

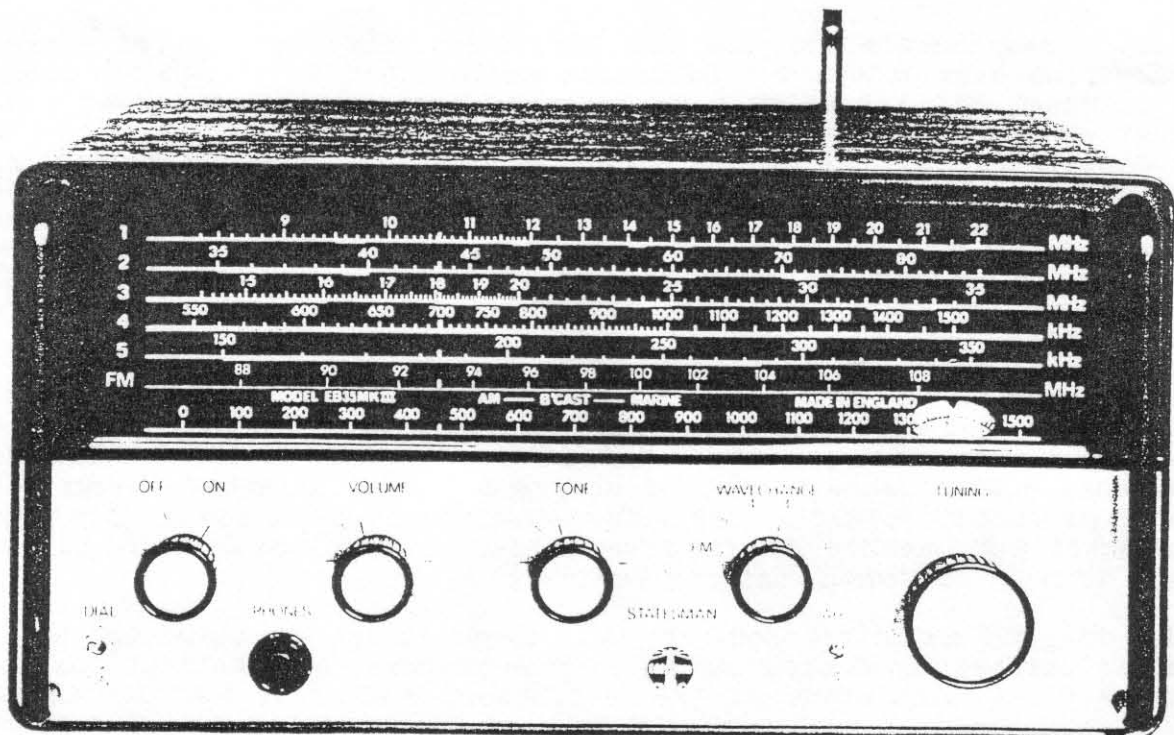
Eddystone User Group Newsletter

Issue No: 34

December 1995
Xmas Edition



Featured Model: EB35 MkIII Statesman



Supplement with this issue: Eddystone Lighthouse; the story behind the logo

*A non profit newsletter for Eddystone Users

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

*Please address all mail to:

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

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

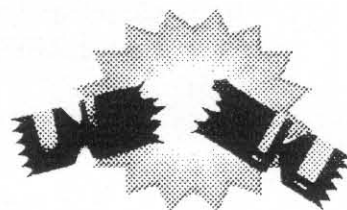
This is issue 34 of the newsletter and is the fourth of six issues for the year 1995/96. If you join after this issue you will get the back issues to and including no 31. Your subscription will end with issue no 36. Subscriptions are £10 per year UK and £11 per year overseas. Metals EUG badges are available at £2 each. Any remittances for subscriptions, badges or manuals must be by cheque or money order and in sterling. We cannot cope with foreign currency as the bank charges for conversion are more than the value of the subscription. Make your cheques payable to Eddystone User Group.

Copies of manuals and circuits are available for most Eddystone receivers through the EUG with discounts for EUG members. Manuals cost between £3 and £10 depending on size, and whether original or a copy. Most manuals are now copies. Back copies of all newsletters are available at £2 each post paid.

All correspondence for the EUG should be addressed to Ted Moore, Eddystone User Group, c/o Eddystone Radio Limited, Alvechurch Road, Birmingham B31 3PP. PLEASE do remember that we cannot answer your queries by phone. The company is pleased to be able to help with the administration of the EUG but we do not have the time or resources to answer telephone enquiries. Request for manuals will take about 4 to 6 weeks to deal with provided we can identify the requirement and have the information. Any technical queries are sent on to Ted for him to answer. Where information is requested that requires a bit of digging then this can take some time depending upon the free time of the volunteers.

We now expect to get access to our new premises in mid December, allowing a few weeks for essential changes and repairs, we anticipate moving during January. We will write to all members with the change of address during January, but of course all mail directed to our old address will be forwarded for some time afterwards. We had a visit from a Canadian EUG member who was given a tour of the place by David Lakin, who is head of Communications Business.

How does EUG administration run, well there is Pat who opens the mail, administrates the monies coming in from members for subscriptions and manuals. Pat also sends out the newsletters which have been printed by Christine in Tech Pubs. Josie Murphy is the official spares support voice and it is she you would go to if you wanted to buy spares. Having said that we have very little now available for valve sets. Chris Pettitt, looks at all the mail and re-directs those that go to Ted for answer. Requests for information about the EUG and back copies of newsletters or manuals are also dealt with by him, who gets copies of the manuals from either Christine or Josie. These are the volunteers, and we all wish you a very Merry Christmas and
a Happy New Year.



- Issue 34 -
- Christmas 1995 -

- Always a special issue the Christmas one, half way through the EUG year, and the time when we offer you the Supplement together with your Newsletter.

- Each year so far the Supplement has been concerned with a 'radio' aspect of Eddystone. This year I decided that members might like to know something about that edifice from which the Company has drawn not just it's logo, but also the same qualities of robustness and reliability.

- The Encyclopaedic article is the work of EUG member Graeme Wormald, the List of Facts about The Eddystone Light has been drawn mainly from the book by Fred Majdalany, THE RED ROCKS OF EDDYSTONE. This book is still available through your local library, although it was originally published in 1959. If you are interested in reading the full authoritative history of the four, yes four, lighthouses that have stood on the Eddystone Reef, then quote the title and author plus the Dewey number 623.89420916336. There are other books as you will see from the full bibliography contained in the Supplement.

- This issue the Featured Model is the EB35 Mark III, this was the final version of the popular series and was perhaps the first Eddystone model to utilise an I.C. Instruction manual copies are available from EUG for £3.00 inclusive.

- There are further period ads since members mail has indicated that there is considerable interest in these. Should YOU have any such ads which will copy well enough to be used then EUG can copy them, or we can refund your copying and postage.

- A few more items contributed by Graeme Wormald, he really must be one of our most active members ! Just where does he find the time ?

- I am hoping that this issue will be with you all before the holiday, so that you may enjoy the Newsletter along with your turkey, I am sure that all members of EUG will want me to express our thanks to all those at Eddystone Radio who have voluntarily helped with the admin; and copying of the last six issues - Thanks Pat and Friends.

- - - - -
- Members Free Ads.-

- I have to draw the line somewhere and I do so when the ad is of no interest to the general run of members, or when it is, for example, by a non-member who is advertising non Eddystone stuff. As a recent example, a non EUGer who wanted to advertise for sale a Sinclair micro Tv together with an HP programmable calculator. I have included a full ad on behalf of Philip Taylor, who is a long time member of EUG. No, this is not a paid for ad, it is by way of an apology from me for getting his address wrong in issue 32 ! Several members have written to say that they have been very satisfied with the service they have received from Philip, his stock of electrolytics alone must be of interest to all owners of 'hollow-state' equipment.

- Another supplier to be mentioned here is Howard Turner of Centre Electronics in Birmingham. Howard is often able to supply you with that otherwise unobtainable Eddystone spare part, sometimes new, sometimes second hand but good.

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- SFERICS.-

- So far 3 EUGers have written to tell me that they are in the process of constructing replicas of pre WW II models. Two replicas of the Short Wave 2 are being built, and one replica of the Eddystone Twin. Any more out there? Let EUG know and if I have any photos or schematics here I will help out.

- Commercial Ads this past year have featured a number of the later models (to us) of Eddystone Commercial Comms; Receivers. Maybe the dismantling of the British merchant fleet and the trawlers is the reason, what ever it is some of the prices are quite advantageous. Sam has bought an 1830 for a mere £150, apparently in very good condition too. Up in Fifeshire Dave is now the proud owner of a 958 that has seen service all over the globe, it cost him £200 but came with the original packing and handbook. All this is good to hear and EUG is happy for the new owners, but listen to this. A Homelander has recently been restored after many years in a museum store room, it has been sold to another EUGer for the fine price of £65. Jim is using it as a bedside radio and is very happy with his new acquisition.

- The list of Faults that was published with the Xmas 1994 issue is still available and for the sum of £3 sent to EUG at the Factory you can get your own copy. This is for those new members who have joined since that date. A read through the specific list of faults that have occurred on other examples of your set will often help you to diagnose just why your favourite receiver is not working.

- Alan says that it is very important to replace the isolation washers in the correct place should you ever have cause to dismantle the chassis from the front panel casting of one of the AC/DC sets, i.e. 670 or 840 series. A very important point since otherwise your front panel and case could become live, at full mains voltage.

- I'll say this again, NO the 670C is not a poor design, nor is it deaf, compared with the earlier version the 670A. The mistaken impression is sometimes given because the 'C' version has a low-Z, a 75 ohm, aerial input and when you compare it on the same random wire aerial with an 'A' version which has a 400 ohm input - well you get the point ??? Mind you, we all do use an ATU, don't we ???

- Thanks to Stan Pyke who donated the EB35 II to EUG, it will shortly be going to a new home, chez Jim Murphy. I wish Jim luck with it, when he has it rewired.

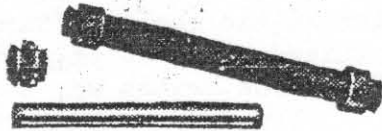
- The winter nights are coming and it is time to set about those cleaning and restoration projects, if you are not sure of what to do, or how to go about it then write to me at EUG. I promise I shall do my best to help out, be it a scale cleaning job or instructions on how to re-string your dial cord. Even some help with fault diagnostics, just drop me a letter with all the details that you have.

- The item on 'Noisy Trees' is a reminder that both wind and rain can spoil our listening, winter is the time when these factors will become more than usually effective in producing QRM, do check out these possibilities before blaming your Eddystone! Yes it does happen, had a letter recently where wind and a badly oxidised joint in the downlead led to the 750 being dismantled and prodded about a bit.

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IT PAYS TO BUY THE BEST

Extension Control Outfit.



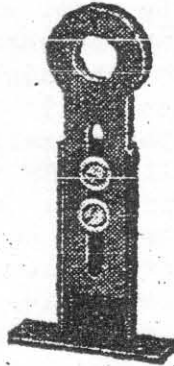
Ample length adjustment is obtainable with the 4" non-warp precision drawn insulating tube and 3" brass rod provided in this outfit. Complete with panel bush and nut.

No. 1008. Price 1/3

Adjustable Bracket.

A strong baseboard bracket for mounting components controlled by an extension rod. Has adjustable (2 1/2" to 3 9/16") slide of DL-9 H.F. insulation.

No. 1007. Price 1/5



Flexible Coupler.

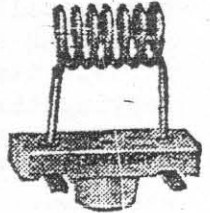
Free from back-lash but very flexible, this coupler banishes alignment troubles. DL-9 H.F. insulation. For 1/4" spindles.

No. 1009. Price 1/6

IT PAYS TO BUY THE BEST

ULTRA S.W. COILS

The coils are wound with 14g. copper wire, heavily silver-plated. The mean diameter is 1/2". A Frequentite base is used for mounting purposes.



- No. 1020. 3-turns, 1/8.
- 4-turns, 1/6.
- 5-turns, 1/7.
- 6-turns, 1/8.
- 8-turns, 1/10.

New 1935

ULTRA SHORT-WAVE H.F. CHOKES

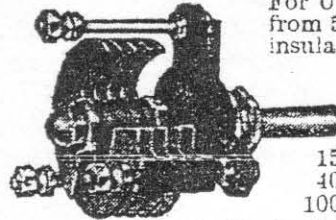
These chokes are single layer space wound on DL-9 formers, and have an exceedingly low self-capacity.

- No. 1011. D.C. Resistance 1.3 ohms. Price 1/3.
- No. 1021. D.C. Resistance 1.4 ohms. Price 1/3.

EDDYSTONE MICRODENSER

No. 900.

For Ultra Short Waves from 5-10 meters DL-9 insulation. Low series resistance at high frequencies. Noiseless operation.



- 15 m.mfd., 3/9.
- 40 m.mfd., 4/3.
- 100 m.mfd., 5/-.

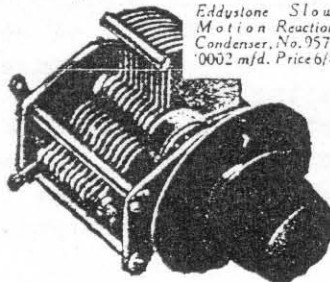
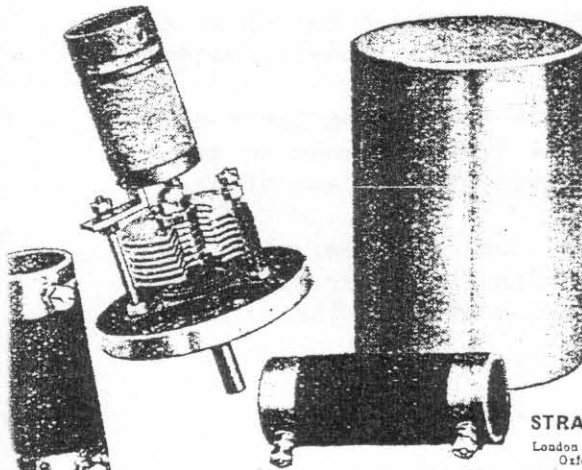
STRATTON & CO., LTD.,
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London Service Depot: Webb's Radio Stores,
14, Echo Street, Oxford Street, W.1.

BUY
EDDYSTONE
SHORT WAVE COMPONENTS

EDDYSTONE
SHORT WAVE COMPONENTS

EDDYSTONE COIL UNITS

for the SINGLE SPAN RECEIVERS



Eddystone Slow Motion Reaction Condenser, No. 957, 0002 mfd. Price 6/-

I.F. UNITS. Set of four, each coil to specification, bracket mounted on Eddystone Microdenser and in heavy gauge polished aluminium screening can. 35/- the set.

