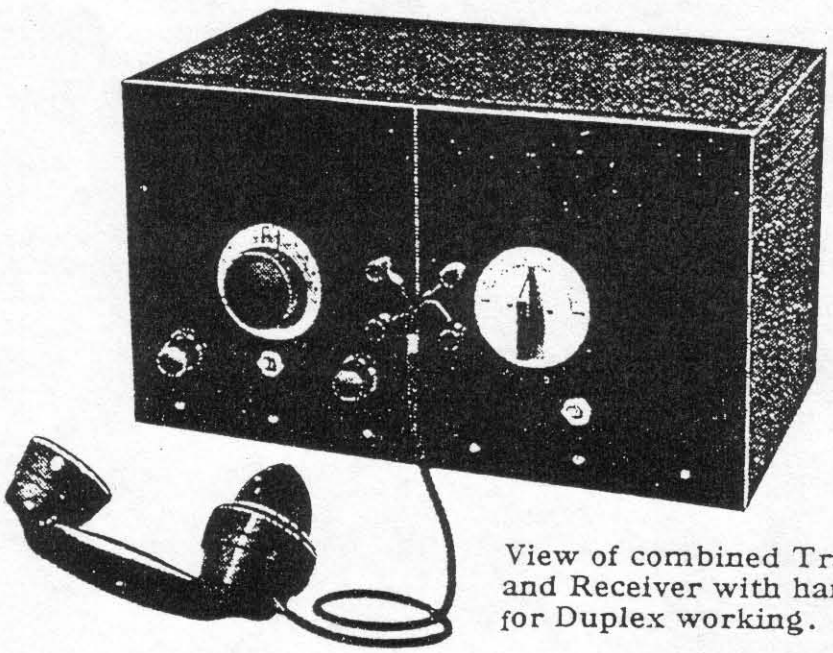
38

Eddystone User Group Newsletter

Issue No: 38 August 1996

Featured Model:
1938 Ultra Short Wave Radio Telephone



View of combined Transmitter and Receiver with handset ready for Duplex working.

*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 Graeme Wormald, G3GGL
15 Sabrina Drive,
Bewdley,
Worcs, DY12 2RJ
Tel:01299 403372

This is issue 38 of the newsletter and is the second of six issues for the year 1996/97. If you join after this issue you will get back issues 37 and 38 plus the next issue No 39 up to issue No 42. 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. Contact Graeme Wormald G3GGL whose address is on the front cover.

Subscription renewals

This really is the last time that we will send out the newsletter to those who have NOT renewed their subscriptions. To check to see if our records show you as not having renewed, look at the bottom of the address label, if the word renewal is printed there then we consider you not to have renewed. (assuming of course that you have not renewed in the past couple weeks of course, in which case do not worry about it. Please only renew one year at a time, our system makes it difficult for us to remember that you have subscribed for future years)

New address for Eddystone Works.

For the record the following is the new address for the Eddystone Works, although please DO NOT contact us for Eddystone User Group activities, PLEASE route all requests through Graeme Wormald

Eddystone Radio Limited
Unit 8/9
Berkdale Avenue
Heeley Road
Selly Oak
Birmingham
B29 6UB

Tel 0121 471 2600
Fax 0121 471 4200

Eddystone Museum

The museum has grown with the move as more recent out of production sets came to light. Graeme has made a good job of keeping it all together in its new room, but a lot of work needs to be done, arranging, cataloguing and sorting the sets and archives. Graeme might appreciate some help from Midland's based EUG members, to make this a museum we could open on a limited and pre-appointment basis. If this sort of activity is of interest to you contact Graeme on the address shown on the front cover.

- Issue 38.-

- Another issue, and I hope that those members who had delayed sending in their subs have finally got with it, otherwise you will not be seeing this issue ! Seriously though late subs DO make much more work for those who deal with the admin side of E.U.G.

- Since there has been quite a bit of favourable mail on the items that I have included from the early Eddystone Short Wave Manual series I am going over board this time in an attempt to satisfy those members who have had some queries re the early sets made by Strattons/Eddystone. Hope that some of you will not consider that I have put too much emphasis on the '30s era.

- It must be every EUGers dream, walk into a junk shop and mooch about, then come upon an Eddystone "All Wave" model, buy it, get it home, and then find that it is complete and almost mint. Oh yes it does sometimes happen just like that. Recently an EUGer did exactly as described above, and he has plans for getting the set working again, so the page of circuits for battery eliminators are for YOU, John Struthers !

- Several members who are running these early models say that they find the best way to get the required HT is from series connected PP9 type batteries, Ian tells me that his are still delivering the required HT after a year of operation with his Kilo-4 receiver that is used several evenings a week. The LT comes from a 6 volt motor bike battery with exposed bus bars. He uses one 2 volt cell at a time for so many hours then the next cell, and then the third one, then he gets the battery recharged and starts over again.

