU would help here.

Frequency Drift on a 680

I have had this myself and so can appreciate why Sam had so much trouble locating the problem. I seem to recall that this particular fault also produced hum when tuned to a carrier alone or with modulation.

Having spent many hours checking frequency determining components he decided to go back to where he ought to have begun his quest. The regulated HT supply for this set comes

from the usual VR150/30 regulator valve and it supplies the oscillator hence any change in this supply WILL cause frequency drift. What was found was that R63 was changing value by several thousand ohms as the set warmed up. When cold this read just on 4900 ohms, not bad for a 4700 ohms resistor of low tolerance. The story after some half hour of use was different as the same resistor now measured in at almost 6000 ohms. Since this is part of a potential divider, with R64 a 15 Kilohms across the VR150/30 the change was enough to cause the drift. The original had been a 1 watt and a modern 1 watt was about the same size, so this went in. The problem had gone away. Although Sam does not mention a hum problem whilst he had the drift it can happen, depending I guess on just how high in value the faulty resistor had gone, looking at the circuit the heater of the Noise Limiter valve (6AL5 - V13) is fed solely from the winding on the mains transfo but the centre tap of this winding is taken to the mid-point of R66 and R67 a 100K and a 6.8K fed from the VR150/30.

Marconi Badged 820

The Marconi badged 820 has been repaired and has been on extended soak-test, well really I just like listening to it.

Come the other morning when I switched on at 0900 and got total silence. It had been fine when turned off the previous evening. So back it comes to the bench, pushing aside the half dismantled B40 with Russian panel and scale markings.

Soon enough I found that the EZ40 had an open-circuit heater, it looked to be an oldie so I just plopped in another and back came my favourite music station. The question arises did it go

pop when I turned the power off the night before or when I turned the power on the next morning? Or did it decide sometime during the night that enough was enough?

Crystal Calibrator Units

In this case on the 888 receiver, but also applicable to the similar units on any Eddystone model which has a calibrator.

As the unit is fitted in the receiver, atop the main tuning condenser, you will see two adjustment access holes in the top of the calibrator unit.

If, as does happen, you need to retrim this using one of the Standard Frequency Signals such as WWV or a good laboratory frequency standard then please do note that the right hand hole when looking from the back of the chassis is the frequency adjustment trimmer condenser. NOT THE LEFT HAND HOLE which allows access to a slug tuned inductance.

The left hand hole is to allow for adjustment of the level of the pips so that the strength may be set approximately equal across the full range of the receiver. If the 6AM6 valve is ever replaced it MAY be necessary to trim this slug to obtain good strength pips on Range 1, the higher frequency end particularly.

Avo 40 versus Avo 8

I have had a number of letters commenting upon items in previous newsletters about the effect of meter internal resistance on the readings obtained. If proof of my thesis is needed then the fact that Eddystone and many other manufacturers always published two lists of voltages, one voltage list for low resistance meters such as the Avo40 and another list for readings taken with an Avo8.

The disparity between these readings is particularly high when you are checking out a high-impedance part of the circuit. I always use, and quote from, the voltage figures shown for the very high impedance anode circuit of the triode voltage amplifier stage preceding the AF output stage.

Here we have a 6AT6 triode with an anode load of 270 Kilohm. Using the Avo40 with a resistance of 1000 ohms per volt we get an anode voltage of just 43 volts. However using the Avo8 we get a very different story, we find a reading of 125 volts ! As they say proof of the pudding.

Metric Martyrs

Jim has written to me asking whether we in the hobby are likely to become metric martyrs with the continued inroads being made by the EEC into our UK culture

We abandoned using metres in favour of kilocycles and then (for some of us) for kilohertz. Should we not be going back to using metres again to avoid prosecution by the metric inspectors ? Some how he says 208 metres never did get converted to 1440 Kilocycles but all of the BBC stations became Kilocycles instead of metres. Any comments ?

Modulation Hum on a 740

On later models this problem was recognised and cured by the simple expedient of wiring a 500 puffs condenser across the heater of the ECH42 in V2 position. This is the frequency changer valve and it does in retrospect seem a likely candidate for such a problem.

That early production sets did not have this fitted was brought home to me recently when I obtained a very neat 740 from a silent key sale. It turned out

that this was a 'one-owner' set and I was getting the original paperwork including a Webbs receipt. It would seem that the lack of the mod had never caused any problems and yet I decided to fit one, did I do right ? I believe so.

AC/DC & Safety

A letter from Bill, GMØKMG, re those insulating washers on his 870A receiver and queries re the similar 670A and 840A.

I suppose that we need to go back to basics for the reason behind these washers as used on those AC/DC Eddystone models.

On a set without an isolating mains transformer the chassis will normally be at Mains Neutral potential and the HI and LI will be derived from the Mains Live by the use of rectifiers and in the case of the LI by a series dropper resistor. Get the mains connections reversed as so often seems to happen and you get a chassis which is at Mains Live potential !!! A 'potentially' lethal condition since touching the chassis and anything connected to it would give you a real 'Belt'. Anything connected to it means the metal case if there are no insulating washers to isolate the 'innards' from the case.

It can't happen ? well if you worked in the domestic repairs business you would know very well that this happens on an almost daily basis. I had a very nice AC/DC domestic radio for repair last week and the mains lead had at some time been replaced by a twin mains lead with brown and blue wires.

Okay, in the set the brown wire went to the live side of the circuit and the blue to the chassis side, but in the mains plug the blue went to the live pin and the brown to the neutral pin. The

only thing separating the user from the mains live was a cardboard back and four plastic screws.

The Eddystone Instruction manual says that the insulation measurement between the chassis and the outer metal case ought to be at least 100 Megohms

Look at the circuit of an AC/DC Eddystone. The circuit components which are at chassis (RF earth) potential are coupled to the case, and the outside earth connection, via two condensers. C2 is between the bottom end of the RF coil primaries (A2) and via the link to the 'external' earth socket. C3 is between the actual chassis and the same side of the earth socket. Without any external earth connection the chassis is insulated from the case by those plastic washers and the case is left 'floating'. Plugging in an external earth the two connections on this socket are made and both go to earth.

That is why the plastic (polythene) washers are fitted Bill and why you need to fit them if they have been removed, for the sake of safety. RS and Maplin sell suitable nylon washers which wear better than polythene.

Intermittent BFO

With many years under it's belt the BFO on Steve's 840 began to show signs of an intermittent failure to oscillate.

Occasionally it could be re-activated by switching on and off the BFO switch.

Eventually it became necessary to get the set out of it's case and delve into the circuit. It soon became clear that the BFO was not actually ceasing to operate, it was just moving to a much higher frequency when Steve had thought it was stopping. This led

to a check on the leads from the BFO circuit to the BFO tuning condenser. It was found that the wire to the stator side was terminated in a corroded soldered joint. This 'dry' joint was resoldered with a hot iron and a dab of new solder. Several weeks later the 840 is still okay on BFO, no intermittent malfunctions at all.

Secondary Transfo Fuse

In Gerry's 888 the fuse in the secondary of the mains transfo has blown twice within the last couple of weeks. The first time he simply replaced it with another of the same value but when this blew after two weeks with only several hours of on—airs use he decided enough was enough and he started to check out just what was causing the problem.

Within a few minutes he found the cause, partly by visual examination and partly from judicious use of his old AVO 40 testmeter. It was found that there was internal arcing within the glass of the 5Z4G valve whenever the audio gain was turned up high, i.e whenever a heavy load was drawn by the receiver output stage.

A new 5Z4 was procured and the whole routine was gone through again. No arcing over even with the audio turned up full. After a whole night on soak test the test was done again, turning up the volume with the AVO connected whilst watching the 5Z4. The set has been running okay since then and the dud has been marked with a sticky label indicating the fault and has been consigned to the junk box.

Eddystone Headset Sockets

A suggestion from Tom is for a mod which as he says 'will not detract from

the resale value of your cherished Eddystone'.

Most of the valve type sets had provision for high impedance headphones via a jack socket which was resistance and capacity fed from the anode of the AF output valve. Nowadays many of the EUGers use those ubiquitous low impedance type supposedly Hi-Fi phones. This produces a big mismatch between the output circuit and the phones, a mismatch which can affect the quality of the received signal.

The idea put forward by Tom is to leave the RIG network components in situ but to disconnect the phones socket and replace it with a stereo jack socket. This will fit the existing hole in the front panel. The socket has three connections. The 'tip' and 'ring' connections are connected together and taken to the 'live' side of the AF output transfo via the break contacts on the stereo socket whilst the 'sleeve' connection goes to the other side of the AF output transfo.

This will give you the same phones facilities but more suited to the much lower impedance of your phones.

Tom goes on to say that whilst you are at it you can incorporate some kind of AF filter network since those Hi-Fi phones were never designed for Communication use. Besides your wanted signal they will reproduce every low and high frequency 'hiss, crackle & pop' which appears on top of your wanted signal.