OSCILLATOR UNIT. Coil to specification mounted on Polar type "E" condenser in heavy gauge polished aluminium screening can. Price 10/-.

AERIAL COILS. L.1 and L.2 on bakelite former to specification. Price 2/- the pair.

COILS ONLY. Per set of seven, wound to specification and testing. 12/6 the set.

STRATTON & Co. Ltd., Bromsgrove St., Birmingham
London Service Depot: WEBB'S RADIO STORES, 14, Soho St., Oxford St., W.1. Telephone: Gerrard 2049.

EDDYSTONE
HIGH GRADE COMPONENTS

- Gremlins ? or some such thing ? -

- One reader, ex RAF ground crew circa 1948, has written in with a real head-banger of a fault.

- Down stairs after the Sunday lunch he was asked by his daughter whether he had switched off his 888 as usual before coming down for the meal. He had thought that the set was off, but listening from the bottom of the stairs he could still hear the QSO in progress that he had earlier 'turned off'.

- Going up he found that the set was indeed switched on, yet he was almost certain that he could recall flipping the mains switch up, to off, before leaving the shack.

- Several days later as he entered the shack he was astounded to see the 888 dial lights come on as he crossed the room, sure enough the mains switch was down. Only a little investigation was necessary to discover that the toggle switch spring had deteriorated to the point where slight vibrations could jolt it down from the off to the on position. It was the original switch as fitted at the Factory and so the operational life of the switch must have been well exceeded, the so-called MBTF figure was usually around a half million operations for these components. A new toggle switch was bought from a stall at a rally and the set was once more back to normal, no supernatural happenings involved here after all.

- The same reader recalls a domestic set of the early post war era, could have been a Philips, which could be tuned to a certain station place on the dial, within minutes the pointer and knob would slowly begin to move anti-clockwise so that the set was detuned to the LF side of the wanted signal. It never failed to interest all who watched it happening. The cure was just a matter of correctly adjusting the cord drive that had been re-strung by a non-expert in those matters. The Bowden cable type drive ran alongside and touched a valve, as it warmed up so did the cable case, the resultant expansion did the necessary ! Easy when you know how.

- - - - -
- Microphony.-

- This is not always due to duff valves ! One case mentioned recently has been attributed to corroded braid used to earth tuning gangs, in another similar instance it was dried and non-conducting grease on the condenser rotor bearings.

- Still another example has come in from Ian Poole. His 659 had been in the shack unused for several days, a hot and humid summer with much sweating by the operator was the eventual cause. The valves were removed and a green slime was found to be on the pins of the valves, when cleaned off the microphony was cleared also.

- Instances where the dirty contacts of the range switch were the cause of tinkling sounds as the switched was turned from one range to another, switch cleaner fluid was the answer.

- How about an AF gain pot where the contact between the carbon track and the slider was oxidised after long periods of non-use ? This seemed to act as a form of carbon microphone, taps with a screwdriver on the case of the pot caused loud 'boings' from the speaker.

- In a venerable 358 the microphony seemed to be under chassis, when the set was taken out of its case and upturned on the bench the paper type condensers were found to be at fault, tapping them caused noises in the speaker or phones. If in doubt Try Everything in Sight.

- - - - -

- Bias, or bias ? -

- I know that my love of, and for, things Eddystone makes me biased, but this article is not about that particular kind of bias. What I am about to discuss is Bias, that particular level of voltage that is needed on a valve's electrodes for it to operate correctly.

- Our Transatlantic cousins called it the 'C' voltage (A volts being the filament supply and B volts being the HT supply). In those days the supply was almost always from a low capacity battery, nowadays the bias supply is provided as an 'automatic' bias developed across a resistor.

- The Screen Bias is usually supplied from the HT via a series dropper resistor, or maybe across a potential divider from HT to chassis.

- Whichever electrode the Bias is being supplied to, one necessary factor is that this Bias remain within certain prescribed limits if the valve is to operate correctly. There are tolerances allowed, necessary since all of the fixed, passive components used will have manufacturing tolerances.

- What is not too often realised is that whilst the designer will have used components that allowed a valve stage to operate well within it's design parameters, there was never any idea in his mind that the equipment concerned would still be operating on a daily basis after a delay of some 30 or 40 years ! Who at Eddystone would have guessed that the early post WW II model, the 640, would still be so popular in 1995 ? That is 50 years of usage !

- When sets of this age are put on the service bench for repair or for restoration one of the first things that must be done is to check the voltage values under power against the stated values contained in the manual for that model. Any gross differences over the usually stated 10% should be investigated, bearing in mind that a difference in voltage at one point may be caused by a component failure at a very different part of the circuit.

- I find that a check on kathode voltages on each stage of the receiver is a good quick check to locate the faulty, possibly low gain, stage. Once the stage is known a careful check on each of the passive components should be done, these will be both resistors and condensers.

- The resistors are normally of the carbon rod type, and these never go low in value, they DO almost always go high in value with age. A typical value in a grid circuit could be a 270K, cases where this value has gone up by a factor of 5 or 10 are common. Kathode bias resistors are usually several hundreds of ohms when fitted, I have found them measuring up to a Kilohm or even more. Screen dropper resistors of, say, 47 to 100K may be found to have gone very high. I have a sample 100K taken from a screen feed which now reads out at 2.4 Megohms ! That they do age and go high is no longer in doubt, that this will lead to a considerable drop in performance is also not in doubt. The advice is to always check them with a good meter.

- Condensers, be they paper insulated foil type, or electrolytics, go faulty too. The paper type go leaky with age so that if they are used as decouplers across a bias resistor they will lower the total resistance value of the parallel circuit, thus lowering the Bias voltage. If the condenser that is leaky is the decoupler for a screen resistor then it can even cause the screen resistor to burn out completely ! Fact, this seems to happen regularly with screen decouplers in a certain well known make of american comms; receiver. The e'lytic type usually dry out and lose all or part of their capacity, this allows the signal voltage to develop across a kathode resistor, it can cause distortion or instability.

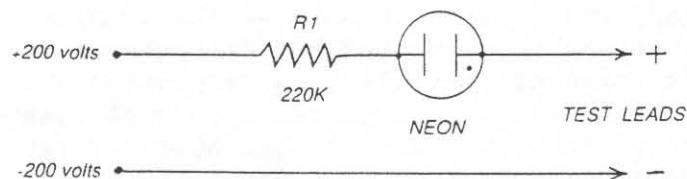
- The general rule is that any component that, in the case of resistance value, is out of tolerance should be replaced. In the case of condensers if there is the slightest chance of leakage, the motto is 'change it'.

CONDENSER ZAPPER

- or how to sort the sheep from the goats . . .

Anybody who's ever spent much time restoring old radios will tell you that the most common faults, no matter what make or model, are leaky condensers. Coupling, decoupling, smoothing, they're all as bad. So how do you find them? There are three ways. The first is to change them all. There's something to be said for that, especially on a real old-timer from the 'thirties. But on a decent 'sixties Eddystone this can be a bit over the top. So you start to mess about with the AVO. But that's not much good because you're going to be misled by other parts of the circuit. So you lift one end of the condenser and the AVO will only find the real baddies, because the test voltage is far too low.

What you need is the simplest leakage tester ever devised. It's that good old-fashioned tell-tale, the NEON LAMP. And it can tell you an awful lot too. It can tell you if the condenser is good, a bit leaky, a lot leaky or a downright dead short! And it will re-form stale electrolytics (or tell you if they're past it). All it needs is a high voltage source (200-250v) and a ballast resistance in series, like this:-



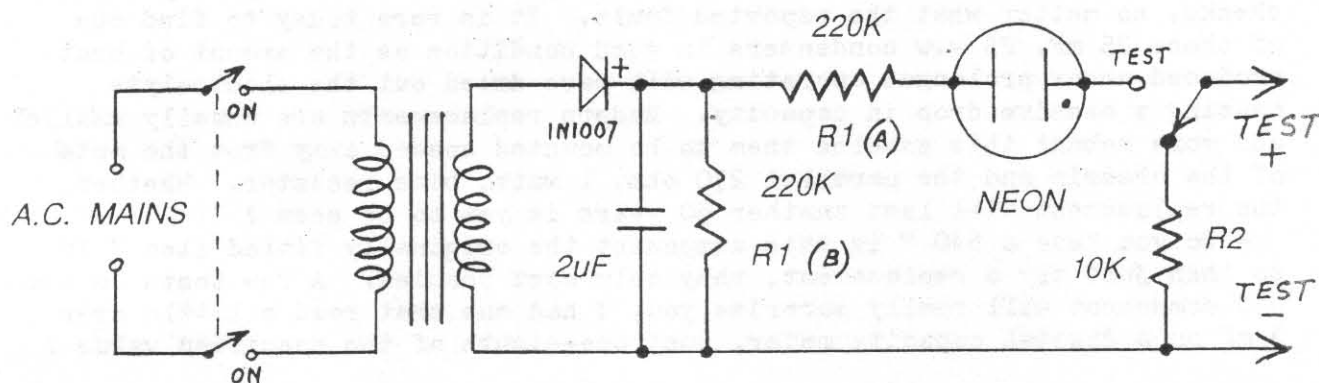
When a non-electrolytic condenser is applied to the test leads the neon lamp will flash as the condenser takes the charge. This flash will be of a brightness and duration which depends on the value of the condenser. The lowest value which will show a detectable charging flash is around .001 μ F. From .01 upwards the flash will be quite strong. A good component will just give one or sometimes two flashes and then stay out for ages. A slightly leaky one will 'blip' every so often, increasing in speed with its leakiness until it burns continuously, the brightness showing how bad (compare it with the test leads shorted).

An electrolytic must be connected with correct polarity (plus to plus; and don't test a low voltage cathode decoupler!). A 'stale' one may cause the neon to burn for several minutes whilst it re-forms. The brightness will slowly diminish and then the lamp will go out, and start blipping gently. This is a good smoothing condenser. If, after an hour, it is still glowing steadily, then throw it away.

A basic test-rig can be just as shown above. There are two ways to obtain the test-voltage. One is to 'borrow' it from a valve-type power unit or another receiver. (The power sockets on the back of many Eddystones will supply.) The second is to build

a transformer and rectifier into the unit. Mine uses the transformer from a BT Model 444 Teleprinter control unit; the one which provides the 2 x 80v for the magnets. Using both windings in series gives 200v after smoothing. The 'printer control units can be found for a pound or two if you're lucky. Or an old Rx transformer . . .

A more sophisticated version of the tester looks like this:-



The test leads (crocodile clips) are connected up without voltage on them and then the test switch is thrown whilst carefully watching the neon. After the test the switch is flipped back and the condenser discharges through R2. The test leads won't give you a shock even when live, but a fully charged condenser may. The layout is uncritical. Fit it in any suitable box. The neon is best shaded from direct light. All my bits came from a well-stocked junk box, but for those who don't hoard so much here are the main items from the 1996 Maplin Catalogue:-

Switch,	S1,	DPDT,	P.963	FH39N	99 pence
Bulb,	Neon,	Wire ended	P.724	RX70M	18 pence
Resistor	R1	2 watt	P.769	D220K	10 pence
Resistor	R2	2 watt	P.769	D10K	10 pence

While we're talking about the Maplin Catalogue it might be a good idea to mention that if you look from page 626 to page 632 and read the small print carefully you will find a wide selection of replacement high voltage condensers at very reasonable prices. For instance, disc ceramic, .01uF (10,000pF in modernspeak), 500 volts, 15 pence each; they will decouple most RF and IF circuits and couple most AF circuits. Cheaper than you'll pay for dubious surplus stock at a rally! High stability silvered mica from 5pF to 1,000pF, 1%, 350 volts, for tuned circuits, 53 to 93 pence, but you shouldn't need many of these. Smoothing electrolytics (radial leads) 10uF, 450 volts, 84 pence. Look no further... And if you're seeking valve-type resistances look at page 769. Metal film 2 watt, 500 volts, a limited but perfectly adequate range from 68 ohms to 1 megohm, 10 pence each, fine for anode and screen droppers. Page 768, metal film 0.6 watts, 250 volts, 1.ohm to 10 megs, 5 pence each, fine for AVC chains, grid circuits, etc. Seek and ye shall find . . .

GRAEME - G3GGL

- Thermally Challenged Components. -

- If I have to choose any one component in any Eddystone model, that is thermally challenged, then I would have to opt for the electrolytic condenser in the cathode circuit of the 6V6 output stage. It really does lead a very hot, enclosed life. Mounted under the small chassis that holds the AF output stage, and very close to the valve holder of the 6V6 bottle, it has the added heat from the cathode bias resistor close by.

- If I ever have a 640 to repair this component is one of my very first checks, no matter what the reported fault. It is rare today to find one of these 25 mF, 25 v.w condensers in good condition as the amount of heat produced under prolonged operating will have dried out the electrolyte causing a massive drop in capacity. Modern replacements are usually smaller and more robust this enables them to be mounted spaced away from the metal of the chassis and the parallel 270 ohm, 1 watt, bias resistor. Whether the replacement will last another 50 years is yet to be seen !

- Do you have a 640 ? is this component the originally fitted item ? If so then just try a replacement, they only cost pennies. A few tests on the old component will really surprise you, I had one that read a little over 3 mF on a digital capacity meter, just one-eighth of the specified value !

- - - - -
- The E.C.R Comms; Receiver, circa 1936. -

- Nice to find that keen EUGers are collaborating in the re-construction of a manual and schematic for this model of comms; receiver.

- Between them Tor Marthinsen of Norway, and Andrew Humphriss of the UK have re-written the original manual for this model. The only copy that was available was in quite poor condition, with a couple of missing pages to make the job more difficult. To add to their problems there is the fact that the circuit, and the manual have some unexplained differences.

- Possibly the one irritating difference is that whereas the existing schematic for this set shows no noise limiter circuitry at all, there are mentions of this in the text of the manual.

- I have a Stratton's advert for that period which states quite clearly that "A highly effective noise limiting device is fitted". We are here referring to the civilian version of the E.C.R, and not the military type S.160 so that cannot be the reason for the discrepancy, in fact the blueprint BP 387 for the S.160 seems to be identical to the manual schematic for the E.C.R except for the fact that the valve types are stated to be the UK types, i.e the KTW61 in lieu of the 6K7 and the EB34 in lieu of the 6H6.

- In all the existing gen for this E.C.R/S.160 model I can find no schematic which has got a noise-limiter circuit. This would have required an extra diode, entailing replacement of the H63/6F5 with an DH63/6J7, again nowhere does this appear except for a handwritten comment in the old copy of the manual that Tor and Andrew have.