- Featured Model ? well an unusual one this time around. It comes from the Eddystone Short Wave Manual (hereinafter known as ESWM) number 3 of 1938. I make no excuses for presenting it as it was in the manual, in full. It would be a very good project for an EUGer to produce a working replica, the actual 'flea-power' output would enable it to be used on the 'no-licence' 49 Mc/s band, come on who will be first ?

- CT3AQ, the Eddystone Radio located on Madeira Island back in 1932 is an interesting station, but just who was the operator ? This is another list of current SW stations that were on the air in those early wireless days, the list comes from Number 1 of the ESWM.

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- Eddystone Airband Equipment ? -

- Well no, not quite. The contribution from Graeme this month is quite an evocative one but it does lead me on to the pictures of Eddystone wireless equipment in use at the Base station of the British Arctic Air Route expedition and the station of the Oxford University Expedition in British Guiana.

- Several other expeditions are mentioned below the pictures and I also know that a 1930s expedition to Everest by the Oxford University Mountaineering Club used Eddystone VHF equipment for communications between the various Camps. They did get about a bit did Eddystone ! Another item from the ESWM number 1 of 1932.

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- Open Wire Feeders versus Co-ax.-

- It has always been known that well matched open wire feeders give much lower transfer losses than co-ax feeder - IF MATCHED PROPERLY AT BOTH ENDS.

- Prior to the widespread use of co-ax, around the start of WW II, open wire feeders were always featured in magazine and book articles. Strattons brought out several versions of their insulated 'Crossfeeder' separator, this was usually advertised as being made from 'frequentite', an early form of plastic.

- The general idea was that the transpositon of the feeder wires by use of these separators allowed the elimination of local QRM pick-up and the fairly wide spacing of the feed wires gave a very low mutual capacity, with

the resonant type of dipole aerial that was used the signal pickup on the required band was considerably enhanced. I often made such aerials in the late 40s and early 50s for my own use. Comparison with a simple long-wire type of aerial often gave me as much as 10 dbs more signal with the dipole and open feeders configuration.

- There was always the problem of bringing the twin feed wires into the shack but I soon resolved that by drilling - carefully - two 2 BA holes in the window pane at the requisite spacing. The window glass was the ideal low-loss insulator after all. Two lengths of 2BA screwed rod and the matching nuts and washers did the job.

- If you are one of those who have a preferred SW band, say 40m amateur band, or the 8 Mc/s utility band, then you can cut a dipole, preferably a folded dipole, to your band, fit it up with open feeders and enjoy the new signals that you will pull in. And yes, these aerials will work on harmonics of the resonant frequency, just try them. Most of the 30s, 40s, and 50s sets made by Eddystone have the required twin feeder aerial inputs.

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- BBC - Caversham Park. -

- A letter from one EUGer who used to work at the BBC Monitoring Station at Caversham Park. He has in his possession an EB36A and mentions the 600 ohm audio output. This was of course a standard 'line' value as used by the BBC and the Post Office in those days, also by the RAF whilst I was in !

- As an engineer with the POED in the 50s I well remember the many hours spent balancing and equalising ordinary lines for 'audio' use. It was a time-consuming task but the feeling when you got a line equalised so that you had a flat response over the required bandwidth was one of contentment.

- Ian goes on to mention the 958, and confirms the problems associated with the interconnections in that set, when used in a salt spray and sea air environment. I have seen a few that appeared to be completely unaffected, sea air and salt having had little or no effect at all on the polythene of the mini-coax that is used. Unfortunately I have also had to work on many 958s that needed all the interconnecting mini coax to be replaced, as well as much cleaning of the connecting strips. I heard of one that had been recovered from a sunken trawler in Grimsby, 2 days in the water and after a good soak in clean soapy water then a flush out the set was dried out for several days in a hot airing cupboard. It worked but needed to be stripped completely for cleaning and THEN it went into use at home - several years on it is still working okay !

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- Setting your Sig Gen Accurately.-

- Ian mentions that one way to set your ancient analogue sig gen to the exact required frequency for re-alignment purposes is to buy one of those cheapo modern digital readout receivers, then use this to set your genny to the required frequency. Much cheaper than buying an expensive DFM and yet perfectly adequate for realignment jobs on analogue sets of the 50s.

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- Spares, and Centre Electronics. -

- Chas Cook, G3OTH mentions that he has had excellent service from Howard Turner of Centre Electronics, who has been able to provide Chas with a number of small parts that he had need of for his current refurbishment project. The info on Centre Electronics will be found in the last issue of your News letter so look it up.

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SHORT WAVE AERIALS

An efficient short wave aerial should have the following characteristics :—

(*a*) Good pick-up.
(*b*) High signal to noise ratio.
(*c*) Resonate on certain desired frequencies and be semi-aperiodic on other frequencies.
(*d*) Its impedance must be matched to the input impedance of the receiver.

PICK-UP.