He has not done this since all of his audio signals from which ever receiver happens to be in use go through a graphic equaliser set to reproduce speech range signals and to greatly attenuate anything above and below. He uses an eight-band equaliser rescued from a car which operates from the station 12 volts supply. This

has two channels for stereo and Tom has wired them in series to provide twice the indicated attenuation. He has the 10000/s range at maximum gain (minimum attenuation). The 3000/s band is set to the centre point, as is the 30000/s band pot. All other band pots are set to minimum gain (maximum attenuation). Tom says that on SSB and AM the results are quite spectacular and that since these units are often binned when a car is sold they are going cheap at rallies.

640 BFO Mod

Having bought a 640 at the NEC this year Dave has struggled with the rather coarse tuning of the BFO on this early Post War set.



S.640 Stratton's first post-war hit

Looking at the schematic he decided that a suitable mod to reduce the BFO frequency swing could be accomplished without recourse to any damaging work on the set. It was very simple to fit a series type of trimmer of the Strattons/Philips 'beehive type'. The mod was simple just unsolder the wire going to the stator of the BFO tuning condenser. To the stator he then soldered the long bottom leg of the beehive trimmer, the wire which he had removed was now soldered to the tag on the side of the trimmer. Setting the trimmer for about mid-point in its adjustment he tried out the 640. With a trimmer of some 30 puffs he now has a much reduced tuning range making SSB signals easier to tune in. The midpoint setting gives him about 15

puffs in series with the original tuning condenser and he found that a mere touch was needed to the BFO slug to put it back on to it's null point.

Eddystone Diecast Boxes

My mention of the two old boxes which I had found brought a letter from the Hammond Company who now hold the licence to manufacture these diecast items with the Lighthouse logo.

It came too late for me as both of my boxes have been re-used for shack use but if anybody is hoarding any such old diecast boxes with the logo then Hammond would be very interested in acquiring them for their 'museum'.

The 670C

The fault on this model appeared to affect just the Long Wave band, Range 6. It was as dead as the proverbial dodo.

Performance on all other ranges appeared to be as normal but turning the range switch to this one range produced a deadly silence.



S.670C last of the cabin sets

It appeared certain that this was a range switch fault and so first investigations centered on this component. All checks for continuity of the switch contacts seemed okay and so the coils in the RF and Oscillator stages were next. The Range 6 osc

coil proved to read infinity and very a close look showed that the outer end of the primary winding was broken off. How come ? The set had been working fine, cricket on Long Wave was often listened to, the set had not been moved from its working position for several years, yet there was the broken and frayed end.

It was a case of re-tinning and re-terminating the thin frail wire and then testing the set, all okay once more and a mystery remains, how and why did it break ? or was it corrosion ?

Festoon Lamps

Sorry, lamps not bulbs ! You get bulbs at the garden centre. Anyway, to the point. Alec reminds us that those festoon lamps which are in use in models such as the 770 for scale lighting are still available. They are used in many cars and so can be found at Auto spares emporiums. Yes both twelve volts and six volts types are available. The six volt type was used on old Beetles etc.

Students in a Phone Box ?

Well not quite, my problem is similar though. I shall be moving from this lush and lovely QTH to another QTH up in Cambridgeshire soon, I hope. And my problem is going to be this. How many Eddystones plus assorted gear can I fit into a Volvo 460 Saloon ? I shall let you know when the move takes place but I am going for a round dozen sets

I ought to be able to get to many more Rallies in the coming months and hope to meet more EUGers,

BCNU. Ted.

**Ted's MailBox c/o Jim Murphy,
63, Wrose Road, Bradford
BD2 1LN**

Here now are extracts from the letters of retired Bath-Tubber, Geoff Woodburn, which Ted mentioned in MailBox. This was written to Ted ten years ago, shortly before Geoff died of heart failure whilst watching his favourite movie stars, Laurel & Hardy on television, at his home in Redditch, Worcestershire:

"Regarding the equipment supplied to the Met Police, this was indeed an early version of the S215 Transmitter but the receiver was very large* being built on a flat plate about 18" x 24" and fairly heavy when in its cabinet. I remember this receiver very well as I was working on assembly and wiring on them on Sunday 3rd of September 1939 when War was declared as due to urgency of delivery we were working all hours. (**note from Graeme: the receiver itself was not very large, but mounted on the plate with it were both the psu and control equipment.*)

The 770M receivers were produced only as prototypes as the range covered went to 250 MHz but due to problems with the gang and frame resonating below 250 MHz the range was reduced to 165MHz and renumbered 770R and the 770U was developed to continue beyond 165Mhz. The 770S which you refer to in the No 10 Newsletter was one of my designs and I had an interesting time developing the cavity oscillator and the butterfly RF tuner, sorry about the weight!

One omission from your list of equipment was the S700, this was

designed for International Marine Radio and 220 were made and called the IMR54 and carried the IMR badge.

It was Post Office approved for use as a main ships receiver and weighed about a cwt in its cabinet as I remember only too well having tested and aligned the whole order in 1952/3. Thought was given to producing an Eddystone version but only one was made, in appearance it resembled an Eddystone receiver but very large having a cast panel about 30ins long with full length scale and a cast coilbox 18ins x 13ins. It covered 10khz to 30Mhz and had dual IF, BFO and AGC units of 465khz and 110kHz all switched by cams and levers.

The equipment used on D-Day was the 440/450 7/10 Watt transmitter and receiver, I have photocopied a copy of the manual for this equipment, I tested quite a number of the Transmitters and other bits of the system. The other equipment landed on the beach was a S215 100-Watt VHF Transmitter, I have not yet found a photo of this but I enclose a circuit diagram.

I know this information to be correct as A.C.Edwards who was Sales Manager and later Sales Director and served in the Fleet Air Arm during the war years told me about it.

Regarding the All World 8 I was able to find a layout blueprint in the old files at the company this morning which contains a component list and I enclose a copy. The LPC I mentioned was a version of the AW8 which was made for the Admiralty and had a BFO unit for CW reception, it also went under the Admiralty type No. RI01*, I enclose a circuit of the modifications."

(note from Graeme: we now know, of course, that the Stratton R101 was a pre-war Royal Signals army set – see this month's 'POO's Ponderings.*)**

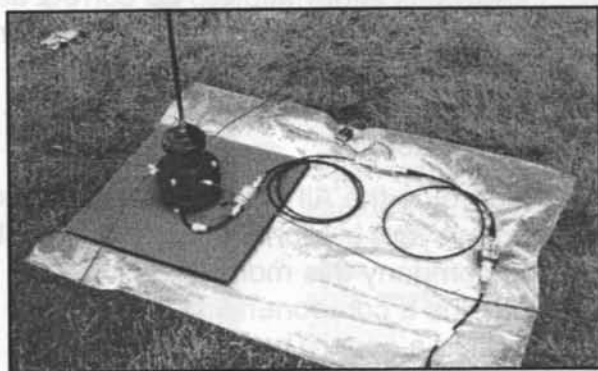
Where, Oh Where - Getting There . . .

Jack Read reports further on his search for signals

It is always a mistake to consult more than one expert! Readers will recall that in Issue No. 71 I put out a cry for help over the computer hash problem which was blanking out most of my short wave reception. There was a huge response of helpful information, but I was left unclear whether the problem lay with the equipment or the technique of the user, or both.

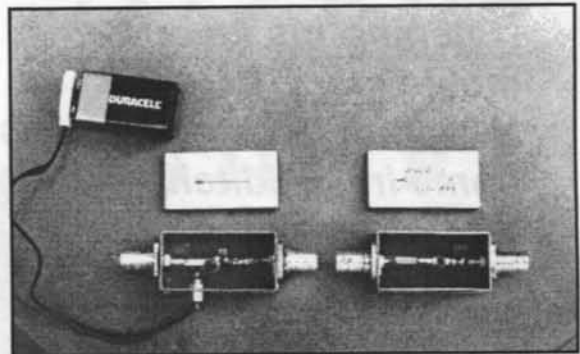
Doubts were expressed about the matching of my ground plane vertical antenna system to the long co-ax feeder to the shack. I believed the antenna had a matching transformer in its base: Graeme thought it was a current transformer. Then a local amateur chipped in and said yes, it was a matching unit.

Finally in one of my rare moments of inspiration I called the guy from whom I had bought it. He, being both a licenced amateur and also an examiner, explained very slowly and in words of one syllable that the Army VI-IF antenna system I had bought from him was matched, wait for it, to the Army VHF band (30-48Mhz). He probably thought it was a nuisance call from the village idiot!



Anyway, by now my radio astronomy friend had come around with an active antenna unit he had built me based on the US Mini-Circuits MAR-3 monolithic broadband amplifier chip wired into a 50_ transmission line, and with the provision for remote down cable powering. See photos

and attached schematic. This is very broad band DC to 2GHz with bags of gain (12dB) as you would expect with his background. The third box is a Hatfield 50/75_ matching transformer feeding the 75_ coax up to the shack.



For the first time in a long time the S-meter needle was over to the right and AGC action was suppressing the hash. But there was still hash buried in the background. Disappointing. Also with that much oomph cross-modulation was evident (Humphrey Lyttelton fans will recognise 'One Song to the Tune of Another'), particularly on VHF and causing heterodyning on SSB, which is rather further than my theoretical grasp extends. So a Peter Lankshear unity gain device has been put into manufacture.