- If any EUGer has in his possession a copy of the E.C.R/S.160 circuit that does show a noise-limiter circuit with the necessary valve changes then PLEASE do write to me at EUG and I shall pass on the info to these two intrepid Sherlock Holmes characters. Thanks !

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WEBB'S RADIO for everything **EDDYSTONE**

— EDDYSTONE COMPONENTS assist EFFICIENCY —

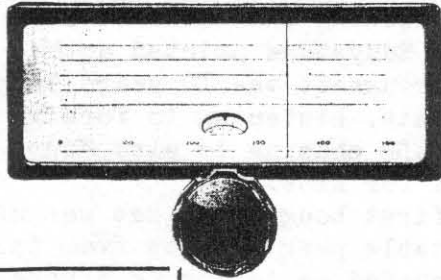
THREE FACTORS CONTROL the final efficiency of home-built apparatus—

- ★ **DESIGN**—for which you may confidently rely on the excellent articles in this book.
- PLUS
- ★ **YOUR SKILL**—the intelligent use of this book will help both expert and novice.
- PLUS
- ★ **EDDYSTONE**—When you install Eddystone you know the component ensures maximum efficiency for its particular application. So use EDDYSTONE and make certain the R.F. section of your gear performs well.

EDDYSTONE GEARED SLOW-MOTION DRIVE No. 898 £3.11.4d.

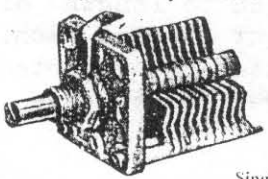
Your VFO or Receiver deserves an accurate means of control. Here it is—Made to **PRECISION** to suit **PRECISION** apparatus

This beautifully made dial, widely acclaimed by technical Press and satisfied users, is of true "Instrument" quality and highly suitable for precision control. Gear drive ratio 110 to 1, flywheel loaded, smooth and positive action. Pointer travels 7 in., circular vernier scale provides total of 500 divisions. Main dial has five lines to take calibration markings. Overall size 9 ³/₁₆ in. — 5 ³/₄ in. Diecast escutcheon finished glossy black, Perspex window.

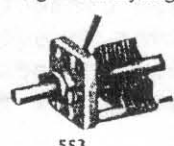


EDDYSTONE VARIABLE CAPACITORS

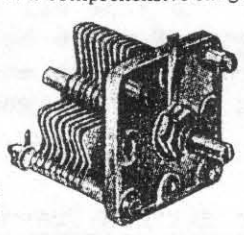
are available from miniature microdensers to robust TX condensers; the following three types merely indicate the general styling of a comprehensive range.



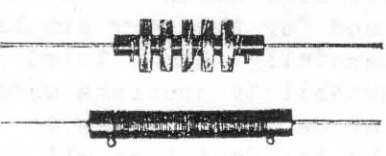
589
Price 10/4d.
Single section 5 to 60 pF.
Air gap 0.03 in. (12 other types and capacities in this range)



553
Price 10/-
Single section 3.5 to 54 pF.
Air gap 0.01 in. (Butterfly split-stator and differential also available.)



816
Price 16/4d.
Single section. 9 to 190 pF. Air gap 0.024 in. (3 other types available, also 8 T.X. types with double end-plates).



EDDYSTONE RF CHOKES are renowned for efficiency and close tolerance production.
No. 1010 1.25 millihenrys, 20 ohms, 4 sections, 50 m/A, price 2/8d.
No. 1011 5.3 microhenrys, 1.3 ohms, single layer, 50 m/A, price 2/-.
No. 737 2.5 millihenrys, 30 ohms, 4 sections, 50 m/A, price 3/4d.
No. 1066 13 millihenrys, 60 ohms, 2 sections, 50 m/A price 6/-.
No. 776 2.6 millihenrys, 10 ohms, 7 sections, 250 m/A, price 4/4d.
No. 1022 1.5 millihenrys, 10.5 ohms, 5 sections, 250 m/A, price 4/0d.

EDDYSTONE DIECAST BOXES

have innumerable uses for the home and professional constructor. Robust boxes useful where good electrical screening and mechanical stability is needed. All have close fitting flanged lid, securely held by screws.

No. 650	4 ¹ / ₂ in. × 3 ¹ / ₂ in. × 2 ¹ / ₂ in.	9/4d.
No. 845	7 ¹ / ₂ in. × 4 ¹ / ₂ in. × 2 ¹ / ₂ in.	14/8d.
No. 896	4 ¹ / ₂ in. × 2 ¹ / ₂ in. × 1 in.	6/8d.

This page shows only a small selection from the EDDYSTONE RANGE which includes 4, 6 pin and TX Frequency coil-formers, various dials and slow-motion devices, etc. From stock by-return supply of anything EDDYSTONE is assured at Webb's and the EDDYSTONE CATALOGUE is available free on request.

For recording signals heard and worked,

WEBB'S LOG BOOK

112 pages, 9 ¹/₂ in. by 8 in. approved format, semi-stiff covers, excellent value.

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14 SOHO STREET, OXFORD STREET, LONDON, W1

THIRD EDN, 4th PRINTING APR 1963

* The 670C on the Bench.*

- One of our Scottish members had owned the 670C in question for almost ten years, with no reason whatever to open up the case. A suspicion that some foreign object had infiltrated into the space between the speaker cone and the side of the case was the eventual reason, plus a little curiosity as to the internal state of the set.

- Opening up, removing the chassis and there were the dried egg pods of some unknown insect, these were removed and the rest of the chassis was examined carefully. Nothing other than a slight layer of dust covering every part of the topsides, this was removed with a new 1" paint brush and the help of the XYL's vacuum cleaner. When doing this it is as well to remove the valves as they will have become brittle with age and the repeated hot and cold treatment to which they are subjected. The spring on the retaining part of the valve holder should be slightly lifted with a small screwdriver tip as the valve is eased out of its holder.

- All of the valves may be the original ones since they all bear, in white paint the word Eddystone and a CV designation, not the commercial type number. This is something that had not been seen previously, although white valve boxes with Eddystone printed on had been seen in the 50s.

- Use throughout the 10 years in possession has been constant, almost on a daily basis. Listening to foreign broadcasts mainly although a certain amount of NDB chasing is also done, the coverage up to 350 Kc/s makes this a good set for NDBs.

- When first bought the set was used with a random wire of some 40 feet, the inevitable poor results from this Hi-z aerial fed into a low impedance input persuaded me to put up a wide band dipole arrangement. This consists of 2 halves of a dipole at 30 feet each half, paralleled with this are 2 halves at 20 feet and 2 halves at 15 feet. All are connected to the balanced 75 ohm feeder at the center insulator. At the ends all are connected to lengths of nylon line to bring the total length of all 6 halves to about 35 feet each. The ends are connected to handy trees at both ends, the center is supported from the eaves. Directivity seems to be negligible, but real tests have not been done.

- - - - -
- Swopping Germanium for Silicon Trannies.-

- So many correspondents have asked about doing this on their early model Eddystones, i.e. the EC10 and EB35 series, that I feel some words on the matter are called for. My personal opinion is DON'T DO IT, and for the very simple reason that I have never heard of it being done successfully. Simon tried it last year with his EC10 and had to admit that the instability problems were such that he went to Birkett's and bought a new set of Germanium types to re-convert the set back. The problem is compounded by the fact that all the Base bias resistor networks need to be changed, Ge types need @0.3 volts & Si types need double that @ 0.6 volt, on the base. The actual gain per unit is considerably higher with Si trannies, also the OC171 types do benefit from having the earthed metal screen can ! A case where the trannies of a 960 were swopped for Si types gave such poor results that the owner actually gave up and sold the set for spares, an almost heretical act.

- What can often help is to obtain a set of "new" germanium trannies of the same type, and then fit these to your set. The well documented "whiskers" syndrome seems only to happen when sets are used, trannies kept on the shelf do not develop this defect until long after they are put to use.

- I have heard that Birkett's can still supply the Ge types that are used in the EC and EB series, might be worth a phone call to check if you are going to do any work on your set.

- - - - -

- Transatlantic Dx on an Eddystone 870A. -

- The 870A must be one of the simplest models made after WW II by the Company, it is a 4 + 1 valve set but it does benefit from the all enveloping metal case common to all models, and the wonderful tuning drive mechanism.

- Nothing esoteric was used for the aerial, no beams at 50 foot, no ultra long beverage aerial system, just about 50 feet of insulated wire at a slope to the west. It starts at the eaves level where it is fed into the first floor 'shack' then slopes slightly down to about 15 feet at the bottom of the back garden. Having a direct take-off to the west across the Irish Sea must help of course.

- The aerial is fed to a 'Global ATU' and thence into the 870A, the amount of pre-selectivity that the ATU provides does help a lot. Long wave is where the many European broadcasters hang out, they are all audible although off to the side of the aerials possible directional lobes.

- On short wave many stations in both North and South America are easily heard, day or night. In fact the set is often used for background listening to one of the South American stations.

- On medium wave comes the surprise, after dark and especially later in the evening it is possible to hear the U.S broadcast stations and the Nova Scotia one that are normally only receivable on such as an 830/7. CJYQ can be heard most evenings if one is careful with the setting up of the ATU and the tuning of the 870A, a QSL from this station has been received recently.

- - - - -
- S.640 Transceiver Mods; -

- In the 1951 SWM there are some articles detailing the mods; necessary to "make the 640 talk". Whilst I am not myself a partisan of such mods; it appears that Brian Harte has had no qualms in dismantling his 'spare' 640 set and beginning the metal bashing mods to begin the process of turning his 640 into a transceiver.

- So far he has made the holes in the front panel casting, fitted the meters and switches, preparatory to beginning the re-wiring necessary on the chassis.

- Several part-completed versions have been seen over the past 40 years, but I have yet to see a complete working version, I hope to see a photo when Brian has completed the job.

- - - - -
- Remote Ferrite Aerial for the EB37. -

- Most modern sets for broadcast listening offer the advantage of a built in ferrite rod aerial, the EB37 does not. As the set is used for bedside broadcast listening it was decided to remedy this deficiency. Salvaging the ferrite rod from a scrap jap trannie, plus the coil wound on it, meant that all the parts needed were to hand.

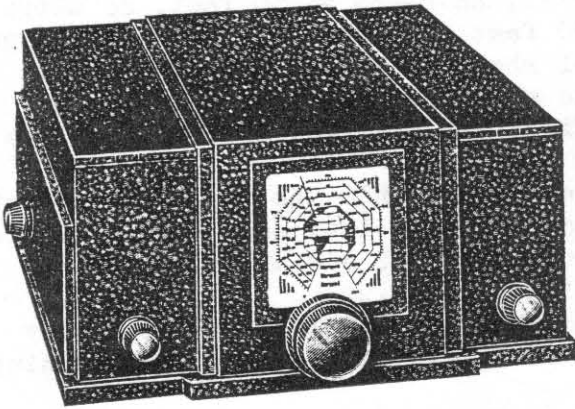
- Some 40 turns were wound on the rod from the original coil, they were spread along the whole length of the rod. then sealed in place with a layer of masking tape. The two ends of the coil were left some 3 feet long and these were lightly twisted together over that length, then sealed together with a length of masking tape folded in half lengthwise, this added some degree of strength to the thin wires.

- With 'banana' plugs on each end of this improvised lead, plugged into the back sockets of the EB37, the rod can be remotely sited for best results on the station to which one is tuned, no costs involved and just about 30 minutes of work. If desired a much stronger and more permanent job can be made when one is satisfied as to the efficacy of the aerial.

- - - - -

EDDYSTONE SHORT WAVE RECEIVERS

ALL WORLD EIGHT



FOR USE IN ANY CLIMATE
AN EIGHT VALVE ALL WAVE BATTERY
OPERATED SUPERHETERODYNE

SPECIFICATION.

The "All World Eight" is a selective and powerful Superheterodyne Receiver designed and built to give constant reliable service in any climate. Consumption is 15/18mA. and low tension 1.1 amperes. The receiver has eight scientifically designed stages—Pre H.F. amplifier, separate oscillator and first detector valves, two I.F. stages, double diode triode for detector and low frequency. Output is two Beam power tetrodes in Class AB push-pull 1.5 watts.

There are nine tuned circuits operating on all wave bands and giving an 8 K/cs. separation. The sensitivity is in the order of 5 microvolts for a 50 milliwatt output. Grid bias is automatically obtained.

The solid cast aluminium alloy chassis and cabinet will withstand the roughest handling, and is insect and damp-proof.

Tuning is easy with dual ratio (22-1 and 115-1) dial. Volume and tone controls are provided and gramophone pick-up connection. It is supplied with clear working and service instructions.

PRICES. Eddystone 1938 "All World Eight" Battery operated Superheterodyne Receiver in full tropical finish. Factory tested and ready for service. Complete with valves and three tuning units covering:—(Range 1) 13.44 to 34.6 metres. (Range 2) 27.15 to 69.2 metres. (Range 5) 240 to 573 metres. Weight in carton 38 lbs.

Price £25 0 0

Eddystone Tropical Model Speaker to match push-pull output of Receiver. Weight in carton 16 lbs.

Price £3 3 0

EXTRA TUNING UNITS CAN BE SUPPLIED FOR THE FOLLOWING WAVE RANGES AT £1 EACH:—(Range 1A) 9.5 to 23 metres. (Range 3) 63.2 to 149.6 metres. (Range 4) 112 to 287 metres. (Range 7) 800 to 2,000 metres.

E.R.A.7 FOUR BAND CHASSIS RECEIVER

With Exclusive Features for the Expert.

A wealth of practical knowledge in the design of receivers for tropical markets and long experience devoted to short wave problems form the foundation upon which the "Eddystone" special E.R.A.7 chassis receiver has been built. It has been produced to provide the discriminating user with a specialist-built instrument. Selectivity, sensitivity, quality of reproduction and performance on all wave bands including the highest frequencies will satisfy the most critical. The chassis is supplied with valves and a specially matched moving-coil loudspeaker with 12in. diaphragm.

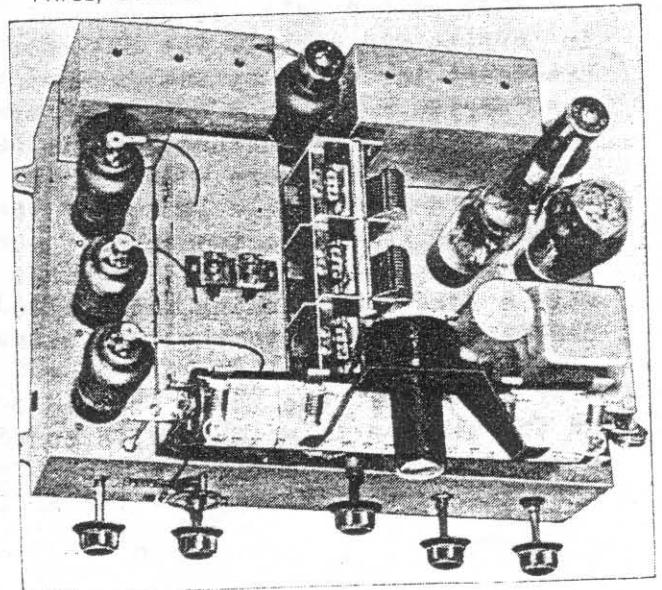
SPECIFICATION.