The first condition is easily attainable provided high conductivity copper wire is used in the installation and the aerial is erected in a position where dielectric losses are at a minimum, *i.e.*, well away from buildings and trees and particularly metal objects, such as drainpipes, gutters, metal roofs, and telephone or power lines. Since the current induced in an aerial is directly proportional to the effective height of the latter it is essential to erect the aerial as high as circumstances permit.

HIGH SIGNAL/NOISE RATIO.

The signal to noise ratio is one of the most important factors to be considered in the design of an aerial. Due to thermal agitation, shot effect and Johnson noise, there is always a considerable amount of noise present in a radio receiver, and it is a problem to reduce this to a minimum. It is in the first stage that these effects are troublesome since the noise level developed is amplified by each succeeding valve. Therefore, no radio signal of less intensity than this noise level will be reproduced in the loud speaker and if the strength of the weak signals can be increased *before* they reach the receiver input then many more stations will be heard.

In practice the strength of the weak signals is increased by the use of resonant aerials, and the man-made static present in densely populated areas is reduced by using transposed lead-in wires.

Figure 1 shows the detector input of a radio receiver during a period of short wave listening. The set is being used in a densely populated area where the interference noise is high, approximately 30 db, above the noise level of the receiver. A weak station giving 20 db input is therefore not heard in the speaker since it is 10 db below the level of the interference.

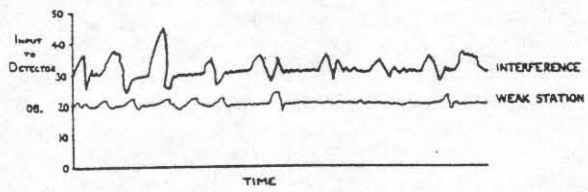


FIG. 1

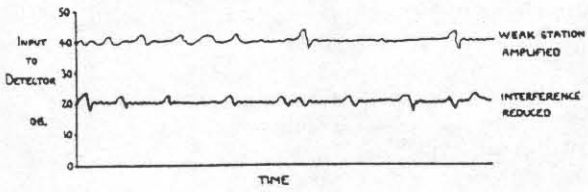


FIG. 2

By using a resonant aerial adjusted to the station being received, the strength of the weak station may be increased to say 40 db as shown in Figure 2. A crossfeeder lead-in system will reduce both the intensity and level of the man-made interference to 20 db. It will be seen that the radio signal is now heard clearly above the interference level which previously drowned the weak signal.

RESONANT AERIALS.

The use of resonant aerials on short waves is a practical proposition since the wavelengths are small and aerials whose physical dimensions are $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, or a full wavelength long, do not occupy too much space. For example, a half-wave doublet tuned to 30 metres only requires a top span of 45 feet.

IMPEDANCE MATCH.

If an aerial of 400 ohms impedance is connected to a feeder line of equal value, no voltages will be impressed in the feeders. The maximum output from any generator is obtained when the impedance of the load equals the internal impedance of the generator. If an inverted " V " aerial has a terminating impedance of 400 ohms, the feeder line should have a corresponding value. Half-wave aerials have an extremely high impedance when measured across their ends, but by feeding the line near the centre the impedance is reduced to a few hundred ohms and maximum transference of energy will take place. The sets described in this Manual are so arranged that the aerials mentioned here can be successfully used.

SHORT WAVE AERIALS—continued

TYPES OF AERIALS.

There are two types of short wave aerials :

(1) Non-resonant.
(2) Resonant.

In the first category there is the conventional Inverted L and T aerials, which are quite efficient, particularly in districts where little interference is present. Small space is required for their erection.

Where plenty of ground space is available and interference is negligible, the " Inverted V " aerial is suggested. This aerial has to be resonant on the desired wavelengths if maximum efficiency is desired.

For town and general use the Crossfeeder type of aerial with transposed lead-in is recommended since not only is an improved short wave performance obtained, but the interference due to man-made static is reduced, as Figures 1 and 2 show.

This short discussion on aerials will help the reader to decide which aerial best suits his own conditions and the above types of aerials will be dealt with in detail.

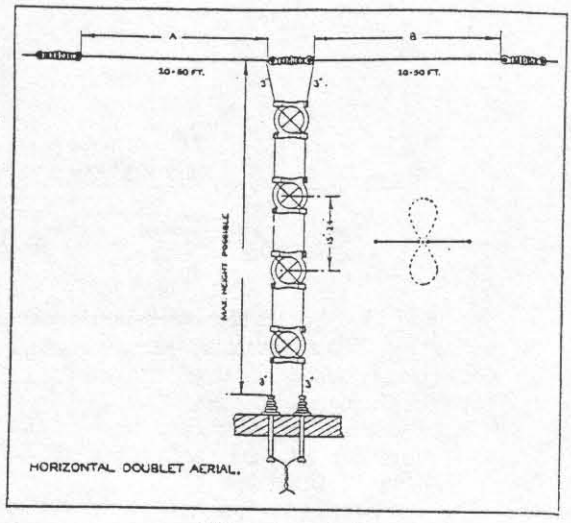
1. " INVERTED L " OR " T " AERIAL.