As the philosopher said, it is funny how the simplest of faults can take the longest to find. Up to this point both amplifier and power source had sat alongside the antenna as in the photo, but to be able to switch the system on and off whilst taking measurements the power supply was moved up to the receiver and.

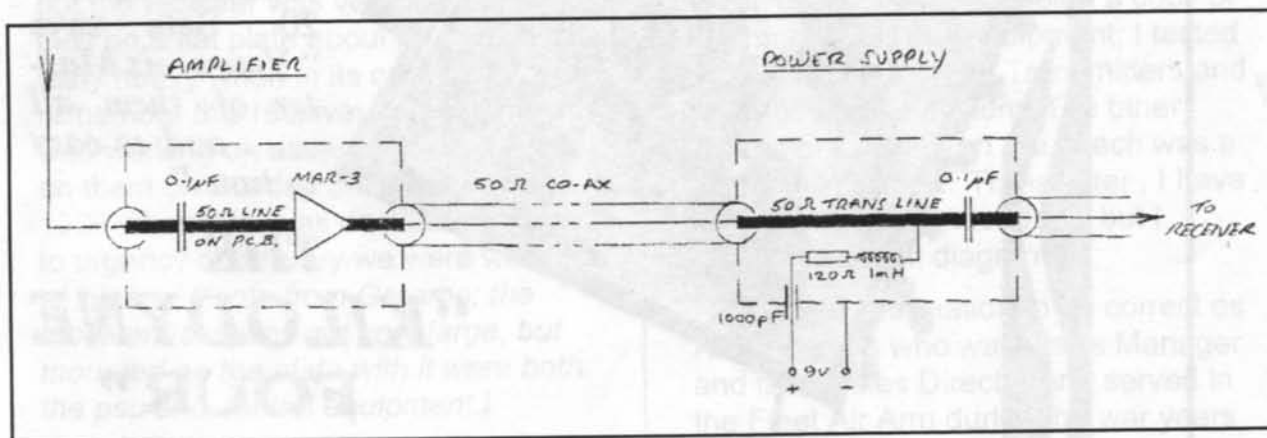
The result was zilch: the amplifier would not power up. A multimeter check revealed that the long co-ax was not DC conductive. Section by section tests exposed that at the very last BNC connector before the receiver the outer braid was not connected: a tiny speck of solder holding off the contact from

seating. So all along the outer braid had been floating and had not been earthed at all. I had thus effectively been taking the equivalent of a random wire from the vertical along the ground up to the house, through the building, past the computer and finally plugged into the receiver. No wonder I had a problem! Remaking the joint dropped the noise many dBs, and for the first time the system started to work.

The amplifier unit will now be rebuilt with a MAV-1 1 chip which has a much higher 1dB compression point and will thus give less cross-modulation, and if necessary the vertical shortened to reduce the drive. This unit will go with the 50_ military VHF base unit, whilst for HF a plain high impedance vertical will be directly coupled to Peter's unity gain matching device. The results will be reported in the next issue.

Finally, ferrites, beloved of the pundits. I have a collection of ferrite sleeves about an inch long by three quarters diameter which fit snugly onto my UR70 co-ax, and which the text book tells me should give 6dB attenuation of noise on the outside of the cable at 25MHz and 9dB at 100MHz. Fitting them however seems to produce little discernible difference. Two questions, with which I shall leave you: Most commentators discuss using ferrite sleeves to choke off external RF at the antenna end of the cable, whilst I would have put them directly before the receiver. Secondly, do not the ferrites, which are quoted as having impedances of some hundreds of ohms, distort the local characteristic impedance of the co-ax thereby introducing another set of problems, or is the effect truly confined to the outside? Any answers?

Jack Read.



(Notes from Graeme: in answer to question one (above), ferrite sleeve at the aerial end of a matched (transmitter) co-axial feeder is a pseudo balun, to stop the RF coming back into the shack and causing mischief. A ferrite sleeve placed at the receiver end of the feeder (usually a TV set) is to block signals picked up on the outer braid from a nearby transmitter and reduce 'swamp' interference. In answer to 'question two': neither will affect a matched aerial in receive mode, nor affect the characteristic ('internal') impedance of properly matched co-ax. They will NOT reduce time-base/computer hash, etc. BUT: if used on the TV's aerial co-ax at the set end, and also on the set's (or computer's) mains cable, they may reduce the radiation of rubbish (As will the use of a ferrite ring, with the cables wound through them.) But I'm no engineer - would any other members care to comment?)

In 1931 the Eddystone Kilodyne Four home-construction kit-set arrived!

HEAR the WORLD'S
EVENTS

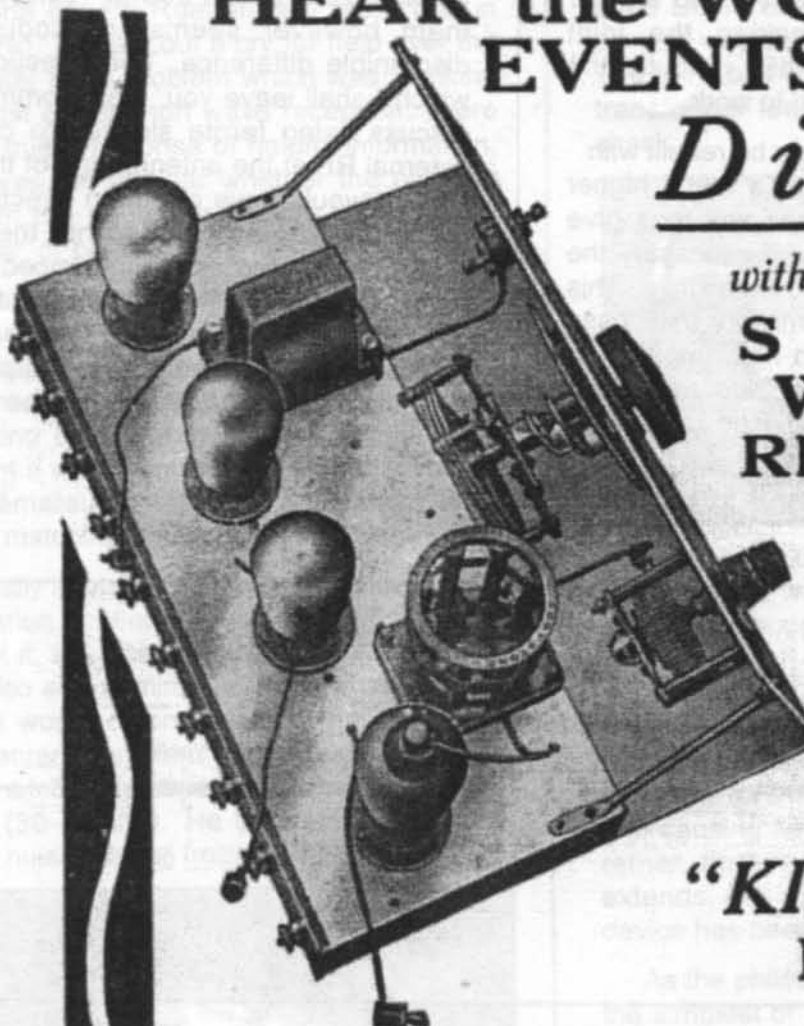
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**THE
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The "Kilodyne Four" is a powerful ultra Short-wave Receiver capable of first-class loud-speaker results. It has a wave range of 14-85 metres, but extra coils up to 2,000 metres are available. The set is built on a metal chassis, and tuning is remarkably easy. Reaction is smooth and there are no hand-capacity effects.

For the convenience of Amateurs, components are obtainable individually.

Total Cost of Parts £6 17 6

Blueprint, List of parts and full details, 1/6 post free.

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EDDYSTONE KILODYNE FOUR (KIT SET)

The modern short-wave set is a highly specialised product. It has, we suggest, two distinct functions. One is to afford amusement to those jaded with the offerings of the stations on the normal broadcast band. Then there is the more important function of keeping overseas listeners in touch with the Old Country.

The makers of Eddystone sets have established themselves as specialists in short-wave sets, and the Kilodyne Four now reported upon is the latest addition to a remarkable range.

Four Valve Kit

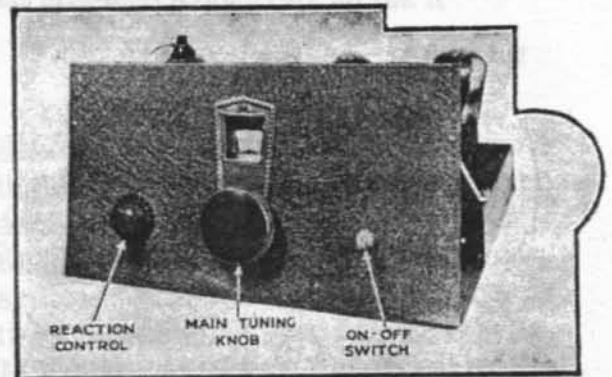
Here we have a simple-to-make four-valve kit, specially suitable for wavelengths between 12.5 metres and 85 metres. As the coils are interchangeable it has been found practicable to include a coil that will tune over the normal broadcast wavelengths from 250 to 500 metres.