A 7 VALVE SUPERHETERODYNE circuit for A.C. mains 100/120 volts, 200/250 volts, 40/100 cycles, 60 watts consumption.

WAVE RANGES. Standard model 13-33 metres; 31-85 metres; 200-555 metres and 900-2,100 metres with switch selector. Export model 13-555 metres.

- ★ SPECIAL CHASSIS CONSTRUCTION. One-piece aluminium alloy die-casting which gives extreme rigidity to the assembly.
- ★ Coil box a one-piece aluminium alloy die-casting. Every coil rigidly held.
- ★ INTERMEDIATE FREQUENCY STAGE. Again enclosed in die-cast box. Band-pass circuit with Litz wound coils and air dielectric trimmers, latter positively locked so that preselected frequency of 465 k/cs. is constantly maintained.
- ★ SPECIAL TUNING DIAL. The wavechange switch rotates an illuminated cylinder 10in. long providing a separate scale for each frequency range. Calibrations in megacycles and metres for short wave, metres and Station names for medium and long waves.
- ★ Sensitivity is constant and high over entire waverange.
- ★ AUTOMATIC VOLUME CONTROL.
- ★ H.F. AMPLIFIER.
- ★ MAGIC EYE TUNING.
- ★ A SEPARATE OSCILLATOR VALVE eliminates frequency drift.
- ★ A variable control enables tone reproduction to be adjusted to suit personal tastes.
- ★ OUTPUT stage power Pentode valve giving 5 watts undistorted output.
- ★ GRAMOPHONE PICK-UP and external speaker terminals are provided.

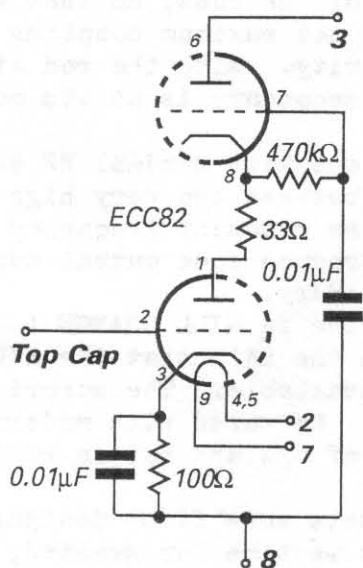
PRICE, COMPLETE WITH SPEAKER, **21 Gns.**



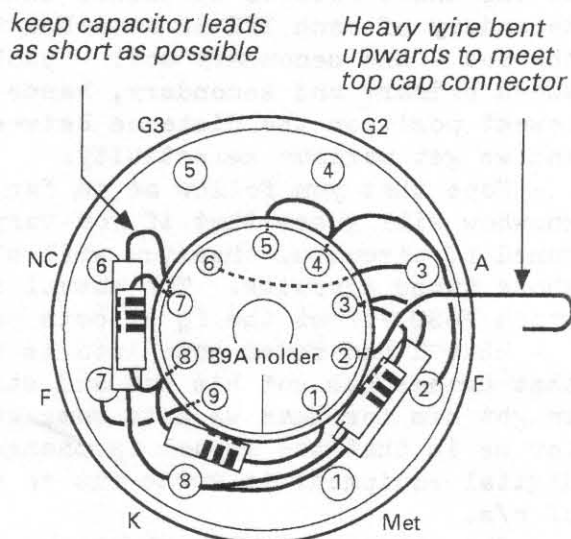
Converter Base for using an ECC82 cascode stage to replace the EF39 RF amplifier in models S358, S400, S504, S640, S659.

No wiring changes are needed in the receiver, the socket can be secured to the plug with Araldite or similar. A definite noise reduction will be found, especially on the higher frequencies.

Sent in by **Graham Leese**, who has used this circuit successfully in his S358.



Small figures = ECC82 pins
Bold = Octal Base pins



Octal Plug (pins 1,4,5,6 removed)

BOTH VALVEHOLDERS SEEN FROM ABOVE

- A number of letters have been received lately from members who want a "non-destructive" mod to perk up the performance of their older model of Eddystone receiver. In 2 cases the model concerned was the 358 series, in one case it was the 640 and in a more recent case mention was of the 740. (Hope you see this Jim !).

- The above plug-in adaptor circuit was sent in some time back by Graham Leese, it seems that this is the opportunity to use it in the N/L.

- All of the parts, including the Ecc82 (12AU7), can be bought for less than a fiver and are readily available.

- Perhaps the greatest attraction is that it is the kind of 'mod' that can be assessed directly against the original circuit simply by unplugging the adaptor and re-fitting the EF39.

- If the circuit looks familiar to some Eddystone owners then it IS, a quick glance at the schematic of your favourite 940 or EA12 will show that this is a crib from that circuit. Why did Eddystone use it for these late valve type, high performance sets ? The answer is noise, most of the internal noise in a valve set will be contributed by the early RF stages. If the 1st RF stage noise can be reduced then general noise level of the set will drop, the cascode circuit of 2 triodes does this quite effectively.

- Modern 1/2 watt resistors and polystyrene condensers are small enough to be used making the whole adaptor quite compact, so try it, and be agreeably surprised.

- - - - -

- Eddystone Variable Bandwidth System. -

-The models which have the variable bandwidth IF system, controllable from the front panel, are a well known feature of the Eddystone range. A good example is the 680, although both the 730 and the EA12 use a basically similar circuit.

- What happens is that operation of a trigger-like panel control operates a shaft and rod mechanical linkage that extends up into the IF transfos, as the shaft rotates it pushes the rod up, or down inside the IFT. The secondary of each IFT is attached to the top end of the rods, so that with the rod - and secondary coil - pushed right up we get maximum coupling between primary and secondary, hence minimum selectivity. With the rod at its lowest position the distance between primary and secondary is at its maximum and we get maximum selectivity.

- Hope that you follow me so far ? Anyway even one with minimal RF technical knowhow will guess that if you vary the distance between two very high Q tuned LC circuits, then you will slightly alter the resonant frequency of those tuned circuits. The mutual coupling will produce some mutual capacity which MUST affect the f_R of both primary and secondary.

- What I had never gone into is by what amount the f_R WILL CHANGE ! Now that Graeme has got his hot and sticky fingers on the EA12 that the XYL has bought him for Xmas we have some actual figures available. The surprise for me is that the actual f_R change is so small ! Measured with modern-day digital equipment it turns out to be in the TENS of c/s and not in HUNDREDS of c/s.

- Okay this is really cheating since when the sets were first designed and manufactured none of the super accurate DFMs that we take for granted, would have existed. I have to say that taking this into consideration my admiration for the engineers of the 50s is just so much higher than before. (I admit to being biased, okay ?).

- The actual results that Graeme has obtained on his new toy, the EA12, are tabulated below, he comments that "if you re-align the IF in one desired mode then that mode is naturally the winner" - however the manual does say that the 'N' position is recommended.

SELECTIVITY.	CENTRE FREQ:	6db BANDWIDTH.	IF O/P VOLTS.
N	99.98 Kc/s	40 c/s	1,000 mV
C.W.	99.93 "	1.27 Kc/s	700 "
S.S.B.	99.89 "	2.39 "	450 "
A.M.	99.85 "	5.24 "	130 "

- It must be emphasised that the figures produced above are not to be taken as gospel, they are representative for the model series but will naturally differ from one set to another. Also from my personal experience I have to say that results will also vary according to the ability of the person doing the job, and the equipment in use, so no prizes for any of you hot-shots who can get closer to the spec; than Graeme.

- - - - -

Valves and components available from Philip Taylor, 3 Silver Lane, Billingshurst, W. Sussex RH14 9RP :

New valves : a selection of new radio valves covering equipment made from the 1930s to the present day. Most in original maker's packing.

Electrolytics : 500v can electrolytics 16-32, 32-32, 50-50 mfd. 350v can 40-40-40 mfd, and 24-24-24 mfd. Single 500v 32 mfd. American twist lock 20-20-20 mfd 450v few only. All recent production.

Polysesster axial wire ended capacitors : .01, .047, .1 and .22 mfd, 400v

Polypropylene axial wire ended : .01. .022, .047, .1 and .22 mfd, 1000v

Mains droppers : 60 watt vertical mount, with fixing foot and one atpping band available in 500, 700 and 900 ohm values. 30 watt ditto, part vitreous enamel, available in 1100 and 1300 ohm valves.

Output transformers : multi ratio to handle 3.5 watts audio and 40mA DC, and 7 watts audio and 60mA DC.

Headphone leads : light neoprene insulation and cotton outer, 10 feet. Gimp (tinsel) conductors.

Pilot lamps : most values available, some very limited quantities.

Pots : moulded carbon, Plessey or Plessey style, all with DP switch. 1 meg with 20mm steel shaft or 45mm plastic shaft. 500K and 5K with 50mm steel shaft. All log law, suitable for audio and RF gain.

Mians connectors : 2 pin 5 amp free socket non polarised. A very few polarised available. Bulgin 3 pin in 1 amp and 5 amp sizes.

Valves and components are available for swaps. Valves wanted include DA and DO series triodes, ECC83, EL34, EM34, GZ34, KT61, KT66, KT77, KT88, PX4, PX25 and equivalents, V503 and American types 2A3, 2E5, 2G5, 5U4G/U52, 6L6G, 45, 50, 212D/E, 242D, 300B, 5692, 6550, 7027, 7591 etc. New valves of British, American or western European origin only please.

- - - - -

- The "NEW" model, THE ATLANTIC TWO.-

- Several letters from well-informed members to the effect that they have no record of, nor have they heard of this set before. Nor had I until the proof came to EUG from Ross Paton in New Zealand, he sent some photocopies taken from the original Harrods catalogue for 1928/9. The set did not even appear on what I have long considered the definitive list as supplied to me by Richard Baker. If I can get a good enough reproduction of it I shall feature it on the cover of a future N/L and as the Featured Model.

- - - - -

- The Red Rocks of Eddystone.-

- My thanks to G.P Whitlock for obtaining this book for me, entailing as it did a car trip and time spent searching the shelves in a bookshop. It is an interesting history of the Eddystone Light and well worth a read.

- - - - -

- Excessive Drift in the EC10 II. -

- This fault has been mentioned in the mail by several members just lately, things always seem to come in threes they say, well 3 letters in 3 weeks !

- The EC10 operates from either dry batteries (6 x LR20) at 9 volts or from the AC mains via a psu which provides a 9 volts supply regulated by a zener. Besides the zener in the psu the local oscillator supply is further regulated by a 6 volt zener. Despite all this the local osc; and the BFO can drift as the components age. It has to be realised that this model is now more than 30 years old ! Think of a car that had been on the go for that length of time and you will see that your EC10 deserves to have a few ailments.

- One cause that has been found in several cases has been ageing of either silver-mica condensers in the tuning circuitry, or of the associated resistors in the same stages.

- check the LO voltage supply with a good DVM and if it varies after switch on then by all means check and replace one or both of the zeners with modern equivalents, don't ignore the resistor in the feed from 9 volt line down to the 6 volt zener. It ought to be 100 ohms (R51), but these can, and do, go high. I even found one that read out at some 370 ohms. Here switching on the BFO caused a large change in LO frequency, such that the set had to be retuned each time.

- Do check out the collector decoupling resistor/condenser networks, a leaky condenser here, or a high value resistor will cause problems of gain and of stability.

- The OC171 trannies that this set uses are liable to grow internal whiskers as they age, this causes a DC leakage from collector to aluminium case, which is earthed to chassis. Try disconnecting the fourth lead, the 'screen' lead and see if stability is improved. If a replacement cannot be found - they are usually obtainable from Birkett's - then try leaving the leg diss, possibly this may cause some RF instability on range 1 so it may help out if you provide an RF path to chassis by putting a 0.01 mF poly type condenser from the diss leg of the trannie to chassis.

- If you still have problems try this, swop C49 the decoupler in the base circuit of TR3. It is a 0.01 mf and Mike says that this was definitely the cause of his LO instability, drift after switch on.

- BFO drift, can be psu or 6 volt line problems as with the LO but it has also been observed when C71 was intermittently o/c. In this stage the Tr6 is also an OC171 and the whisker problem can also arise here.

- In one EC10 there was a surprise in store for me, it was some years back but I can always recall the shock that I had when I found that the LO frequency changed up and down when ever I tapped the case. After much head scratching I found that the variable condenser block was at fault, the copper braid itself was thoroughly oxidised, had become greenish and rather frail. Fitting a new braid strap obtained from a 2 inch length of co-ax was a complete cure.

- I have also been told by one member, but not experienced this myself, of a situation where the variable condenser itself was microphonic ! A good cleaning of the contact springs and bearings, plus re-lubrication, cured this one.

- Anyway that ought to give F5 VAR (ex G3 WLX) something to be going on with, hope you cure it John.

- - - - -

- The Value of Original Documentation. -

- The recent purchase of a still boxed and unused 820 model AM/FM tuner, complete with the instruction manual and a list of Beeb AM and FM frequencies (only from Wrotham in those days), has caused Peter to consider a collection of similar models. In this case he also got the bonus of an HP agreement and a full monthly payments book !

- There is no doubt that such documentation would add another facet to the collecting of Eddystone receivers but how many exist these days ? Not so many I would guess as the saving of such ephemera for future collectors was unheard of in the 40s or 50s. Good Luck anyway Peter, let EUG know if you get anymore such gems.

- - - - -

- The Featured Model, Your Choice. -

REMEMBER, this feature is decided by your mail ! If I get several letters from members for 'X' model then that will be featured.

- - - - -

- Dealers Recommended In the N/L. -

- I seem to recall that this happened once before, several years back. A cheeky letter from a London dealer which asks that we recommend his establishment to members for repairs to their Eddystones. I have never heard of him before seeing the letter, maybe he does exist and does have a going business, maybe not - however he is not getting a mention here.

- - - - -

- SFERICS. -

- A query from one EUGer who asks whether the Eddystone type knobs on his WW II R.1132 set are original, or a later addition ? I am inclined to think the latter, my memory of this set is that it did NOT have Eddystone knobs when I saw it in use in the RAF.