This type of non-resonant aerial for general short wave reception is made about 60 feet long from the free end of the aerial to the set. The down-lead is kept well away from buildings and not allowed to run close to the wall of the house. In the case of the " T " aerial the down-lead should be taken from the centre and soldered. The best method of obtaining the down-lead for the " Inverted L " aerial is to continue the horizontal portion by securely twisting it at the insulator and so avoiding the necessity of making a soldered joint.

2. CROSSFEEDER DOUBLET AERIAL.

The Eddystone Crossfeeder Doublet is a static-free, large signal to noise ratio aerial. Basically, it is a form of Hertz aerial, and as such, the two top sections can be cut to a definite length to give maximum response at certain frequencies. The top section is cut to the length corresponding to a half-wavelength of the station which it is desired to receive consistently.

To cut the lengths A and B of Figure 4 for any given frequency or wavelength, their combined length should be approximately



Figs. 4 and 4a.

one half of the wavelength of the desired station.

The formula for working out the length A+B for any given frequency is :

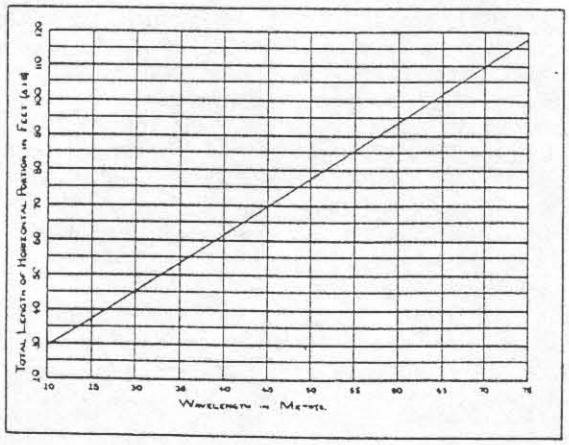
$$(A+B) \text{ ft.} = \frac{468{,}000}{\text{kc/s.}}$$

Remembering that

Frequency in kc/s. × Wavelength in metres = 300,000,

it is easy to work out the length required for any given wavelength.

For the convenience of readers not wishing to work out these figures, the curve of Graph No. 2 has been prepared. An aerial designed for a frequency of 4,000 kc/s. (75 metres) will also resonate at its second harmonic 8,000 kc/s. (37.5 metres) and at its third harmonic on 16,000 kc/s. (18.75 metres).



Graph No. 2.