The advantage of this adaptability is obvious. There are many distant countries where a set capable of tuning the ultra-short waves and the medium waves is essential to the full enjoyment of radio – countries where the only local station is perhaps 500 miles away, but which are quite within range of the more penetrative ultra-short wave signals from England, America and Holland.

The kilodyne Four is a very reasonably priced kit when we take into consideration its excellent performance. We were supplied with a ready-assembled set, but we have carefully examined the constructional charts and we find nothing likely to prevent even the novice from making a good job of the assembly work and wiring.

The blueprints of the layout and the circuit are very clearly planned.

The circuit is a reliable four-valve arrangement, comprising a screen-grid high-frequency valve coupled to the detector by means of a special high-frequency transformer. Following the detector are two stages of low-frequency amplification, the first resistance-capacity coupled and the second, a pentode, transformer coupled. Altogether a powerful combination, likely to yield strong signals in all parts of the world.

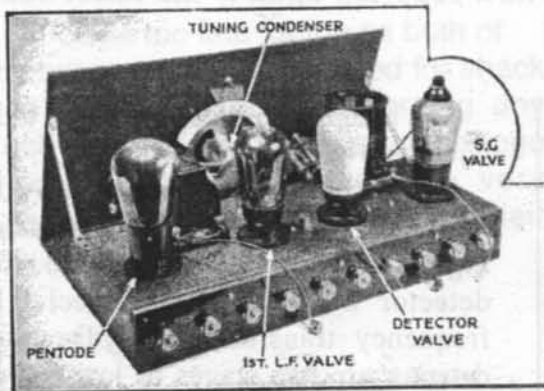


AN EFFICIENT SHORT-WAVER
The Eddystone Kilodyne Four is a short-wave kit set for home construction. It is the only thing of its kind on the market.



The aerial tuning comprises an aperiodic high-frequency transformer. The primary of this is untuned and the secondary is tuned with a .00016 – microfarad variable condenser of low loss.

During tests we found the tuning and reaction controls smooth and precise in action – particularly the tuning, which is greatly aided by the provision of a really large control knob working on a friction drive.



A SET WITH INTERCHANGEABLE COILS

Three coils are used in this Eddystone set to cover wavelengths of 12.5 to 85 metres.

It has an aperiodic screen-grid stage

Coil Units

The blue-spot coil tunes from 12.5 to 27.8 metres, the yellow-spot coil from 24.5 to 52 metres, the red-spot coil from 40 to 85 metres, and the green-spot coil from 250 to 500 metres.

We found the yellow-spot coil most productive of results, amateur telephony signals on 45 metres providing us with plenty of diversion. At the time of the

Between the aerial and earth. All the tests the American stations appeared to be below their usual strength, but on the Kilodyne we were definitely able to log 2XAD on 31 metres. Many of the Continental short-wave stations were also tuned in at full loud-speaker strength, such as Rome and Zeesen.

The tuning and reaction operations were noticeably free from the trickiness all too often inevitably associated with short waves.

Medium Waves

On the medium-wave coil we got the two London stations quite clear of each other. Naturally, the selectivity was not of a high order in view of the aperiodic tuning, but we were surprised at the number of foreign stations that could be tuned in without interference. The low-loss transformer certainly justified itself.

IN A NUTSHELL

MAKER : Stratton & Co Ltd.

PRICE : £6 17s 6d for the complete set of parts without valves.

VALVE COMBINATION : High frequency amplifier, detector, resistance-capacity low-frequency amplifier, and pentode output.

POWER SUPPLY : Batteries, not self-contained.

POWER CONSUMPTION : Anode current, 14 milliamperes. Low-tension current, .6 ampere.

TYPE : Metal chassis kit, specially designed for short-wave reception.

FINISH : Open chassis, with sloping front.



THE EDDYSTONE 740C

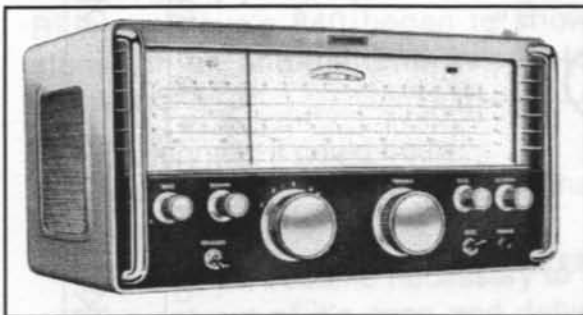
By Peter Beardsmore G4IXY

Now THAT has your attention! The astute among our readers will say there's no such thing. As most will know, the Models 740 and 840 started life at roughly the same time and both ended production in 1954.

The Model 840 was essentially the same circuit as the earlier 740 except that it was designed for universal supplies (AC or DC, 110 or 230v) and followed the then current practice in domestic T/V and radio of omitting the mains transformer and putting all the valve heaters in series using a large mains dropper resistor.

This meant that the chassis was directly connected to the mains supply (preferably neutral) and great lengths (for those days) had to be taken to insulate the chassis from the cabinet and prevent access to any live components. Because of uncertainty of their compliance with current regulations, some vintage wireless dealers cut off the mains leads to avoid prosecution and this is how they occasionally turn up. (At least at events down here in the South East.)

Now to proceed with our story. The Eddystone 840 went through a long process of evolution to eventually become the 840C in 1961 - slide-rule dial, later type cabinet, improved front panel - especially regarding the access to the dial and glass through the removable end pieces, more sturdy construction through the use of a back chassis piece, albeit in SRBP or similar plastic and rigid end plates (one of them holding the speaker) instead of the very flimsy strips of the 740.



Had the 740 been given this treatment it would have been a very desirable receiver and now I think you'll know where I'm leading. Now I'm not suggesting that anyone takes a pristine 840C and alters it, but I bought a rough 840C from a stall at the Alexander Palace Event early last year - "it was the club receiver; has a slight fault . . ."

Upon investigation the receiver had 8 or 10 separate faults including a number of resistors that had gone up into the megohm range and a badly damaged tuning capacitor with unequal spacing between the fixed and moving vanes that shorted together when 50% closed or more. The capacitor had no adjustment on the bearing, it was simply a pressing, so the vanes had to be bent slightly one way to achieve clearance.

The BFO also didn't work, and after measuring all the relevant points around the valve and changing resistors and capacitors, etc., the only course left was to unsolder the coil and prise open the screening can, where it was found that a silver-mica capacitor was digging into the coil. Bending it away cured the fault.

The last fault to be tackled was the thermistor which would only conduct after being heated with a soldering iron. A thermistor was borrowed and temporarily put in, which got the set working, whereupon it was noted that during warm-up the filament of the Magic-eye glowed almost white hot for 2-3 seconds as the heaters all settled down to their working (hot) resistance values.

Partly due to this and the total inability to find a thermistor through any source it was decided to give the 840C a set of 6.3 volt heater valves and a 'proper' mains psu with a transformer - and at this point I suggest that the purists stop reading - the rest carry on, because it has turned out to be the best thing that ever happened to it and has made a magnificent receiver.

The job is made easy, as a check of the wiring will show that it is unnecessary to delve into the coil pack or anywhere, really, as most of the heater leads are brought out of the valve bases in pairs and end up on tag strips and very efficient cable colour-coding makes it very easy to see which lead is which. (As a further check remove the valves and check continuity with a meter.)

Draw a wiring diagram showing colours of all the connections to the existing power supply before disconnecting them and then remove the psu chassis.

A new chassis was made which is a mirror-image of the chassis at the other end (IF-AF chassis) and can be made to bolt straight onto the end plate - polystyrene and fibre spacers are no longer necessary as all the chassis segments will be at earth potential.

The next two stages are entirely optional and can be omitted, but I feel it made a better job. The speaker aperture was cut to make the smallest square hole that would fit over the existing round hole and the corners were radiused to match the opposite end of the chassis. The next optional procedure was to remove the existing plastic rear chassis piece and cut a new one in aluminium of the same thickness. (just under 1/8"). The plastic one was clamped to the new one and all the necessary holes drilled through. If this is carefully done it will fit straight back with no filing of holes.

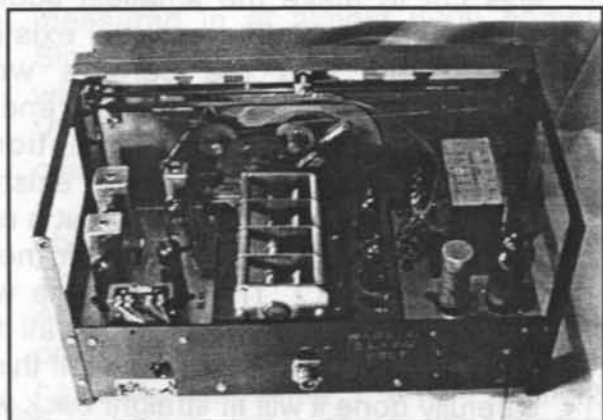
You may wish to remove the isolating capacitors where the aerial sockets were connected as these were only there because of the live chassis, and also remove the two static discharge resistors which were only there because of the capacitors. Access is gained through the removable bottom plate on the coil pack and the large triangular hole which is exposed when the chassis rear member is removed.