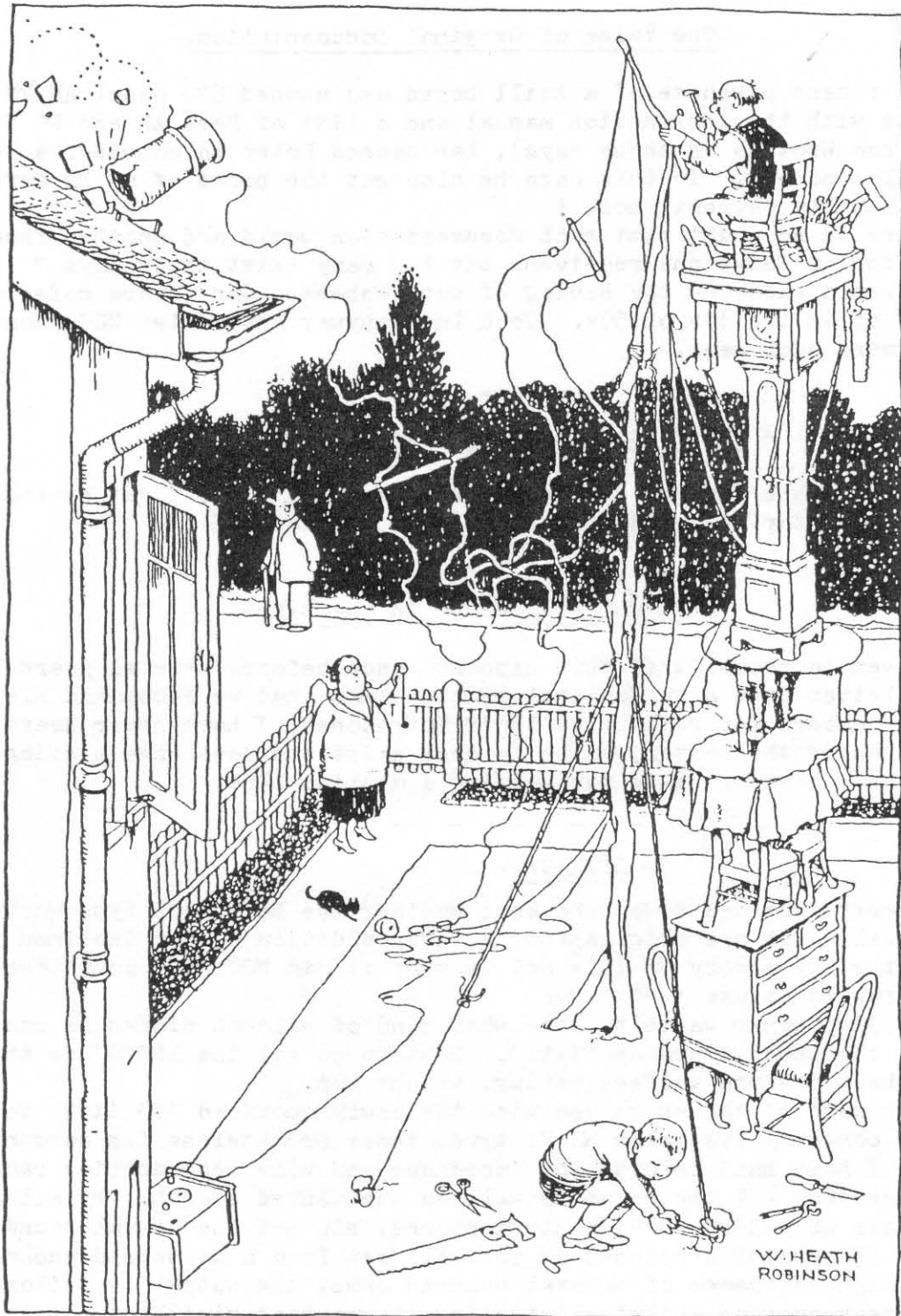
- An 830/5 owner wants to know what kind of silicon diodes he can use to replace the DD006 types as fitted. Best to go for the 1N4007 as they have the highest inverse voltage rating, at one amp.

- What kind of phones to use with the newly acquired 770 II ? Well certainly not the commonly available Hi-Fi type, these are useless for communications work as I have said before, low impedance and wide reproduction range which will reproduce all the noise as well as the wanted speech. By all means get a pair of padded earpiece Hi-Fi phones, rip out the actual sound units and fit BT type of earpieces as you will get from a household phone. These have a high impedance of several hundred ohms, the output is tailored for speech reproduction whilst eliminating the annoying sibillant hissing.

- A reminder that one can no longer rely upon the electricity board earth for radio use. It no longer goes straight to earth on your premises, but goes via the neutral lead to an earth at the nearest sub-station. This allows pickup of all your neighbours QRM - not very nice for your listening.

- The first generation of germanium transistors will be some 40 years old soon, they still work but many will have become 'lossy' and will not be giving the same gain as when they were new. It could be well worth while to replace them with 'new' Ge types when doing any restoration work, Yes they are still available 'off the shelf' from some dealers.

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ERECTING AN AERIAL

(With acknowledgements to the BBC HANDBOOK 1929)

TWO OF A KIND

In the autumn of 1928 the British Broadcasting Corporation, dignified the previous year by the grant of a Royal Charter which recognised the status achieved by the old Company, published its second yearbook, the B.B.C. Handbook 1929. A veritable *vade mecum* of the state of the art of broadcasting as it then existed, it also had a lighter side and prolific advertising. Two of these pieces are reproduced here with grateful acknowledgements.

They both reflect the preoccupation of the public with aërials. Our 'own' company, Stratton, was offering the Eddystone Safety Lead-in, complete with £100-worth of free insurance (around £5000 at 1995 values). How's that for confidence in your product!

William Heath Robinson (1872-1944), surely the doyen of British comic illustrators, also turned his hand to the subject. How many of us have ended up doing something like this in the interest of better reception? I know I have. Just look at mum dutifully holding the plumb line; and the passer-by staring in amazement... No wonder his name entered the language!

GRAEME - G3GGL

HOWEVER BAD THE STORM your wireless set is fully protected when an "EDDYSTONE" safety LEAD-IN is in use. Just push in the knob and everything is safe.

£100 FREE INSURANCE

against damage to your wireless set or property is provided with each lead-in. It is simple to fix and can be inserted in place of the ordinary tube.

“EDDYSTONE” SAFETY LEAD-IN

12"—3/6

15"—5/-

Make sure that the lead-in carries our Trade Mark.
Obtainable from the leading wireless stores.

Sole Manufacturers:
STRATTON & Co., Ltd.
Bromsgrove St., B'nam

London Service Depot:
WEBB'S RADIO ELECTRIC STORES
164 Charing Cross Road, W.C.

- Top Cap type Valves, and Leads.-

- When a set contains a valve such as the EF39 with it's top cap electrode the lead from under chassis or from IFT is usually of the screened type.
- Age is the problem here, together with the usual degree of operating heat this contributes to a decay in the quality of the insulation that was used in the screened lead. In the older sets, i.e. the 358 series, the rubber used will have gone to a mushy, gooey substance which appears to soak up humidity like a sponge. The only thing to do is to replace the length of lead in-toto.
- The domestic Tv kind of co-ax is very useful here, or at least the outer braid is. Fitting a more flexible type of plastic insulated wire into the length of braid is an easy job. The final 'new' lead can be completed with a length of heatshrink sleeving which is shrunk onto the correct length of lead to give you a really pro job.

- - - - -
- Silicone Sealants.-

- A warning from Ray that these should be used with great care on your radio/electronic gear. Many of those used for bathroom sealings can be quite corrosive when cured. The use of these on such as copper wire is disastrous as the copper just erodes away leaving a green looking slime.
- Ray further states that one test is to leave a blob of the stuff somewhere to cure, a warm atmosphere will help. If when cured there is any sign of a vinegary smell then DO NOT USE IT.
- My info is that there are some such sealants that are advertised as being suitable for use on electrical equipment, so it is a case of reading the label AND asking the supplier.

- - - - -
- Chrome Handles on a 640 ? -

- These were not original fittings for the 640 model, although many owners have drilled out the casting corner holes to fit the handles type number 608 in the Company catalogue. Since this does make your 640 more or less match other models that did have the handles fitted I consider it to be a worthwhile and acceptable mod; although here I bet that I get a few letters telling me off for advocating the drilling of holes in a front panel !

- - - - -
- Condensers as Droppers, more Comments.-

- Mention of the use of condensers as "powerless" voltage droppers in the universal type of set has caused a fair amount of correspondence here at EUG.
- The first point to be made is - of course - that the set is no longer an AC/DC or Universal model. Since mains type DC is rarely available these days this is not, in itself, a problem. The set is likely to always be on AC and if put onto DC no harm will come as the condenser will simply block the passage of current.
- Should the requisite type of resistive dropper not be available then the condenser approach may be the only way out, if you want to keep the set on the air.
- I have heard from those who have used the method happily for years with no apparent problems, others who call it a suicide method. I do have very faint memories of there being a commercial domestic model that used a condenser as a mains dropper, was it a Philips ? No doubt Ross Paton will tell me when he reads this article. I used it myself some time back when I had a very nice looking and performing domestic receiver that had burnt up it's dropper.
- There was also an article some years back in Chas Miller's Radiophile mag; which went into the method of calculating the value of condenser required, I seem to recall that whilst he did not actually advocate the method, nor did he completely pan it. If you want to know more then write to me, I am not

Condenser Droppers continued;-
going into it here as I do not think it is the done thing for Eddystone use. Droppers are obtainable, as near as can be to original items can be got from Philip Taylor and other suppliers.

- SFERICS. -

- The noise limiter on the 840A uses one of the UAF42 internal diodes and one EUGer states that by substituting a 1N914 or 1N4148 type of silicon diode for the hollow state variety, then an improvement in operation and effectiveness is achieved. It is a simple enough job to do, the snipping of the wire from pin 3 and connection of the 1N914 to chassis from the snipped off wire. (I don't know what version of 840A this member has, all of the 840 and 840A sets that I have seen have a solid state diode as N/L already, Ted.)

- Serendipity again, having bought an 888A without the usual fitted calibrator unit Dave has managed to get one at a club swop-meet, and it was a swop too ! Dave gave an 807 from his junk box for the calibrator, both sides very happy.

- With the advent of the winter and darker evenings there will be many more exotic Dx stations audible, try MW late on in the evening and see what you can hear from across the pond. They tend to use a 10 Kc/s spacing between stations as opposed to our 9 Kc/s and this means that with a bit of selectivity it is possible to winkle out that Dx from amongst the usual profusion of junk music supplying local stations.

- A good one this, a letter in the post asking plaintively, "please can you tell me what kind of plugs I need to ask for to fit my 770R receiver, just acquired it and have no gen". Not so easy as might be imagined, the very many versions of 770R used a number of different plugs and sockets, often the type of plug or socket might be the only thing that differentiates that suffix number from another. In general I believe that if the 770R did not have an integral mains lead then it will be one of the round 3 pin Bulgin types, & I understand these are still available new. The aerial is a case of suck it and see, early sets had the domestic Tv type of aerial socket, Belling-Lee I seem to recall, later Mark IIs had a BNC, one version had the so-called UHF type fitted but I only ever saw one with this.

- Very long random wire aerials are not advised with one of the first generation of trannie sets, such as the EB35. Unless an ATU is used there is a distinct possibility of getting spurious signals due to front end overload. In extreme cases an attenuator would help.

- Drift on the 640 ? Tim claims that it was cured simply by fitting the specified 6K8-G in lieu of the ECH35 that was in the set when bought. I have never heard of this CAUSING drift, unless the valve was itself faulty. And do remember that some re-trimming of RF and mixer might well be necessary if this valve is swapped, they have quite different internal electrode capacitances.

- My own find re drift on this model is that it usually happened on the first, early versions that left the factory. Later sets had a 20 Kilohm resistor fitted across the standby switch so that HT was not taken off altogether but simply reduced on standby. The last sets off the production line had the standby switch in the RF gain control line so that effectively the LO was kept at a constant operating HT (and temperature).

- Few of us have money to burn these days and when you are asked an outrageous price for an item, it may well pay to wait and ask around. In one case an EUGer was asked £85 for an early 670A, he did not buy the set and then a few months later he was able to buy an almost mint 670C at less than had been asked for the /A set.

- Mains borne, and radiated QRM, are both becoming more common as the number of devices that use electronics proliferate in the home environment. A recent

THAT MONDAY MORNING FEELING

THOSE of you who can remember the good old days of Austin-Morris, British Motor Corporation, British Leyland, and all the other titles used by the creaking motor giant of the 'sixties will remember the advice: "For goodness sake don't buy a Monday Morning Mini." This was sometimes balanced by: "Avoid a Friday Afternoon Model at all costs."

Popular folk-lore had it that cars built before lunch-time on Monday would suffer from maladjusted brakes, sloppy steering and windows that wouldn't close. "The troops haven't got their act together till after lunch." Friday afternoon was just as bad. Wiper motors upside down, headlamps shining to heaven, brake lights on all the time. "They've all got their minds on the weekend, you know. Will The Blues carry it off?" I can now reveal that extensive research has shown that the problem had its roots in the Bathtub during the late 'fifties.

Regular readers of *EUG Newsletter* will have seen reports about the maverick Eddystone 730/4 which was found to have the Noise Limiter Switch fitted upside down and a 20k resistor fitted in the S-meter bridge in place of a 27k. As if this wasn't enough the BFO never seemed to be quite right... sometimes it wouldn't start and sometimes it stopped in mid-sentence, so to speak. Very temperamental. The valve checked out 100% and swap-testing made no difference. The circuitry of the BFO is completely hidden inside the can and quite impossible to check 'on air'. So the module was removed to look inside...

It came out easily. No sign of burning, melting, or green-spot. See all the gleaming colour-codes. Mmmm. What's that pretty orange and yellow one? 330k. *THREE-THIRTY* ??? It was the screen dropper; it should have been 68k. All changed and it worked perfectly! For the first time. The only question is, was it a Monday Morning or a Friday Afternoon Set? Well I think it was a Monday Morning Set because it's a well known fact that colour-vision is poor after a wild weekend. What's all that got to do with British Leyland... ? Well, if you drive from the Bathtub down Alvechurch Road towards Redditch you come to Longbridge Lane, and if you turn right and keep going for about half a mile you come to what the denizens of Birmingham are still pleased to call "The Austin". Look no further...

GRAEME - G3GGL

from p. 21.

Mains borne QRM continued;-

letter has detailed the woes of attempting to listen on SW when there are S7-9 birdies all through the ranges up to 30 Mc/s. The cause is pretty well known to be a newly installed security system at a neighbours home however no amount of persuasion has worked on the owner, so far. Strong-arm tactics being ruled out thought has been given to a new QTH. (on the moon maybe ?).