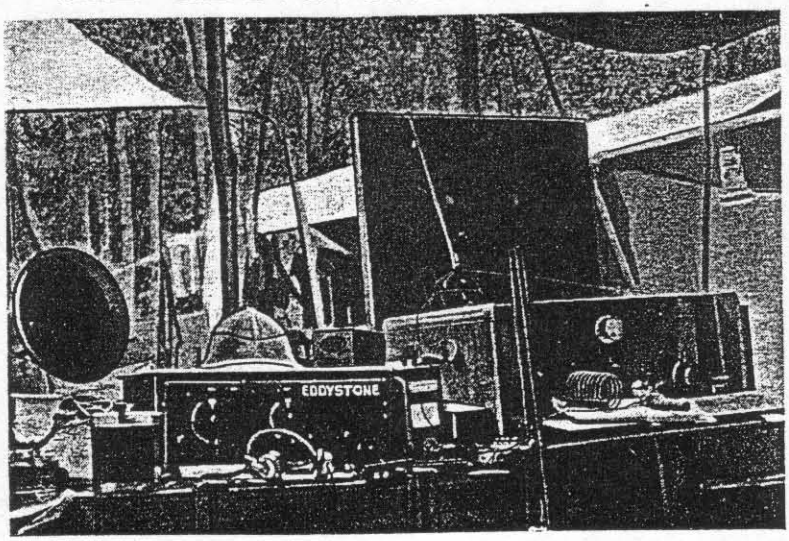
SHORT WAVE STATIONS

IN ORDER OF WAVELENGTH

	Station	Location	Wave-length Metres	Schedule	Alterations
	LSY	Buenos Aires	14·47	'Phone to GB. 10 a.m.– 2 p.m.	
	GBA	Rugby	14·70	'Phone to ships. Irregular	
	DHO	Nauen	14·97	'Phone to ships. 7 a.m.–11 a.m.	
	CEC	Santiago	15·24	Commercial 'phone. 11 a.m.–4 p.m.	
	DFA	Nauen	15·58	Commercial 'phone. 10 a.m.–2 p.m.	
	PLE	Bandoeng, Java	15·93	Tues., 2.40–4.40 p.m.	
	GBS	Rugby	16·38	Commercial 'phone. 6 a.m.–2 p.m.	
	SHIPS	At Sea	17·05	Telephony. Daily	
	W2XAD	Schnectady, N.Y.	19·56	Daily, 8–11 p.m. Sundays, 6–11 p.m.	
	PARIS/COL	ONIAL	19·68	Daily, 1–4 p.m.	
	ZEESEN	Germany	19·70	Monday, 8–6 p.m.	
	W8XK	Pittsburg East	19·72	Relays KDKA, Wed., Sat., 12–4 p.m.	
	HVJ	Vatican State	19·84	Daily, 12 noon	
	AMATEURS	Worldwide	20·9-21·3	Daily	
	RABAT	Morocco	23·38	Sunday, 12.30 p.m.	
×	CT3AQ	Radio **Eddystone**, Madeira	24·	Thurs., Sundays, 11 p.m.–3 a.m.	
	PARIS/COL	ONIAL	24·20	Daily, 4.30-7.30 p.m.	
	W8XK	Pittsburg East	25·25	Daily, 5 p.m.–3 a.m.	
	W9XAA	Chicago	25·34	Relays WCFL	
	I2RO	Rome	25·4	Daily	
	G5SW	Chelmsford	25·53	Relays B.B.C. National Programme	
	LSX	Buenos Aires	28·98	'Phone and records, 9.30 p.m.–1.30 a.m.	
	EAQ	Madrid	30·4	Daily Concerts, 12.30–2 p.m.	
	VK2ME	Sydney and Melbourne	31·28	Sun., Wed., Sat., 6-8 a.m. 3.30-5.30 p.m.	
	ZEESEN	Germany	31·38	Daily, 1 p.m.–1.30 a.m.	
	W2XAF	Schnectady	31·48	Relays, WGY daily, 10 p.m.–4 a.m.	
×	CT3AQ	Radio **Eddystone**, Madeira	32·0	Tues., Thurs., 11 p.m.–3 a.m.	
	RABAT	Morocco	32·26	Sunday, 8–10 p.m.	
	SHIPS	At Sea	33·95	Telephony	
	VE9BY	Canada	34·68	Irregular, Mon., 3–4 p.m.	
	JIAA	Japan	38·07	Irregular 'phone	
	HKF	Bogota	39·7	Daily	
	HSP2	Bangkok	41·10	Mondays, 2–5 p.m.	
	AMATEURS	Worldwide	41·3-42·5	Daily	
	CT1AA	Lisbon	42·90	Friday, 11 p.m.	
	I2RO	Rome	43·0	Irregular	
	REN	Moscow	45·38	Daily	
	CN8MC	Casablanca	48·0	Mon., Tues.	
	X1F	Mexico City	48·65	Irregular	
	VE9CL	Winnipeg	48·8	Daily, 12.30–2.30 ex. Sunday	
	W2XAL	Bound Brook, N.J.	49·18	Daily, 10 p.m.–6 a.m.	
	W9XAA	Chicago	49·34	Daily, 2–5 a.m.	
	UOR2	Vienna	49·4	Experimental	
	JOHANNES	BURG, S.A.	49·4	Daily, 4.30–9.30 p.m.	
	VE9CS	Vancouver, B.C.	49·43	Irregular	
	7LO	Nairobi, Kenya	49·5	Daily	
	W8XAL	Cincinnati	49·5	Relays WLW	
	W9XF	Chicago	49·93	Relays WENR	
	VE9DR	Drummondville	49·96	Irregular	
	MOSCOW	U.S.S.R.	50·0	Thurs., Suns.	

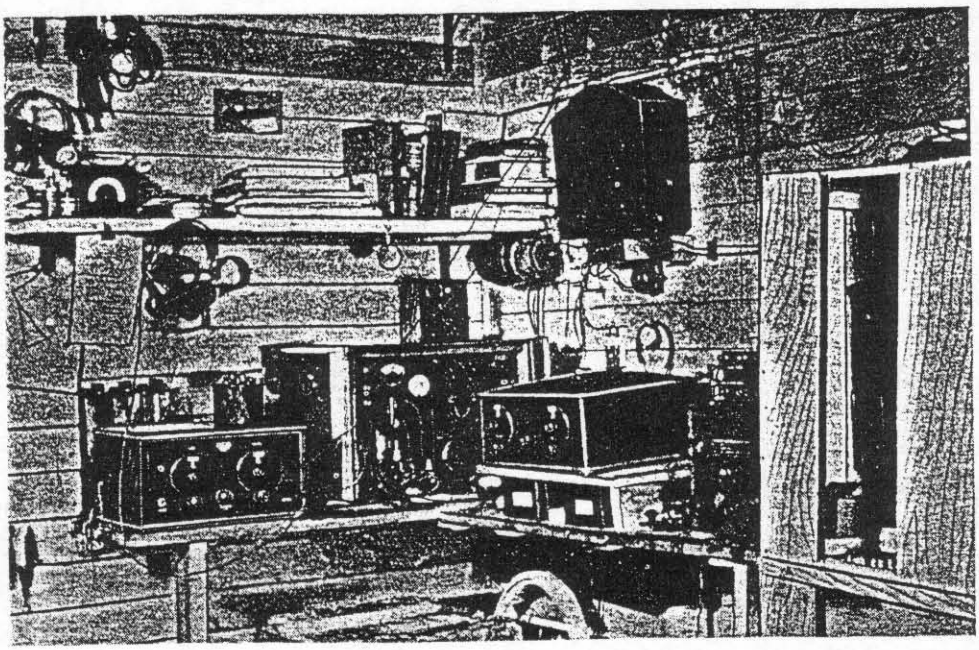
No, don't try tuning these stations in ! This list is from the 1932 Eddystone Short Wave Manual, Number 1 in the series that we have in E.U.G archives, please note the references to Eddystone Radio, no connection with Eddystone Radio Ltd.