I took this opportunity to fit the aerial and speaker sockets of my choice rather than the wander plug type originally fitted.

The panel was sprayed (car aerosol) and the paint cleared away around the screw-holes to make electrical contact with the other parts of the set, and then the whole thing bolted together. Don't forget to put washers of the correct

thickness where the rear chassis bolts to the rear side of the coil pack.

The psu needs a mains transformer that will give you 6.3 volts at a couple of amps and an HT of between 100 and 150 volts. Note that all the cathode, anode and screen resistors in the 840C are selected for an HT of 135 volts, not the more common 250-300 volts of other sets



An alternative would be to use two small transformers - one giving 6.3 volts at 2 amps; (Maplin and RS do them for about £5 each), and another giving 110-120 volts at about 50-60 mA - a shaver isolation transformer for 110 volt shavers does nicely - but note, NOT an auto-transformer for obvious reasons.

The existing electrolytic and choke can be re-used, but unless you have a 5 volt winding on your transformer you will have to use either a 6X5 rectifier valve (Note from Graeme: or use an EZ41 on the same base as the UY41) or silicon diodes. As my transformer was 150-0-150 I chose to use a valve and a resistor of about 400 ohms to lose the extra volts.

One further addition is a 200 ohms resistor in the magic-eye filament lead (which is rated at 1.5 volts at 25mA). These modifications make it possible to use the three apertures provided in the

dial plate to fit three bulb-holders and thereby illuminate the dial.

Now that the chassis is at earth potential and there are no high voltages exposed above the chassis it was decided to cut a hole in the cabinet and fit a hinged lid which means that valves and dial lamps are easily accessible.

One final modification which I left to the last - if you've got this far you're obviously not too squeamish - was to drill a hole in the panel, symmetrical I might add, and fit a chrome toggle switch for the mains on/off as on all the more expensive Eddystone models.

The set looks good, works brilliantly and all the heaters come on evenly without overheating at initial switch-on. (Don't forget to change all the 'U' valves for 'E' valves i.e. UAF42 becomes EAF42, etc.) One final thought - if you didn't want to get so involved - a simpler modification is to fit a transformer(s) giving about 100 volts for the H.T. and 12.6 volts LT. All the existing valves are 12.6 volts except the UCH42 which is 14 volts and won't notice the difference, and the UL41 which will have to be changed for an EL41 and series resistor calculated by Ohm's Law. (The heaters will still have to be reconnected in parallel).

When you have completed your work PLEASE paint on the chassis the NEW valve numbers for future owners and also paint on a warning that the set will only accept AC supplies now. Good luck with your improvements and I'm happy to talk to anyone contemplating them.

Peter Beardsmore G4IXY

2, Spencer Place, Sandridge,
St. Albans, Herts, AL4 9DW

Eddystone Receiver Repairs for Beginners – Part 5 'Resistors'

By Peter Lankshear, Engineer, NZBC, (Retired)

Resistors are second only to capacitors as the most numerous components in Eddystone receivers, and are a common cause of trouble. The majority were what are commonly called Carbon Composition Resistors. Depending on the receiver model, there may also be a few Wire Wound Resistors, and we will deal with these first.

HIGH WATTAGE RESISTORS

Wirewound resistors were used by Strattons where a dissipation upwards of one watt was required and as their name suggests, the element is wound with a high resistance alloy wire on a ceramic former and usually coated with a vitreous protective layer.

In operation, they can generate a lot of heat, - after all, elements of domestic electric heaters are only high wattage resistors connected across the mains. In some instances, a narrow strip of the coating is omitted to enable adjustments to be made by repositioning a circular metal clamp or tap.

This can be a source of trouble as continuous heating oxidises the tap, creating a poor connection. Be warned too that, especially in high value resistors, the wire is extremely fine and very easily damaged, and taps are best left alone.

Well made fixed w.w. resistors are reliable and do not change in value, but they can occasionally become open circuited. A tip: In their larger receivers, Eddystone used a 2.7kohm 5 or 6 watt wire wound resistor to feed the VR150 voltage regulator. If the receiver is dead and

the voltage regulator is not glowing, check that this resistor is not open.

CARBON RESISTORS IN GREAT VARIETY

In Eddystone receivers, most of the fixed resistors were the ubiquitous carbon type. Compared with metals, carbon has a high specific resistance, but even so, a pure carbon resistor would have a very low resistance.

By using a non-conductor to separate individual carbon particles, the resistance of a carbon rod can be made any desired value. Practical resistors were commonly made by combining, under pressure, fine carbon and a suitable binding agent such as a thermosetting plastic.

Other materials used were clay or ground glass. Some resistors commonly used in Eddystone receivers were made by enclosing the elements in ceramic tubes or in Bakelite mouldings.

A thin layer of carbon was in some cases deposited on a ceramic rod and these can often be recognised by spiral grooves cut in the surface for adjustment of the final value. These carbon film resistors have many of the same characteristics as carbon composition resistors, and this

construction method is one still used for many modern small resistors. Not surprisingly, modern resistors are both smaller and more stable than older types.

Resistors come in a range of sizes, with $\frac{1}{2}$ watt and 1 watt most frequently used by Strattons. As can be seen from the illustration, physical size is not a good guide to a resistor's rating, and modern types are considerably smaller than those used in Eddystone receivers.

Carbon resistors carrying current gradually alter in value with use and time, but the degree of change is dependant on several factors, including soldering, time, wattage, size and the methods of construction.

One of the problems that manufacturers had 50 years ago was not knowing how the ratings of their resistors would stand up to time, and there was no certainty that accelerated tests could give realistic figures. The overall result was that some makes have proved to be more reliable than others. Generally too the higher valued resistors, especially if operated anywhere near their rated wattage are most likely to change.

RATINGS

The Radiotron Designer's Handbook provides an interesting insight as to the ratings of carbon resistors. The nominal wattage was arrived at by the amount of temperature rise – not as would be expected, the maximum long term power handling ability.

Significantly, the recommendation in the 1950's, when many of our Eddystones were made, was that for long term stability, resistors should be operated at no more than 60% of their maximum rating. A common Eddystone example of a

resistor failure from this rule not being observed has been quoted more than once.

In the Model 940, R44, a $\frac{1}{2}$ watt resistor, is part of a voltage divider biasing the A.G.C. diode, dropping 200 volts in the process.

Using the formula $\text{watts} = E^2 / R = (200 \times 200 / 100,000)$, R44 dissipates 0.4 watts. As 60% of the rated $\frac{1}{2}$ watt is only 0.3 watts, R44 is about 30% overloaded. The problem was exacerbated by the use of what has proved to be a particularly unreliable make of resistor. The remedy of course is to replace it with a 1 watt resistor. It is interesting to note, by the way, that the 940 parts list does not include R44.

This brings us to suitable replacements. A purist restorer would wish to hunt round for an identical type to the original, but if the set was to have much use, this would invite the same trouble again sometime in the future.

Because modern resistors are more reliable and much smaller than the original types, and as there is no harm in replacing a $\frac{1}{2}$ watt with a 1 watt type, it makes sense to use new 1 watt resistors for all replacement work.

CHECKING RESISTORS

Which resistors are most likely to give trouble? Generally those above about 10K carrying more than a few dozen microamperes. Checking the values of resistors *in situ* may provide misleading results.

Often resistors are part of a network that can provide alternative current paths to confuse test instruments, but there are instances where measuring a resistor in circuit is quite satisfactory.

For example, a resistance-coupled audio amplifier anode resistor commonly goes high in value, and the end connected to the anode does not "see" any other resistor.

In many cases, however, it is necessary to disconnect one end of the suspect resistor before measuring it. This is not ideal for obvious reasons, but fortunately there is, for EUGers, an alternative method of assessment.

Eddystone circuits list operating voltages for each stage. If these measure about right, values of associated resistors are likely to be correct.

(Bear in mind though the warnings given in an earlier article about errors introduced by low resistance meters upsetting voltage readings.)

HOW MUCH TOLERANCE.

When measuring resistors it is important to note the tolerance codes on resistors. A gold band indicates a 5% tolerance, a silver band 10% and no band at all means a whopping 20%!

Thus a new 10k 10% resistor can be anywhere between 9k and 11k. Furthermore, initial selection of a batch of resistors would have taken those resistors near to the correct value to have the close tolerance labels.

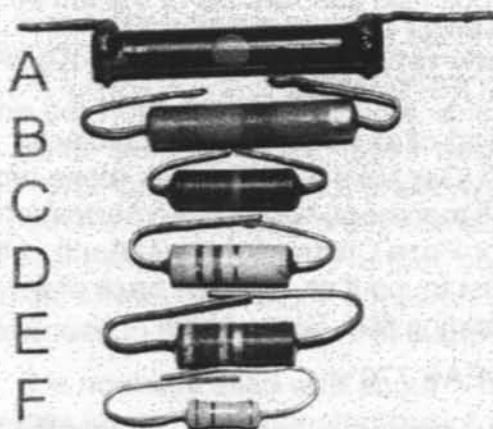
Valve circuits are usually very tolerant of variations in operating conditions and the question will arise as to what extent resistors can vary from their correct value.