- Similar QRM from a computer in one's own property can often be cured by screening of cables for both the computer and the Rx, a mains filter is also very helpful here.

- Spray on metallic screening, from an aerosol dispenser, can be used on the inside of the computer casing, this should be earthed to be effective.

- DIY AF Power meter for Re-alignment ? -

- Just what everybody needs, well everybody who does his own re-alignment ! It is a simple enough circuit and apart connectors needs just 3 components that can come from the junk box, or from your local friendly dealer.

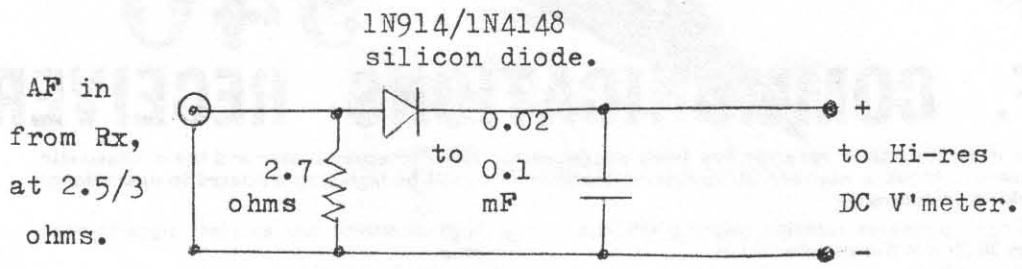
- Basically what you will have is a dummy load to match the output of your set, 2.5 ohms in this case. A single silicon diode of the 1N4148 type, plus an AF bypass condenser of approx; 0.02 mF. You will of course need a meter and here you can economise by using your Avo or whatever on a suitable voltage scale to match the output power.

- With the circuit as shown a true measure of power will be obtained by use of the formula,-

Power (watts) = 1.414 x (V+0.7)² ÷ by 2.5.

It can be approximated by using the simplified formula,-

V² / R_L + 1.414, where R_L is the output Z.



- Use connectors to suit your shack setup and your meter.

Announcing



NEW EDDYSTONE

940

H.F. COMMUNICATIONS RECEIVER

This new Eddystone receiver has been produced for the Professional user and the enthusiastic Amateur. It has a number of attractive features that will be highly appreciated in operational working including:—

- ★ Single conversion superhet covering 480 kc/s to 30 Mc/s in five-switched bands.
- ★ Two R.F. stages and two I.F. stages including phased crystal filter.
- ★ First R.F. is of cascode type resulting in excellent noise and cross modulation figures.
- ★ Precision gear drive, flywheel loaded, and an adequate degree of mechanical bandspread.
- ★ High selectivity and excellent signal-to-noise ratio.
- ★ Suitable for C.W., A.M., S.S.B., reception.
- ★ Push-pull output stage with excellent quality of reproduction.
- ★ Modern styling in two-tone grey finish, table or rack-mounting.
- ★ Suitable for operation from 110/125 and 200/250 volts 40/60 cycles, with built-in power supply and stabiliser.

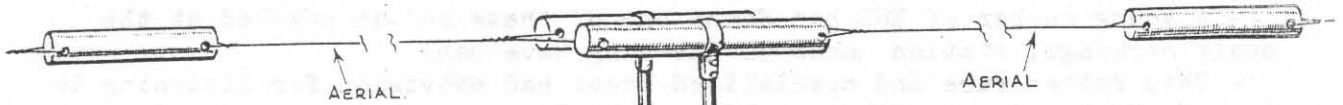
LIST PRICE **£125**



Please write for detailed Technical Specification to:

STRATTON & CO. LTD · BIRMINGHAM · 31.

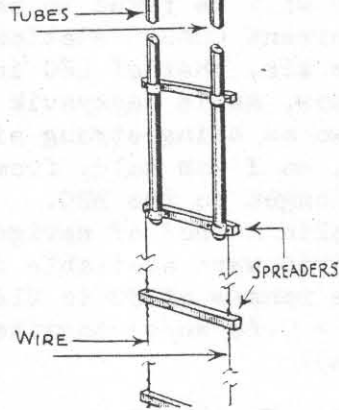
JOHNSON "Q" ANTENNA



TYPE "Q" ANTENNA SYSTEM

The Johnson "Q" antenna has achieved outstanding success in high-frequency transmitters throughout the world because of its high efficiency. The special aluminium tubing quarter-wave matching section accurately matches line and antenna impedances, and power is transferred with practically no losses. Consequently the Type "Q" will radiate a much higher percentage of input power than will the common non-matched antenna-feeder system. The result is usually a greater increase in radiated power than could be obtained by materially increasing the power of the transmitter alone, as well as effecting a corresponding saving in operating costs. To the average amateur, the Johnson "Q" affords the least expensive method of greatly increasing the signal strength of his station.

In addition to its use as a half-wave doublet, which is moderately directive broadside, additional directivity may be obtained by using the Type "Q" as a long wire harmonic radiator. The recommended harmonic radiator is one which is an odd number of half-waves long, with



the tubing section in the center. This antenna is directional broadside. Less desirable is one any number (odd or even) of half-waves long fed an odd multiple of quarter-waves from either end. The directional characteristics of this antenna depend upon its length, approaching the axis of the wire as the length is increased.

Besides its use in transmitting, the Type "Q" is an excellent receiving antenna with a very high signal to noise ratio.

20 METRE "Q" 39/6

10 METRE "Q" 26/6

5 METRE "Q" 27/6

SPECIAL 5-METRE "Q"

Designed for convenient installation with fixed-station or portable transmitters. May be mounted directly on the transmitter case, or suspended in the air with a transmission line back to the equipment. Impedances remain accurately matched in both cases. With the aid of MYCALEX-insulated fittings listed below, the change from "case mounting" to overhead suspension may be made quickly and easily.

THE JOHNSON "Q" BEAM ANTENNA.

Two of the above antennas may be used in parallel spaced 1/8th or 1/5th wave apart as a beam radiator for two wave operation. A separate pamphlet dealing with this "Q" beam is available on request.

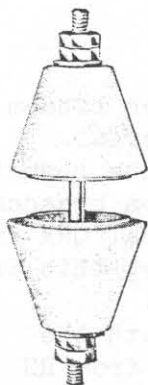


EDDYSTONE

1038. Telescopic 5.6 MC Aerial. Length can be adjusted to resonate at any frequency in the five metre band or allows additional length for reflector purposes. Duraluminium tubes, top sections telescoping.
Price 12/6



31/32. Strain insulators. Well known "Egg" pattern. Excellent for breaking guys, etc.
Small pattern ... 1/6 doz.
Heavy duty pattern 3/- doz.



EDDYSTONE

1018. Lead through insulator. Frequentite. Primarily designed for feeding RF lines through base boards, windows, etc. Lead washers are supplied to prevent breakage of cones.
Price 2/-

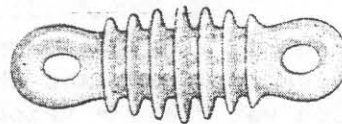
MYCALEX FITTINGS FOR JOHNSON "Q" ANTENNA

No. 35 Mounting Jack Strip. Fits No. 36 double plug strip and plugs at bottom of quarter wave section ... Price 8/-
No. 36 Double Plug Strip ... Price 4/-
No. 37 Lug Terminal Strip. Fix binding screws at bottom of quarter wave tubes ... Price 4/-



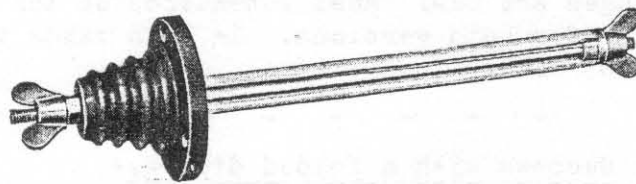
EDDYSTONE

1017. Frequentite Bar insulator. For strain or spacer purposes. Ideal for ultra short wave work. Price 4/6 doz.



EDDYSTONE

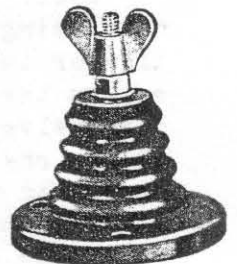
999. Aerial strain insulator. 3 1/4". Exceptionally long leakage path, highly glazed surface. Breaking strain 400lbs. Price 9d.



EDDYSTONE

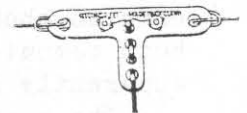
946 Low Loss Aerial Lead-In.
972 Outside insulator of special vitreous brown porcelain. The tube itself is of 1/4" diameter, high tensile glass. All metal parts heavily plated.
Pattern 956. Length of glass (behind Insulator) 5 1/2" ... Price 2/6
Pattern 972. Length of glass 11" ... Price 3/6

134. Johnson feeder spreaders. White glazed, low absorption porcelain. 2", 4" and 6" long and 1/2" x 1/2" cross section. 2" ... 6d. 4" ... 8d. 6" ... 9d.



EDDYSTONE

916. Stand off insulator. Ideal for mounting inductances, meters, etc. High quality, vitreous brown porcelain. Has hollow centre and is supplied with heavily plated metal wear ... Price 1/-



34. Belling Lee "T" strain insulator. Excellent for centre of doublet antennae. 2 1/2" long. Price 1/6

348. Bud Heavy Duty Feeder Insulator. Ideal for attaching Zepp Feeders to Antennae. In heavy glazed porcelain, 3/-

ENAMELLED COPPERWELD ANTENNA WIRE

Johnson Enamelled Copperweld Antenna Wire (steel core, copper covered) is the ideal material for transmitting doublets, directional antenna systems or any other applications where the wire must not elongate or sag. Insures constant efficiency by maintaining original length indefinitely. Combines the desirable characteristics of very low RF resistance, freedom from corrosion, with almost three times the strength of ordinary enamelled copper wire.

Price: ... 7/6 per 100ft. (pro rata).

- The 720, Yachtsman Receiver.-

- A young member of EUG has found one of these and is puzzled at the scale markings, station names on the Long Wave band.

- This rather rare and specialised model had provision for listening to the AIRMET broadcasts, then on LF, or LW. It also could be used, if one knew how, to locate one's position by use of the CONSOL transmissions again on the LF range.

- The LW scale of the 720 will be found to have the AIRMET marked as well as the names of the then current CONSOL stations. Today only the one CONSOL transmitter is still on the air, that of LEC in Stavanger Norway. Bushmills in Ireland is off the air now, as is Reykyavik in Iceland, although I can well remember these last two as being strong signals back in the -50s.

- The AIRMET signal came, so I was told, from a high power WW II transmitter that, in name at least, belonged to the BBC.

- CONSOL uses the hyperbolic method of navigation and direction finding, and special overprinted charts were available for both air and sea use.

- The 720 covers only the ranges of 80 to 214 metres (3.75 - 1.4 Mc/s) and 214 to 620 metres (1.4 - 0.48 Mc/s) together with the LW band of 900 to 2300 metres (330 - 130 Kc/s).

- SELENIUM RECTIFIERS.-

- A warning from one EUGer is that the fumes from one of these, when it is overloaded and "blows" - can be detrimental to health ! They do really pong when they finally give up and blow, the smell seems to permeate all the nearby equipment and furniture for months afterwards. In extreme cases, if you do persist in staying nearby then vomiting is very likely. YOU HAVE BEEN WARNED.

- The 680 mixer valve.-

- Early versions of this set used the 7S7 or X81M as a mixer, the hexode part being utilised as mixer and the triode left unused. Although local oscillator injection was via the triode grid. For reasons known only to themselves the Eddystone engineers decided to swop over to the much more common 6BE6 valve in later versions. Some say it was a case of supply and demand, others say that it was a case of costing, what ever the reason there is no change to the specification of the set as regards the gain or sensitivity, and component changes are few. Most schematics of the 680 will show the alternate circuitry for both versions. In both cases the local oscillator valve is an EF91/8D3/6AM6.

- Success with a folded dipole.-

- Bill reports that during the summer he has removed his various random wires and put up a tough, winter wind resistant folded dipole aerial.

- It is to the dimensions for an amateur 80 metre dipole but the results so far seem to be very good on all bands that he listens to, from broadcast down to about 20 metres. The one very useful factor is that local QRM from both computers and domestic wiring has been reduced considerably, this is apparently due to the balanced feeder system that is now in use.

- The commercial obtainable 300 ohm twin feeder is used for both the dipole proper and for the feed line. It was bought by the roll from RS and there is more left on the roll for further experiments, time permitting.

- Both the 888 and the 840A benefit from use with this type of aerial.

EDDYSTONE Communication Receivers

Type E.C.R.

We are very proud to present the Eddystone E.C.R. Communication Receiver. We believe the appearance, construction and performance will satisfy the most critical.

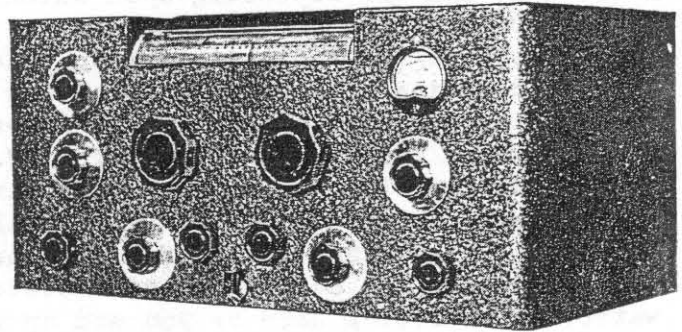
The Chassis, Coil Unit and Crystal Unit are die-cast and the most complete screening is employed everywhere. The layout is such that all leads are a minimum length. No more valve stages than necessary are employed and reduction of noise level has been an ever present thought during the design.

The Superheterodyne circuit comprises 10 valves, including Rectifier, with the following stages:—High Frequency, Mixer, Electron Coupled Oscillator, Two 465 KC's, IF's, Doubled Diode Detector, Beat Frequency Oscillator, LF Amplifier, Tetrode Output and full wave Rectifier.

Switched coils cover a waverange of 9.5 metres to 190 metres. 33 megacycles to 1.6 megacycles, divided into 4 wavebands. Electrical bandsread tuning is employed. A crystal gate is fitted with phasing condenser and variable selectivity control. Volume controls for RF and LF adjustment. An "R" meter calibrated in decibels is on the front panel. BFO control and switch and AVC on and off. The following data is given relative to the performance.

Average overall sensitivity better than 3 microvolts for 50 milliwatts audio output.

Average IF sensitivity 12 microvolts with crystal out.



Average IF sensitivity 15 microvolts with crystal in.

Dial is calibrated in Kilocycles for five ranges, and also in degrees.

Selectivity. 9 KC's at 20 db. down. 16 KC's at 40 db. down.