EXPEDITIONS TO ALL PARTS OF THE WORLD USE EDDYSTONE RECEIVERS



IN THE TROPICS.

The wireless installation comprising receiver and transmitter used by the Oxford University Expedition to British Guiana, practically on the equator, in the tropical jungle



Reprinted by kind permission of the "Times."

IN THE ARCTIC.

The radio cabin of the British Arctic Air Route Expedition, who remained in Arctic regions for 12 months. The equipment worked throughout without failure.

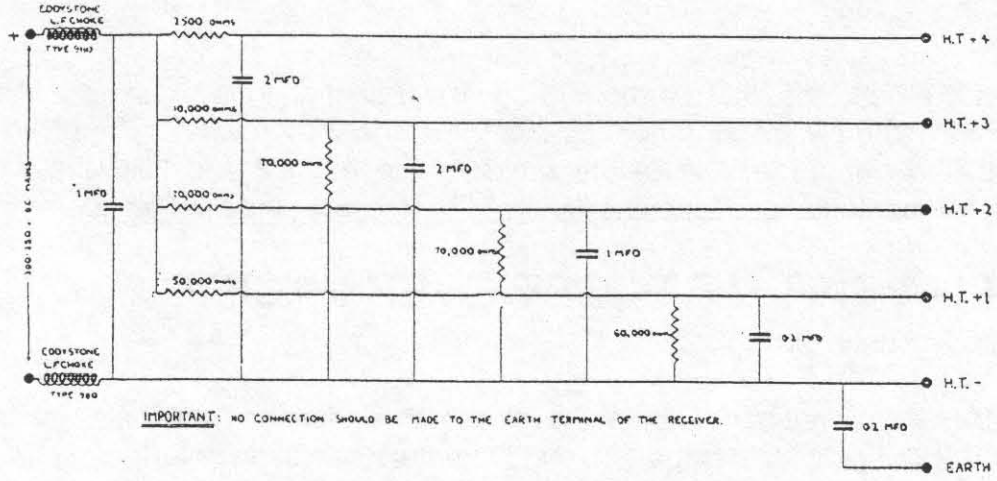
Other expeditions who are carrying Eddystone short wave equipment are:—

Captain Malins, England to Capetown, by road.
Hudson Strait Settlement Expedition.
Oxford University Expedition to Sarawak.
Yacht Vigilant Treasure Hunt Expedition to the South Seas.

MAINS ELIMINATOR CIRCUITS

FOR SHORT WAVE RECEIVER USE

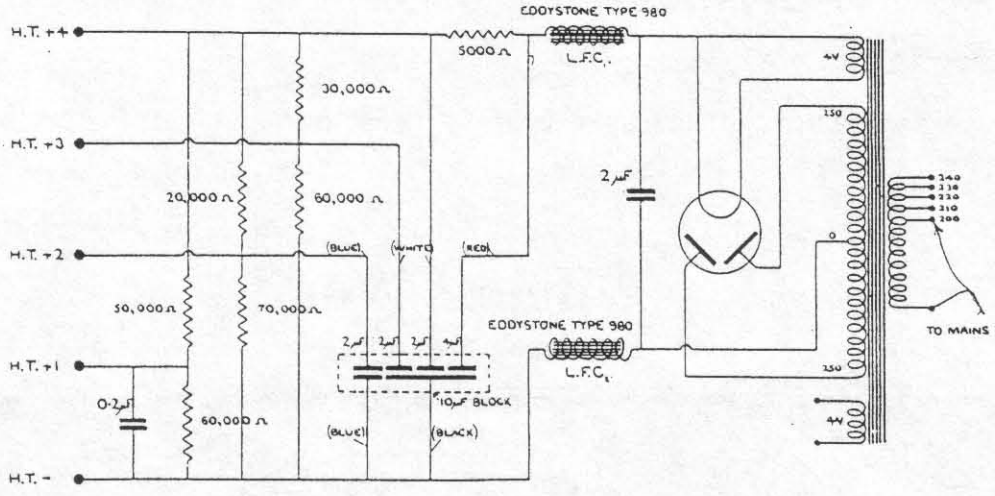
D.C. ELIMINATOR FOR USE ON D.C. MAINS 200-250 VOLT. OUTPUT 150 VOLTS AT 20 MILLIAMPERES.



List of Parts required.