Common sense should be used but it is likely that a variation of 15% will not have too much effect on performance.

SOME 1 WATT RESISTOR TYPES

Resistors of type A were in common use from the early 1930's and consist of a carbon composition rod coated with paint that also provided the value code.

A few can be found in early Eddystone models such as the 640. Type B (IRC) also dates from the 1930's and consisted of a resistive element moulded into a Bakelite shell. Both were reasonably reliable when operated well within their ratings, but their large size did not suit the miniature valves used in models following the 640.



Types C and D, ceramic bodied types made by Morgan and Erie, were in use during the 1950's and in the writer's experience were more reliable than the thermoplastic bodied type E used in the 1960's

Finally, type F is a modern 1 watt carbon film type, - considerably smaller than the earlier varieties, and is a suitable replacement type for all $\frac{1}{2}$ and 1 watt resistors used in Eddystone receivers.

(Many thanks, Peter, for a fine exposition on the 'simple' resistor. What shall we see next month? - Graeme)

RADIO RAMBLINGS

Gottings from my Notebook



By
*Graeme
Wormald
G3GGL*

Bewdley 4th August 2002

Greetings, g'day and how are you? I'm writing this on what used to be the August Bank Holiday Weekend when I was a boy (and later!) and still is in Scotland. The weather is hot, cloudy and thundery. I've just been giving the dogs little sandwiches of Valium in cheese slices . . .

SORRY, MIKE

First of all I owe a giant apology to EUGer Mike Gaydon. He, alone among all members, submitted a correct entry for Prize Crossword No.7 (April). I have just found it stuck in the back of a holding file. Sorry, Mike!

DEAF 770's

I've been reminded by Ted that the two later 770's, (770R & 770U Mk II) MUST have the shorting plug on the rear panel fitted. This is the IF Output socket, usually a normal Belling-Lee type TV connector, readily available in the UK. This was a modification to the original Mk I circuit so that a Panadaptor could be fed from it.

But in normal use it MUST be shorted or else heavy negative feedback is applied, reducing the IF gain (and therefore the set's gain) by many S-points. The original one supplied with the set is a solid metal 'special', but a normal domestic TV aerial plug with a shorting

link within is fine. If you have one of these sets DO check up!

If you are overseas and cannot obtain such a connector send me your local cash notes, for purchase, airmail post and packing send £1 (_2) in Europe or £1.50 worldwide (\$US3, etc).

I received a welcome visit from Ted last month and am pleased to hear that he will now be out and about much more than hitherto. Well done, Ted.

G6SL/P SPECIAL EVENT

Many thanks to those of you who sent QSL's and listener reports for the above event on 6/7 July. Chris (who operated the whole show single-handed – see page 3) – is having a special QSL printed (draft below) and they will soon be going out.



Full colour, of course. Conditions were not exactly good; several overseas members have reported that they couldn't hear ANY European stations on

the DX bands (or any other bands for that matter!). Here's the list of members who made contact:

80 metres

G3TXL, Angus Graham, Yelverton.
G3GGL, Graeme Wormald, Bewdley.
M5AAV, Graham Ridgeway, Blackburn
G4HNH/P, Colin Crabb, Kidderminster.
GWØION, Bill Cooke, Newtown.
ON6RL, Guido Roels, Ripipjaberg.
G3UFO, David Oakden, Wirral.
M5DIK, Roger King, Watford.
G3ZJK, Chris Milner, Rugby.
G3XFE, Chris Morgan, Watford.
GW4RYK, Anthony Richards, Montgomery.
G4ORF, Tom Toth, Romsey, Hants.
GØOGN, Richard Hall, Stratford-on-Avon.
G2CVV, Fred Ward, Derby.
MØMAC, Jim McGowan, Romford.



40 Metres:

G4LAG, Dennis Eccles, Cromer.
ON6RL, Guido Roels, Ripipjaberg.
M3URU, Ron Drew, Carlisle.
M5POO, Simon Robinson, Corbridge.
(Using Eddystone Orion 7000 TxRx)
G3MCB/P, Tony Williams, Truro
G3VFO, Terry Hart, Burwash, E.Sussex.
G3JDO, Hugh Martin, Jarrow.
GWØION, Bill Cooke, Newport.
G4MRH, Ron Parker, Hove, E.Sussex.
G4ORF, Tom Toth, Romsey, Hants.

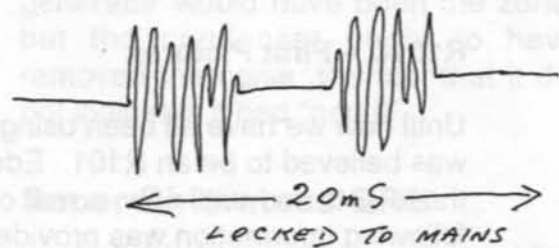
Well done chaps! A nice turnout.

WHAT'S THIS ALL ABOUT?

Now here's a sting in the tail. I had QRN 'white noise' level at S9 here in Bewdley when I worked Chris. Nasty. Then suddenly for about ten seconds it

disappeared; Chris sailed through at S9 plus-plus. Then the noise came back. To cut a long story short it has been with me during the last month for _ of the time. The usual tests with the portable Sony 7600 show it as being everywhere. The fact that it sometimes cuts indicates a man-made origin. The coverage is wideband, 1.8-25 megs, varying with time of day, indicating that it's sky-wave.

On the speaker it's just hash, but putting it on the 'scope it shows a very distinct pattern, which a visiting ham (who understands these things) tells me is digital telemetering! It looks like this:



The 'spikes' are jumping around all the time, but the 'bursts' are locked firmly to the mains 50~.

I've been hearing a lot about power-line digital communication lately, but none of this is coming in on the power line; I've walked around power lines all over the district and it's no stronger there than in open fields away from it. Dead steady everywhere, but stops just HF of the MW band. The top end of it is the MUF, I suspect.

Any bright ideas?

Oh, and the 'First Sunday' net this morning was terrible. Eighty metres 'switched off' ten minutes after we started. Then _ hour later the above QRN came up and blanked everything out for the rest of the day for me.

That's it for now folks, 73 de Graeme. _



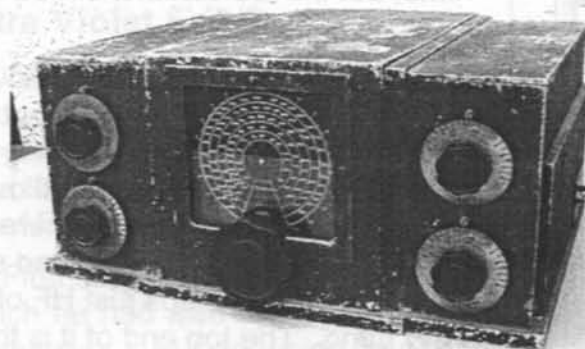
POO'S PONDERINGS

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

For some time now I have had a 'WANTED' note on my Website for information relating to the military R101 set manufactured by Eddystone. Imagine my delight when, after a long 'surfing' session, I should give my e-mail a final check for messages only to be presented with: "I understand you are looking for information on the R101 – I have an R101C". I hastily replied and arranged to visit and take some pictures of the set. Here they are complete with further information on the elusive R101.

R101C – First Pictures

Until now we have all been using the same rather defocused picture of what was believed to be an R101. Eddystone only manufactured around 70 of these sets and until now, a real one has never been uncovered. Much of the following information was provided by Louis Muelstee; author of the famous 'Wireless for the Warrior' books. His research is always very thorough as you will see.



To the left is a three quarter view of the R101C. This one (the only one?) has suffered some deterioration due to salt and condensation but is in fact fully restorable. Due to it's rarity I suggested the owner leaves it 'as is' for the time being. Notice the similarity with the 'All World 8' and 'LPC' models.

Specifications

Purpose: General purpose receiver, principally used with Wireless Sender No. 5.

Modes: AM R/T, MCW and CW

Frequency Coverage: 150Kc/s to 22Mc/s in seven ranges

Range 1 – 9,000 to 22,000Kc/s

Range 2 – 4,500 to 11,000Kc/s

Range 3 – 2,100 to 4,600Kc/s

Range 4 – 1,100 to 2,500Kc/s

Range 5 – 530 to 1,200Kc/s

Range 6 – 375 to 600Kc/s

Range 7 – 150 to 375Kc/s

Intermediate Frequency: 465Kc/s

Audio Output: Low resistance headphones

Performance

Sensitivity: 10uV for 16dB signal to noise ratio in to 50mW output

Selectivity: 22Kc/s at 40dB down

Type of Aerial: Open wire or dipole

Power Supply: AC Mains using Supply Unit Rectifier No. 1 or 2V LT and 135V HT.