Output. High and Low resistance output (2,000 and 120 ohms).

Control. Radio frequency and Audio frequency gain controls. Beat frequency pitch and oscillator vernier. AVC and BFO on/off switch.

Price - £45 0 0

N.B. PRINTERS ERROR.

The data in the panel above relates to the L.P.C. instrument below and the data in the under panel relates to the E.C.R. above.

EDDYSTONE Type L.P.C.

FOR BATTERY OPERATION

The L.P.C. Receiver is of the superheterodyne type and employs eight valves. It is especially suitable for long range reception owing to its stability of performance and freedom from drift. The circuit consists of a radio frequency stage, mixer valve, electron coupled oscillator, two stage IF Amplifier working on 465 KC's, double diode triode for AVC and detection, resistance coupled LF Amplifier, beam power tetrode and electron coupled beat frequency oscillator.

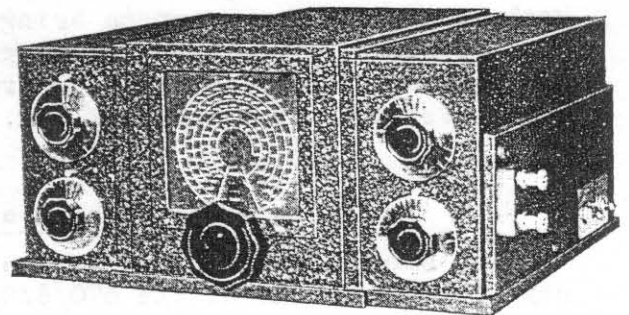
The chassis and cabinet are aluminium silicon alloy diecastings, the screening of the receiver stages is very complete so that full efficiency is secured. The important leads are as short as possible and all component parts are rigidly mounted and not merely supported in the wiring. **Signal to noise ratio has received special attention and the noise level is exceptionally low.**

Interchangeable coil blocks in die-cast screening boxes are used for wavechange, each block comprising the three tuned circuits. Tuning is carried out by a special drive employing spring loaded Tufnol gears with a reduction ratio of approximately 100:1. The drive has flywheel momentum to assist rapid searching. The standard operating range is 22,000 KC's to 530 KC's covered by five coil blocks. Additional blocks for higher and lower frequencies can be supplied.

High Tension current consumption. 16 m.amps at 135 volts.

Low Tension current consumption. 0.9 amps at 2 volts.

Average Sensitivity. Better than 7 microvolts for 50 Milliwatt output.



Overall Selectivity.

Crystal out: 6 db. down at 3.5 KC's.
20 db. " " 8 "
30 db. " " 12 "
40 db. " " 15 "
60 db. " " 21 "

Crystal in and phased:

Bandwidth is at 20 db. down .15 KC's, at 30 db. down .3 KC's.

With the aid of the selectivity control the bandwidth can be increased 6 times.

3 Watts output.

Price - £45 0 0

EXCLUSIVE OF BATTERIES.

- Changing the N78 for the 6AQ5 in the 750.-

- When, as will inevitably happen, the N78 fails or starts to fail then the owner of a 750 has got a choice between paying through the nose for a new N78, or going the cheaper, easier way and substituting a 6AQ5 output valve. The 6AQ5 is really made for this position in such a set as the 750 and this is a mod which is certainly worth-doing. The cost of an N78 being between £9 and £12 depending upon which emporium you frequent, and the 6AQ5 going for one-third of that sum.

- As soon as the audio distortion became evident on this 750 it was a case of deciding which way to go. Being recently made redundant, and the lucre being in short supply it was an easy choice, made easier when a 6AQ5 still new and boxed, was offered for £2.00 by a club member.

- A complete clean-up job was done first on the top and underside of the 750 chassis, this included scale removal and cleaning, a first time ever for this set ! The usual tools of a soft-bristled, new paint brush and a Hoover cleared up all the dust, the scale plate was carefully washed in warm soapy water, no scrubbing here or you end up with a plain unmarked plate.

- It was planned to do as little in the way of electrical wiring mods as possible, and what was done had to allow of the mod being reversed at a future date if need be. Who knows somebody might discover a mountain of N78s in some long lost MoD warehouse !!! Two a penny or something like that.

- The only new component that would be required was a kathode resistor, 330 ohms in place of the 150 ohms as fitted. A 1 watt rating was adequate, and this came from the junk box.

- There are minor differences in the pin-out of these two valves, only the wiring to pins 6 and 7 needs to be moved about. The 150 ohm was removed from pin 2, the kathode pin, whilst it was out of the way the wiring to pins 6 & 7 was crossed over and soldered in place. Now the new 330 ohm resistor was wired from pin 2 to chassis. I double checked the work done against a sketch prepared beforehand, of both the original and the new layout. All was okay and the 750 was powered up, there was a distinct lack of bass in the signal, and I spotted the fact that no by-pass electrolytic had ever been used across the kathode resistor of the set, not an oversight as some might think, this was by design. A 25mF rated at 25 volts D.C was soldered across the 330 ohms resistor and all was back to normal. Some electrode voltage checks were made and all seemed to be within the valves spec; - the levels were noted on the schematic for future reference.

- From past experience it seems that the omission of a condenser in the kathode circuit was meant to bring in a degree of negative feedback, to enhance the already wide reproduction range of the output stage, with the higher value of resistor this balance was destroyed and hence the need for the 25/25 cap; which also came from the junk box.

- - - - -
- AC/DC Models, and Isolating Transfos.-

- For safety reasons, and for possible reduction of mains borne QRM, it pays to operate one of the 670/840/870 series from a double-wound isolating transformer. Since many of these also provide a step-down ratio of 2:1 to provide a 120 volts output then it does make sense to use this and to run the set from it's alternative 120 volt tapping.

- By so-doing you eliminate the wasted power burnt up as heat in the wire-wound voltage dropper resistor.

- Whereas the consumption on the 230 volt tapping of a 670A is about 38 watts all-in, when used on the 110 tapping the consumption drops to about half of that figure ! And yes, the fact that UK mains are now nominally 230 does mean that our 1950s sets are once more back on the correct supply volts.

- The loss that may be noticed by those of us in cold shacks may be that the shack takes a bit longer to warm up when the set is used on the 110 tap, or 120 as the case may be.

- The iso-transfo may of low wattage type, many rated at 50 watt are on the market, they are comfortably over-rated. Some toroid types on the surplus

Iso-Transfos continued,-
market are rated at 25/30 watts and they are ideal, small in size and potted in epoxy. Whilst this is only a "by-product" of the use of such a transfo the user will find that many of the "birdies" that come into the receiver via the mains supply will have disappeared completely or at the very least have been considerably reduced in strength. This is of course due to the fact that whilst the transfo is efficient at transferring 50 c/s it is much less so at transferring the higher frequencies constituting the QRM signals.

- - - - -
- Replacement Diodes for those EC and EB series PSUs.-

- When the day does finally arrive that your type 924 psu rectifier gives up the ghost then do not despair ! A very simple operation will put your psu back on line and your receiver back on the air.

- The full wave type as used can be left in place and two simple silicon diodes of the '1N' type can be wired in. They can be tucked out of sight if you are a real stickler for original looks. The best to use are the 1N4004 or 1N4007 types and these cost just pennies from any Tandy store, get the polarity correct of course, the ends with the band on go to the electrolytic positive whilst the unbanded ends go to the ends of the transfo secondary.

- The 9 volt zener fitted in this psu can also be a source of trouble, as it ages. Leave the original in-situ and diss the wires, solder in a new Zener with a rating of from 400 mA to 1 amp, again check the polarity. This too may be bought from your friendly, local Tandy shop.

- - - - -
- FREE ADS for EUGers.-

- These do work fine, if you follow the guidelines, MY problems come when the sender does not supply either a contact phone number or his name and address ! I have one such here at present, the offer is for an 840A receiver in good nick, with instruction booklet and speaker (cat; number 688) all for the price of £50, the problem is that he is totally anonymous and the post mark is - courtesy of Royal Mail - just a black blob ! Write in please if you see this, let me have the name and number, alternatively call Peter Lepino as he might take it off your hands pronto. Thanks.

- - - - -
- 640 Frequency Jumping.-

- With a name like Christie it ought to be frequency running surely ?

- Christie says that when the problem began the set had been unused for almost a month, in midsummer, whilst he was abroad. With any slight touch of the 640 case or vibration of the table, the frequency jumped about and the station needed to be retuned.

- Lifting the hinged lid and a little judicious tapping around with the end of a Bic pen showed that the most sensitive area was in the vicinity of the Bandspread tuning gang. There was nothing for it but to remove the 640 from it's case, the first time in about 5 years. The last time had been for a duff condenser in the output stage.

- When the chassis was out on the bench a general de-dusting was undertaken prior to seeking out the actual fault. It is always easier to work on a clean chassis.

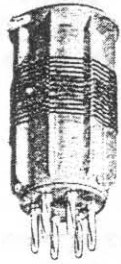
- The chassis was then examined and it could be seen that the braiding used to earth the bandspread gang to the chassis was frayed and badly corroded at the chassis end. Some new braid was procured by stripping a length of co-ax, this was cut to size and both ends were tinned with high-melting point solder, a 25 watt minimum iron is needed here as much of the applied heat will flow away along the braid, same goes when the iron is applied to the chassis.

- With the new braid in place the fault had completely disappeared but as the set was out it was decided to re-lubricate the tuning gangs with 'moly' grease, when boxed up the 640 performed as new.

COILS AND COIL FORMERS

EDDYSTONE LOW LOSS INTERCHANGEABLE COILS.

COVERING 9 METRES to 2,000 METRES.



Type	Metres	Inductance	Price
BB	9-14	0.50 μ H.	2/9
LB	12-26	1.08 μ H.	2/9
Y	22-47	3.62 μ H.	2/9
R	41-94	14.24 μ H.	2/9
W	76-170	45.0 μ H.	3/3
P	150-325	0.188 mH.	3/6
G	260-510	0.420 mH.	3/6
BR	490-1000	1.90 mH.	4/6
CY	1000-2000	6.98 mH.	4/6

Using D.L.-9 high frequency formers, matched inductances, with helically slotted pins to ensure full surface contact. The approximate wave-ranges are for a 160 m.mfd. tuning condenser.

SIX PIN THREE WINDING. Cat. No. 959.

Type	Metres	Inductance	Price
6 BB	9-14	0.51 μ H.	3/3
6 LB	12-26	1.07 μ H.	3/3
6 Y	22-47	3.62 μ H.	3/3
6 R	41-94	14.13 μ H.	3/3
6 W	76-170	45.0 μ H.	3/9
6 P	150-325	0.188 mH.	4/6
6 C	260-510	0.428 mH.	4/6
6 BR	490-1000	1.53 mH.	5/-
6 CY	1000-2000	7.05 mH.	5/-

SIX PIN COIL BASES for Cat. No. 959 Coils.

For above baseboard wiring. D.L.-9 insulation, low self capacity, one piece sockets, positive electrical contact.

Cat. No. 969. Price 2/3

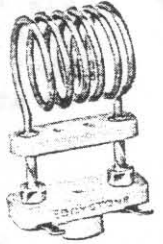
For under baseboard wiring. D.L.-9 insulation with special ribs to reduce leakage between sockets

Cat. No. 964. Price 1/3

The four-pin coils, Cat. No. 932, have standard valve-holder fittings.

EDDYSTONE ULTRA S.W. INTERCHANGEABLE COILS.

These coils are wound with 14 gauge high conductivity electrolytic copper wire and are heavily silver plated. The ends act as the actual plugs and the coil is mounted on a Frequentite strip. A separate Frequentite base with silver plated sockets provides easy and efficient coil changing. A 4 turn coil covers 4-6 metres combined with the 3 turn as aerial coupling. The 6 and 8 turn coils cover 6-8 and 8-10 metres combined with the 4 turn as coupling coil. The mean diameter of the coils is $\frac{1}{2}$ in. Cat. No. 1050.



3 turns Inductance	0.10 μ H.	Price	1/6
4 turns Inductance	0.25 μ H.	Price	1/6
5 turns Inductance	0.38 μ H.	Price	1/7
6 turns Inductance	0.46 μ H.	Price	1/8
8 turns Inductance	0.77 μ H.	Price	1/10
FREQUENTITE BASE for above.	Cat. No. 1051.	Price	1/-

EDDYSTONE S.W. COIL FORMERS

D.L.-9 DIELECTRIC.

These coil formers have 8 ribs with an outside diameter $1\frac{1}{2}$ in., winding space is $2\frac{1}{2}$ in. The threaded formers carry 14 threads to the inch. They are identical formers as used for "EDDYSTONE" coils. The bases on these formers are detachable for easy wiring.

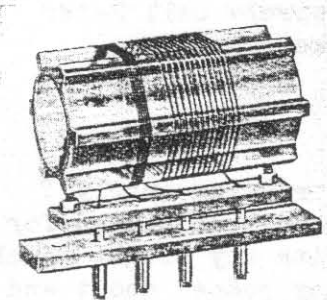


935

Cat. No. 935.	4-pin, plain	Price	2/-
Cat. No. 936.	4-pin, threaded	Price	2/3
Cat. No. 1002.	6-pin, plain	Price	2/3
Cat. No. 1003.	6-pin, threaded	Price	2/6

WEBB'S APEX ULTRA LOW-LOSS COILS AND COIL FORMERS

Manufactured in genuine Trolitul by DENCO, giving exceptional electrical properties at ultra high frequencies, these coils and formers give scope for the design of receivers to cover from $2\frac{1}{2}$ to 40 metres. Ideal for five metre work, see comparative table of Trolitul and other material. Coils available in two windings: Type A for reacting detector circuits, Type B for H.F. transformer.



Coil Formers only	1/-
Coil Formers, complete with sub-base	2/-
Mounting Base, with four resilient type sockets	1/-
Coils for all bands, $2\frac{1}{2}$ to 40 metres, Types A or B, all types	3/-

COMPARISON OF TROLITUL WITH OTHER MATERIALS.

Material	Dielectric constant	Loss Factor 60 Mc.	Loss Factor 10 Mc.
Quartz	4.7	1.1	1.1
Mica	7.0	1.6	1.6
Frequentite	5.9	5.3	5.5
Trolitul	2.2	7.0	5.8
Ebonite	3.0	53	56
Porcelain	5.6	90	63
Bakelite	2.8	260	220
Celluloid	3.3	—	480

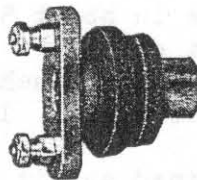
HIGH FREQUENCY CHOKES

SHORT WAVE H.F. CHOKES.