	Price
2 Eddystone L.F. Chokes, Cat. No. 980 ..each	8/6
1 Eddystone Block Condenser, 6.4 mfd., 500v. D.C. test (2 × 1 mfd., 2 × 2 mfd., 2 × 0.2 mfd.)	11/6
1 Erie Resistor, 2,500 ohms, 3 watt. ..	1/8
1 each Erie Resistors, 1 watt, 10,000, 20,000, 50,000, 60,000 .. ..each	1/-
2 Erie Resistors, 1 watt, 70,000 ohms ..each	1/-
6 Terminals and Terminal Strip	2/3
Suitable Baseboard, 9" × 6" and container.	

ELIMINATOR FOR USE ON A.C. MAINS 100-250 VOLTS, 40/100 CYCLES. OUTPUT 150 VOLTS AT 20 MILLIAMPERES.



List of Parts required.

	Price
2 Eddystone L.F. Chokes, Cat. No. 980 ..each	8/6
1 Eddystone Block Condenser, 10 mfd., 500v. A.C. test (3 × 2 mfd., 1 × 4 mfd.) ..	12/6
1 Eddystone Valveholder, Cat. No. 501 ..	1/3
1 2 mfd. Condenser	4/-
1 0.2 mfd. Condenser	2/-
1 Mains Transformer, 250/0/250 4v. 1 amp. 4v. × amps. required.	Price
1 Erie 5,000 ohm, 3 watt, Resistor ..	1/8
1 each Erie Resistors, 1 watt, 20,000, 30,000, 50,000, 70,000 ohms. .. .. ..each	1/-
2 Erie Resistors, 1 watt, 60,000 ohms ..each	1/-
7 Terminals	1/9
Suitable Baseboard and Container.	

The output of both eliminators can be increased to give 40-50 milliamps if the 3 watt drop resistors are omitted.

- At the request of several members who have examples of the early type Battery sets, here are two circuits for HT eliminators, one for DC mains and one for AC mains. This comes from the Eddystone Short Wave Manual Number 2, of 1935 in our E.U.G archives.

The New York Times

AIRWOMAN'S RECORD ATTEMPT

Miami, June 1937

Amelia Earhart, the first woman to fly the Atlantic, today makes a new bid to circumnavigate the globe in her Lockhead Electra, with navigator Fred Noonan. She leaves here for Venezuela before crossing the Atlantic and following the equator across Africa, India, and touching Australia before crossing the Pacific...

AMELIA EARHART LOST OVER PACIFIC

Pacific, 2nd July 1937

President Roosevelt has ordered a huge search for America's favorite airwoman. She radioed "We are flying north-east". Nothing more has been heard from her. The flyer had prepared everything carefully, except perhaps her radio, for she left behind a long antenna in Miami. Contact was lost yesterday. Her last message was picked up by the US Coast Guard cutter *Itasca* at 8.43am, an hour after she had reported just half-an-hour's fuel remaining. There have been reports of faint radio distress signals, but there seems little hope of finding the flyers.

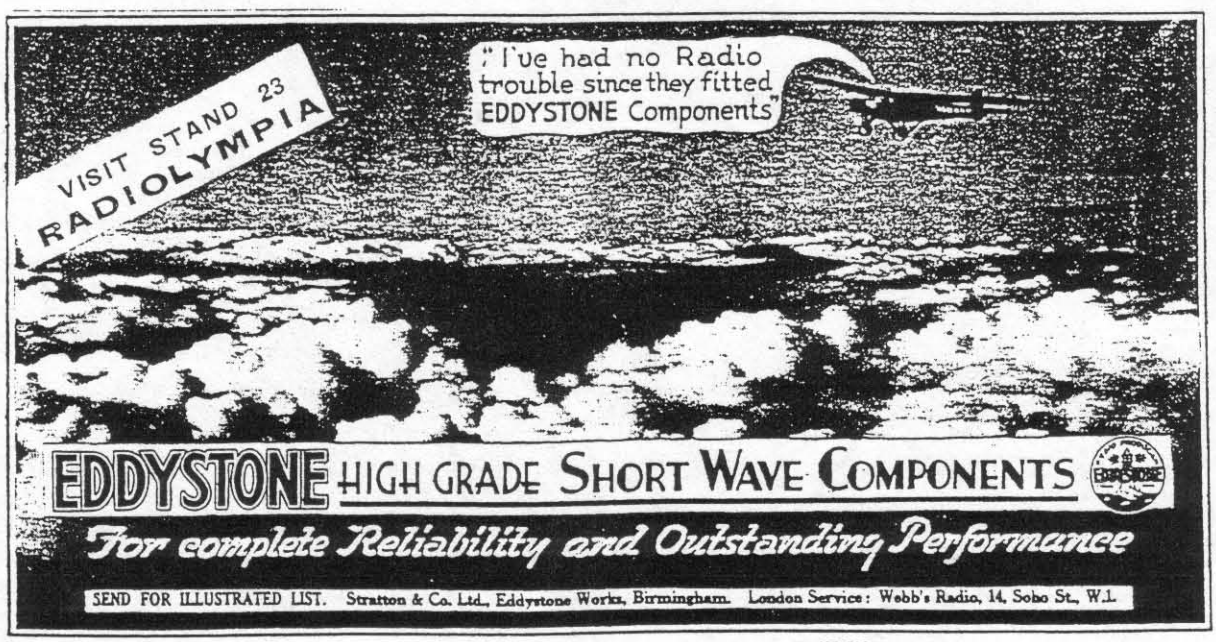
SEARCH ABANDONED

Hawaii, 19th July 1937

The official search for missing flyers Amelia Earhart and Fred Noonan was abandoned today.