Consumption: LT 0.9A HT 16 mA

Size (inches) and weight (lb)

	Height	length	width	weight
Reception Set R101	7.25	15	16	28.5
Coil unit (each)	4.25	2.5	7	1.25

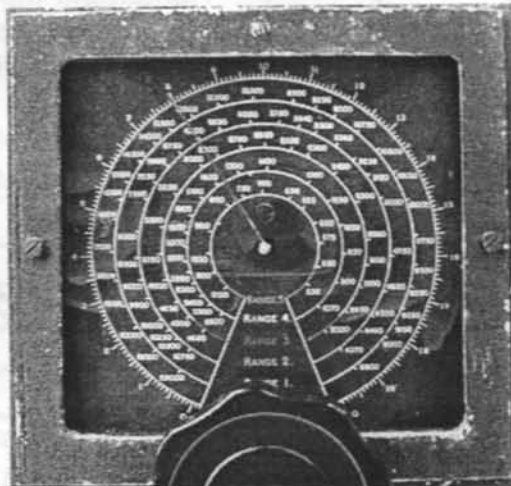
Stores Reference Numbers:

Reception Set R101 ZA 3253

Supply Unit Rectifier No. 1 ZB 6639

Valves

Function	Army Type	Civilian Type
RF amplifier	ARP13	VP21
Mixer	ARP4	SP210
Local oscillator	ARP4	SP210
IF amplifier (x2)	ARP13	VP21
Detector / AVC	AR10	HD24
AF output	ARP1	X64
BFO	ARP4	SP210



This is a close up of the R101C dial showing ranges 1 to 5. Range 6 was never issued to the Army as it covered the IF frequency of 465Kc/s.

The receiver shown here is stamped by Eddystone as serial number: LPC 677 and under the lid is the number '163', also marked on the top of the set. As only 70 were made, did they start at 100? This makes our receiver quite a late model.

This set is marked 'R101C'; was this the only version or was there a 'A', 'A' or a 'B'? Knowing Eddystone there is probably only a 'C' version.

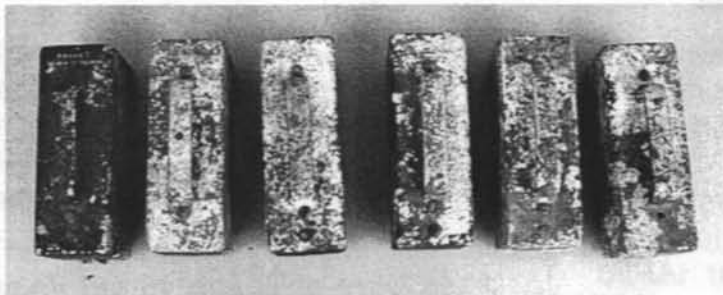
The R101 was born out of a simple 'cost and time saving' exercise. In 1938 it was decided that the existing military R100 was uneconomical to produce and an alternative partner for Wireless Sender No. 5 was sought.

In collaboration with the Signals Experimental Establishment, Eddystone modified their commercial LPC 466 receiver slightly to produce the Reception Set R101 for military use. The first R101 pilot model was delivered in January 1939 whereupon a total of 70 receivers were ordered and delivered during that year.

This was a modified version of the LPC 466 which featured a dial lock on the main tuning plus the telephone jack and terminals were replaced by a double socket suitable for two Plugs Single No. 9 (*special army jacks*).

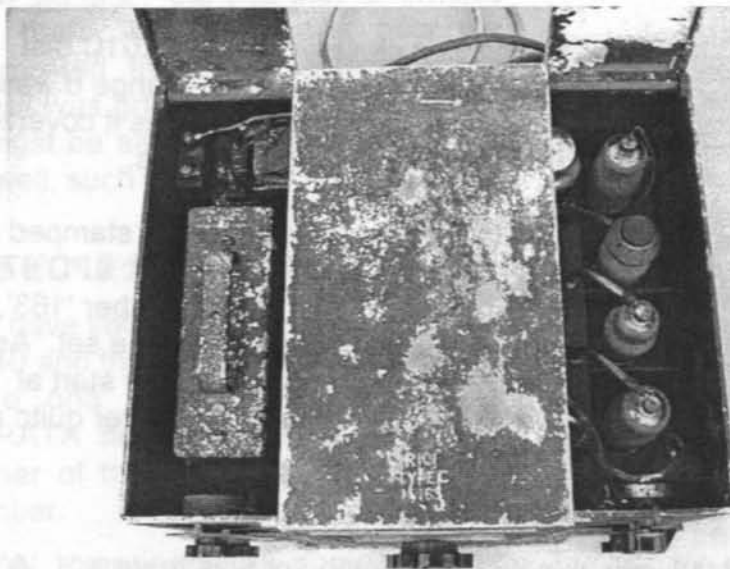
Unfortunately the R101 did not fare too well under mobile conditions, despite being placed on an anti-vibration carrier. The slightest movement rendered reception of CW or R/T signals impossible. The set's owner reports that this was due to the tuning speed of the set being too high, combined with high selectivity. Under stationary conditions the R101 behaved very well.

There was a rumour that when the first R101 was tried mobile in a tank, everything was fine until they fired the main gun. At that point all the valve filaments went open circuit. I wonder if there is any truth in that.



The coil set bears an uncanny resemblance to those used in the later 358 model.

This set is the standard issue ranges 1 to 5 and 7.



Remember the 'gull wing doors' on the 'All World Eight'? The R101C uses what appears to be a very slightly modified case; only a few extra holes.

The casting appears almost (if not) identical.

The R101 is a superheterodyne receiver with one RF stage, mixer and separate local oscillator, two IF stages at 465Kc/s, AVC and detector, AF output amplifier and BFO. Low impedance headphones were used type CLR Double No.3.

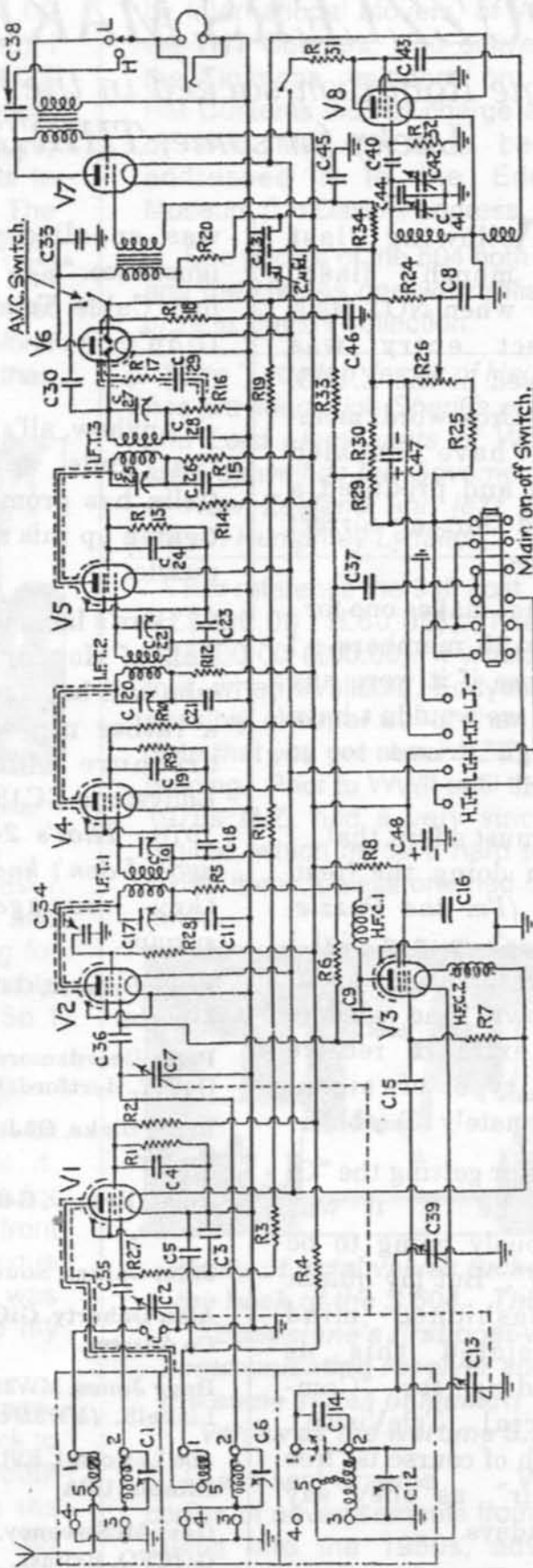
Reception Set R101 was part of the early Wireless Set No. 5 installation before being replaced by HRO, CR100/2 and AR88 receivers. It also formed part of the Wireless Set No. 23 installation before being replaced by the R107 receiver.

For full details of the military application of the R101 please refer to Louis Muelstee's excellent 'Wireless for the Warrior' books, volumes 1 and 3.

On the right hand side is the R101 circuit diagram; no values I'm afraid but you'll get the general idea!

That's all for this issue – a rare find indeed. Next time in Ponderings I'll be telling you about the EB36A and how to make your 940 even better to use.....unless, of course, another scarce beastie is unearthed!

73 de Simon M5POO



Circuit diagram of the R101 receiver

E.U.G. CROSSWORD NEWS

PUZZLERS MAKE COMEBACK

*Anne Robinson sacked in the face of members' success
Lucky for some; THIRTEEN WINNERS!*

Following last month's fiasco when NOT ONE correct entry was received in the E.U.G. Prize Crossword, members have buckled down and produced a record thirteen correct entries.

That makes one for every 25 members. I suppose if it were any more we wouldn't have enough prizes to go round!