The "EDDYSTONE" patented low loss end connection as described above is also used on these chokes. D.L.-9 formers with four honeycomb wound coils spaced apart. Have very low self-capacity and are quite free from resonant peaks over wave range. Cat. No. 1010. D.C. resistance 22 ohms. Inductance 1.25 millihenries. 5-180 metres ... Price 2/-
Cat. No. 1022. D.C. resistance 10 ohms. Inductance 1.5 millihenries. Heavy duty for transmitters to carry 250 m/amps. 5-180 metres. Price 3/-

ALL WAVE H.F. CHOKE. EDDYSTONE.



An All Wave Choke of compact size with terminal connections. Low loss D.L.-9 former with two section honeycomb wound coils. One, screw fixing to baseboard or chassis. Wave-range 12.5 to 2,000 metres. Self-capacity 2.4 m.mfd. Inductance 17.9 millihenries, D.C. resistance 60 ohms. Cat. No. 1066 ... Price 2/-

ULTRA SHORT WAVE H.F. CHOKE.



This Choke has the "EDDYSTONE" patented end connection, sound anchorage for winding, which is not disturbed when using the wire ends for mounting. No undesirable metal end cap or shorted loop in the field of the choke. Single layer space wound on D.L.-9 former, exceedingly low self-capacity. Cat. No. 1011. D.C. resistance 1.3 ohms. Inductance 5.6 microhenries. 2.5-12 metres ... Price 1/3

- The Featured Model, EB35 III / STATESMAN.-

- Called the Statesman on the front panel, and marked EB35 III on the dial glass, this was the last in the series of this model.

- It marked a complete change over in design policy too since it used a FET front end and an I.C type TBA570 for the IF/Det/AVC stages. What is even more of a difference is that it has a negative chassis earth in lieu of the positive earth circuitry of the earlier version of EB35.

- Frequency coverage is still as per the other versions, i.e. from 150 Kc/s up to 22 Mc/s plus the full VHF/FM band of 88 to 108 Mc/s.

- Whilst the sensitivity figures quoted, and the selectivity values given, are much as for the early sets any user of this version may notice that performance seems noticeably better on the SW ranges, also on the VHF band where gain at the top end is definitely up on the "35 II" - this version was struggling a bit over and above 100 Mc/s.

- Like the others this set has the usual low level audio output for a tape feed, plus the ability for the AF stages alone to be used to feed a low level input to the sets speaker.

- If you are already familiar with the early EB35s then the exterior will seem no different, apart the phones jack on the front panel and the AFC switch for use on VHF. Looking inside will show some big differences, there is just the one PCB here, all mounted on the underside for the RF and IF stages of the AM mode, and the separate VHF tuner plus the tuning gang on the top of the PCB.

- This is - as mentioned above - a positive earthed chassis and so the PSU whilst looking identical to the PSU for the early negative chassis sets, is in fact different. The PSU for mains use of the EB35, EB35A, EB35 II, was catalogue number 924, this one is the 924A. The PSU for operation of the early sets from 24 volts supply was the 945, this one is the 945A. If so desired the set can be operated from a 9 volts battery supply using the battery box which contains 6 x R20 or 'D' type cells.

- A total of 5 transistors, 13 diodes and 1 I.C are used in the AM line-up of this set, whilst on FM the tuner contains 3 more transistors and 1 diode. All these semicons are still available on the market !

- A block schematic is shown overleaf, manuals for this model are still obtainable from EUG c/o Eddystone Radio for £3 which includes p&p.

- - - - -

** QUICK SERVICE FOR TECHNICAL QUERIES ONLY. **

- IF YOU HAVE A TECHNICAL QUERY FOR ME - TED - THEN TRY WRITING TO ME DIRECT. EDDYSTONE RADIO JUST CANNOT PROVIDE YOU WITH A RETURN OF POST REPLY, THEY HAVE A BUSINESS TO RUN AND THAT MUST COME FIRST !

- IF YOU SEND YOUR QUERY TO THE FOLLOWING ADDRESS, MARKED EUG, THEN IT WILL BE WITH ME WITHIN A FEW DAYS. MY REPLY WILL GO OFF WITHIN 48 HOURS. THIS MUST ONLY BE FOR TECH: QUERIES, NO SUBS: ADS ARE OKAY TOO.

- Write to;-

Jim Murphy, E.U.G.
63 Wrose Rd;
Bradford.
West Yorks; BD2 1LN.

- - - - -

The Patterned Model, EB-3 III / STATESMAN

Called the statement on the front panel, and marked EB-3 III on the
case glass, this was the last in the series of this model.
It carried a complete change over being policy top line it used
a VHF front end and an I.F. type TBA 570 and TBA 570. This
is even more a difference in that it has a negative channel which is
and of the early circuitry of the earlier version of EB-3.

A frequency converter is still as the other version, A.S. 200-100
Kc/m up to a base the full VHF band of 8 to 100 Mc.
While the sensitivity figures under
given, and for the early sets only, the early sets may notice
that they were noticeably better than the later sets on the TV
band and the 40 and 40 and above 40 Mc.

face with the old sets, the early sets were not as good as
low level. In fact, the early sets were not as good as
seen and the changes that are on the early sets were not as
and it is not as good as the later sets, and the early sets were
- This is a -
to be used in the early sets, and the early sets were not as
is in fact different. The TV set was not as good as the
the early sets from the early sets, and the early sets were not
so heated the set and the early sets were not as good as
battery box which contains a 400 m. A.S. 200-100

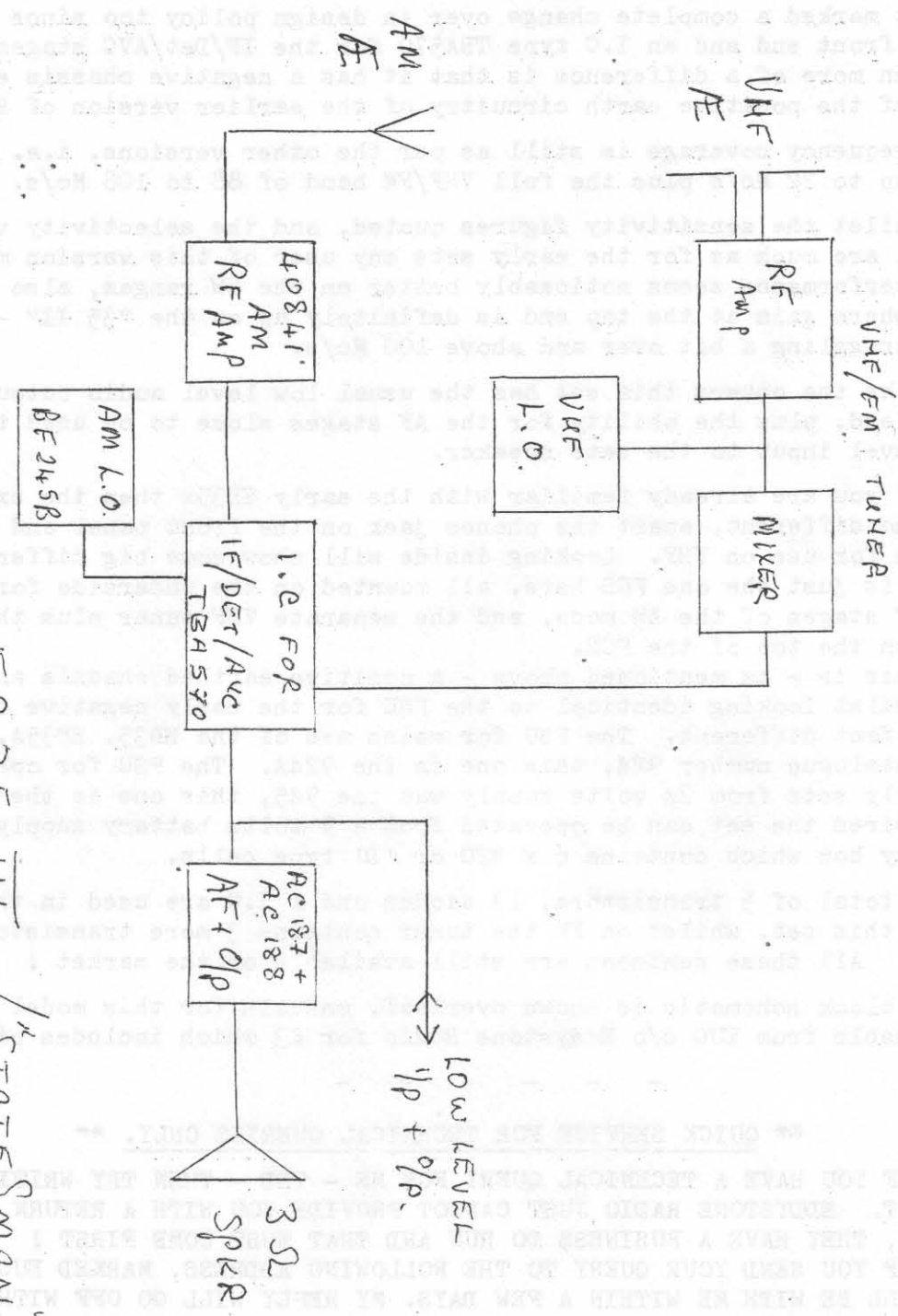
- A total of 2 transistors
up of this set, which is the same as the transistor set
diodes. All these transistors are the same.

- A block diagram of the
diagram from the TV set.
- IF YOU HAVE A TECHNICAL QUERY OR
DIRECT, STORE RADIO SETS ONLY WITH A RETURN
REFRY, THEY HAVE A BUSINESS SO BE AND THAT
- IF YOU SEND YOUR QUERY TO THE FOLLOWING
IT WILL BE WITHIN A FEW DAYS. WE WILL TRY TO
SOLVE. THIS MUST ONLY BE FOR TECHNICAL, NO
- While you -

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- While you -

Jim Murphy, E.I.C.
63 West 5th
Bradford
New York 100 116

EB 35 III / STATESMAN



- Propagation. -

- A request from one member to give a mention to the fact that the onset of the darker evenings means that a lot of those signals you are accustomed to hearing on the higher frequency bands will have QSYed to their Winter frequencies, lower down in the range. Be it a Megawatt or a mere Watt signals will tend to propagate better on these lower frequencies, 6, 7, 9, 11 Mc/s will all be full these days. English is used at some time during the 24 hours by almost all SW Broadcasters, and most stations will send you a Program Schedule if you ask them.

- Earthing. -

- A letter from Ian asking why I always say that the supply mains earth, as on the traditional 13 amp; socket, is useless for RF use ?

- Well simply because it is USELESS for RF ! The new method means that your earth pin is usually the same as your neutral and that your only connection to real earth is at the electricity sub-station. This could be up to a $\frac{1}{4}$ mile from your QTH, hardly a low resistance earth system is it ?

- It means that this commoned earth line will be a direct metallic conduit for all the QRM that is produced in the homes of your neighbours. It also means that a fault on the system can mean that your equipment will be damaged if there is a fault in a neighbours installation.

- Anything from spikes caused by thermostats, to computer hash will have a direct entry into your shack, thence into your receiver.

- This is why it is always recommended that for reception a good separate ground earth be used. A copper earth rod can be bought, try the larger DIY stores. If this is dug into the ground of the garden, close to the outside house wall, then connected by as short a lead as practicable, into your shack - VOILA ! A good RF earth, both protection from electrical faults and a good help towards the elimination of domestic QRM. The lowering in the received noise will be a surprise if you have previously used the mains earth.

- Noisy Trees. -

- Honest Injun, it was some time before Pete associated both trees and wind with his noise problems. He had first noticed the noise when using his main station receiver, a 940. Putting on his standby a Lowe 225 he then found the same QRM and had to assume that it was not his sets.

- Matters came to a head when his XYL remarked that he only seemed to moan about noise on the radio when it was wet and windy outside ! Sure enough he had to admit that she was correct. When next it happened he went out to watch from the garden, it was easy to see that the aerial wire was swaying into contact with the branches of the pear tree. Turning up the volume he opened the shack window and could see that the noise coincided with this tree/aerial contact.

- He conducted a test whereby he disconnected the aerial from the 940, connected a high resistance ohms range meter from aerial to earth. This showed actual readings each time that the aerial made contact with the tree branches.

- It was a weekend job to take down the aerial, the so-called "insulation" was definitely leaky. It had been up for a number of years and had visibly deteriorated in that time. The new aerial was made from wire insulated for mains voltage use, multi stranded - as opposed to the cheap "aerial" wire he had previously used. The QRM problem seems to have gone away and Pete has had the good grace to buy his XYL some choccies !

- FREE MEMBERS ADVERTS. -

- ANYTHING RADIO RELATED - BUT PREFERABLY WITH EDDYSTONE CONNECTIONS.-
- Wanted, by Peter Lepino, any of the following models 960, EB35, EC10, 820, 870A, and any model of diecast speaker. Also Clarke & Smith school radio receivers, wartime utility sets, Camper & Nicholson badged sets as made for them by Eddystone. Also want EM34, EC10 II, EY20, EB36, EB37, 31A, dead or alive, complete or for spares. Telephone Surrey, 01374-128170 or Fax 01372-454381 anytime.
- Wanted, Replacement meter for following valve testers,-
 - AVO Valve characteristic meter &
 - AVO Transconductance analyser Mark 4.
 - Product detector unit for Eddystone 880 and info on source for a suitable frequency meter unit for digital readout on a 680X.
 Please write to Ray Devereux, Daniels Rd; Kingsdown RD1, Timaru, New Zealand.
- Wanted to buy, Model EC10 II, please write to Gary McSweeney, GI4 CFQ, 109 Twaddell Avenue, Belfast, BT13 3LG, N.Ireland.
- Sale of an EC10 and a spare cabinet, please write to Wyn Mainwaring, GW8AWT, Tyle Bach, Maenordeilo, Llandeilo, Dyfed, SA19 7BA.
- EUG still wants to get info on the model 720 and the EY11, both sets called the "Yachtsman", former a valve type the latter a semicon model. Please contact EUG if you can help.

- ENDIT. -

- That is it for your Xmas issue. Maybe you will notice more period ads in this issue, two reasons are firstly that they are liked and often asked for by members in their mail to EUG. Secondly I thought that they would add a little nostalgia to what is - after all - a nostalgic season for everybody. My thanks and the thanks of all EUG members must go to all the Eddystone staff who have helped out with the newsletter this last year, Thanks Pat and Friends.

- You have your Xmas supplement with this issue, the story of the four lighthouses named Eddystone, thanks to Graeme, G3 GGL, for his help in locating and providing the article, thanks too must go to G.P Whitlock who supplied the Book which we now have, "The Red Rocks of Eddystone".

- Have a good time over the hols, don't eat too much, spend your time listening out instead.

73,
Ted.