I must admit that when doing the 'test' copy (*I'm the Puzzle-master's guinea pig*) I had reservations about 22 down "One needs to pay extra to receive this type of signal legitimately (3) (abb)".

After getting the "C" and the "V" it was obviously going to be "CTV". But my quaint old-fashioned mind translated this as standing for "Commercial TeleVision", which of course is "free to air", as they say nowadays.

Chewing this over later with Jesse (our mailing manager) she

was appalled at my ignorance. "CTV stands for "Cable TeleVision" Didn't you know? (No)

Anyhow, all's well that ends well and Colin has promised to tighten up this month's puzzle.

Here's last month's Roll of Honour, all of who will have received a rather nice vintage brochure for the Eddystone EC1837/2 of 1978. *That's 24 years ago! I don't know how they managed to survive.*

Ernie Beamer, G4TKY,
Lincoln,

Peter Beardsmore,
G4IXY, Hertfordshire,

Brian Blake, G3JOS,
Rugby,

Roger Bracey, G4BZI,
Crewe,

John Caines, Southport,

Alan Doherty, Gi00TC,
Co Antrim,

Dave Jones, MW3DUJ,
Llanelli, (MW8DUJ)

Joe LeKostaj, K9LY,
Illinois, USA

Gary McSweeney,
Gi4CFQ, Belfast,

(keep going ...)

Tor Marthinsen,
Tønsberg, Norway,

Jack (*Where, oh where has my signal gone?*) Read,
Nantwich, Cheshire,

Dave Skeate, G0SKE,
Suffolk,

David Whiting, Ontario,
Canada.

What a nice well-spread list that is! Saves me from making up any more fillers except for the answers and next month's prize.

ACROSS: (1) Silver mica (8) Bel (9) Short man (10) Slant (11) Receive (12) Inert (15) Plays (18) All ages (19) Decca (21) Very nice (23) AFN (24) Ground wave.

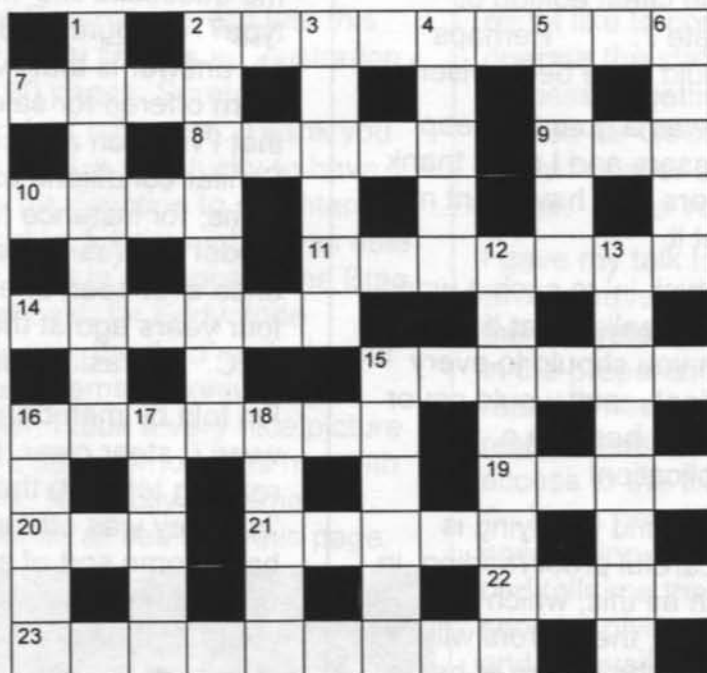
DOWN: (2) Ich (3) Variety (5) Remove (5) Ions (6) Abrade (7) Plot (9) Strip (13) Near new (14) Taste (16) Arcing (17) Florin (19) Dead (20) Avro (22) CTV.

Entries for this month's puzzle will each receive a vintage double-spread spec sheet of the 1983 Eddystone 2kW VHF/FM Broad-casting Transmitter System. A rare item. Graeme - G3GGL

E.U.G. PRIZE CROSSWORD No 9

COMPILED by COLIN CRABB G4HNNH

Photocopy or write out the answers so as not to spoil your copy. Send to Graeme Wormald at 15, Sabrina Drive, Bewdley, Worcestershire DY12 2RJ, England, to arrive not later than 25th September. See previous page for further details.



ACROSS

- 2) These cans, one hopes earn changed meaning when used as transducers (9)
- 7) A single source of electric potential (4)
- 8) and 23 across. The inventor of the superhet (5,9)
- 9) Essential wobblator circuit stage (3 abb)
- 10) The British education council that provides vocational training and qualifications in technical and business subjects. (4 abb)
- 11) Vintage talking machine consumables (7)
- 14) British Aerospace long range electronic reconnaissance aircraft (6)
- 15) Description of a 730/4 compared to spec. after it has been sprayed a shade too dark! (6)

16) Potential difference measurement. (7)

19) Compatible connector found in amateur radio (4)

20) Fifth note of a musical scale (3)

21) Tell tale sign of a burnt out mains transfo. (5)

22) Trade name of the Inoue Communication Equipment Corporation (4)

23) See 8th across.

DOWN

- 1) A neutral particle with very small mass (8)
- 2) Permanently polarised dielectric body analogous to a permanent magnet (8)
- 3) One possible solution to the fault indicated at 21 across (6)
- 4) Cabinet fixture found on some Eddystones that

enables rapid internal access for changing valves etc. (5)

5) Type of miniature valve base (5)

6) Specific nationality of the first BBC director general (5)

12) A valved Eddystone transceiver would perhaps fit into this category! (5,3)

13) Common term for a negatron (8)

15) Italian manufacturer of modular vfo units popular with home brewers in the late 50's - early 60's. (6)

16) KW amateur ssb/cw tx first introduced in 1963 (5)

17) Unwanted 50c/s ripple (2,3) (part abb.)

18) Single replacement support for your Eddystone (1,4)

QRG/3

The Ultimate Quick Reference Guide

I'm already having misgivings about having named the latest edition of QRG 'The Ultimate . . . ' Perhaps 'Penultimate' would have been wiser!

Nevertheless, it was a quantum leap over its predecessors and I must thank the many members who have sent me kind words about it.

When you get 'stuck in' to such a work of scholarship you realise that if you pay the attention you should to every detail, then the final result would never hit the streets, or, at best, be a posthumous publication!

What I'm getting round to saying is that, in spite of careful proof reading, in a document such as this, which is almost all statistical, then errors will creep in. This is in the nature of being the first tranche of amendments. I'm sure there'll be more!

Page 19; 'Empire Two', insert the 'u' in 'amater'.

Page 26; after the 'NOTE' concerning 'half-moon dial sets' insert the phrase 'except the S.556/504 (above) which have low impedance co-axial aerial sockets'. (!)

Page 27; after the entry '**EDDYSTONE TYPE S.659**', change the entry '**S.569B:** as S.569 . . .' to read '**S.659B:** as S.659 . . .'

Page 50; in the entry for 'EDDYSTONE Model 1995', at the bottom of the entry, change '1995/2 2 MHz to 1100Mhz' to read '1995/2 20MHz to 1100Mhz'

Page 58; final paragraph, change: 'It is also licensed to BSB of Hastings . . .' to read 'It is also licensed to SBS of Hastings . . .'

Members have already started asking me questions like 'how rare are the type774 Mounting Blocks?' (page 55). My answer is that I've never seen them offered for sale in the eight years that I've been an active EUGer! Similar conditions exist for many other items: for instance the 5" speaker, model 652 (same page). I've only once ever seen one for sale. That was four years ago at the NVCF at the NEC. The asking price was £100 . . .

I'm told by members who trawl the www (I steer clear, I find it as boring as reading teletext) that an Eddystone 'bug' key was offered recently on 'e-bay' (some sort of an auction site, I understand) and was seen to go up to over £150 before it disappeared in a stream of dashes.

It's the old collectors' story, anything neat and small fetches a price far beyond that which common sense would indicate. Look at stamp-collectors . . .

If you see any of these accessories offered (in ignorance) for under a tenner snatch it up and run, don't wait for the change or you'll be gazumped!

Two members have already noted that I've given the transistor types used in the Eddystone Active Aerial Type LP3382 (page 58) and quite rightly deduced that I must have found the circuit diagram. Very perspicacious of them!

I promise to copy it out neatly for the next issue of 'Lighthouse'.

Graeme – G3GGL

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for Eddystone Radio
Enthusiasts
Founded in 1990 by
Ted Moore
Issue 74. August 2002

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(Miniature valves, MW, SW,
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Peter le Quesne ZL4TCC, 23,
Oriol Place, Napier 4001, New
Zealand.

FOR Eddystone 730/4:-

desperately in need of dial
plate, vernier scale and the
730/4 badge that sits behind
the dial plate opposite to the s-
meter. Also a chrome handle
and RF gain knob. I would
consider a trashed 730/4 if
these items were OK. (I've tried
Dave Simmons but no good). I
live in N California but visit UK
often and have UK shipping
address. Call Geoffrey
Ganiford, W6/G3UXB USA
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Would the Person that
purchased the following
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