Wireless World

20th August 1937



Stratton's Advertising Agent has an unfortunate lapse of good taste...

- The 958 Receiver.-

- This model is perhaps one of the most complicated to operate for most EUGers, at least amongst those Eddystone models that are presently available to most of us.

- From correspondence received it does seem to me that many of the problems are caused by that attitude of some, the "Idon't need to read a manual" syndrome. If you want to get the best from any receiver, or other piece of equipment, then you DO need to read the manual, even such as the 670A has this requirement.

- Letters relating to this 958 problem that I have here show that only by reading the manual and understanding the manner in which the 958 is put together, can the operator be assured of getting the best from the set, and doing so without wondering why it does some things and will not, can not, do others.

- Possibly the most common query in letters is "why will my 958 not operate in the Hi-Stab mode on the Medium Wave band ?" If you do read the manual then the answer is simple enough - it isn't meant to ! Allied with this question is one in a recent letter, remarkably similar to the first, "why is the USB/LSB mode switch inoperative on ranges 7, 9, & 10 ?" Again the short answer is that is not meant to so do !

- Just reading the manual will tell the reader these simple facts and if he has the necessary technical knowledge it will also explain to him why. The 958 is either a single, a double, or a triple superhet depending upon the range that is in use. Page 5 of the General Description says clearly that the set does not work on HI-STAB below 1.6 Mc/s, because the 958 is only a triple superhet above this frequency. The non-tech; operator needs to know no more, the tech; op; can read through the manual and learn it all.

- The receiver input signal is converted from that frequency to the 100 Kc/s directly on ranges 7, 9, & 10, thus the USB/LSB facility which is part of the first, tunable IF cannot be operative on these bands.

- Another much asked question is why the IF gain pot; is inoperative on the AGC position of the MAN/AGC switch. Again this would be comprehended if the manual had been read. NO need to delve deep into technicalities, just read the manual.

- If you have just taken delivery of your newly acquired 958 and it really is malfunctioning in some way then it may be nothing more than the much mentioned corrosion of the connecting strip plugs and sockets. Sometimes a simple wiggle will restore normality, but it is always best to have a go with some switch-cleaner and a brush. Apart that the 958 is a superlative set to use and if you do not have a phobia about solid-state devices then you will get many hours of pleasure from a 958. Q.E.D.

- - - - -

- The 958 Again ! -

- Steve from Durham reminds me that the 958 manual has a very comprehensive Fault Diagnosis Section that helped him considerably when he got his ex - Trawler 958 home and began to clean it up.

- - - - -

- Battery Operation of the 960.-

- After several years of using his 960 receiver on batteries of the fairly new 'Energiser' type, (alkaline cells), this happy EUGer was persuaded to fit Nicads of the same size. The idea being that he could charge these when necessary from a mains psu of the 'plug-in' type.

- Now one fact he apparently ignored at the time, but does know about now is that a Nicad only gives out about 1.2 volts in use, whereas the dry cells give out more like 1.4 - 1.5 volts each. The result of putting 8 Nicads in the battery box was a total of 9.6 volts when these Nicads where fully charged up, less as they went 'flat' in use.

- Alan's problem showed up first on the HF end of Range 1, and gradually it moved lower to eventually cover all of Range 1.

pto -

960 cont;-

- The first signs of a problem came when Alan noticed a rough 'buzz-saw' noise at several points between 20 and 30 Mc/s, shortly after switch on. After about an hour of use the noises had progressed lower down towards the 20 Mc/s end and down here they almost blotted out reception. With visions of having to send off the 960 for repair he switched off, put the battery of Nicads on charge and went to bed.

- Next day lo and behold the problem had cured itself and he enjoyed several happy hours of listening on the 960. That next evening back came the noises & a quick test with the aerial disconnected showed that they were definitely inte rnal to the 960, not picked up QRM. A happy thought was to remove the Nicads and try the set with dry cells in the box. The problem was cured, putting the Nicads back in proved that they were causing the problem. A check with a DVM showed that the dry cells were giving out almost 12 volts on load whereas even after a full night of charge the Nicads gave out just 9 volts and that this went down soon after they were put on load, to about 7.5 volts. At this point the 'buzz-saw' noise began. It seemed clear that one or more of the Nicads was faulty and that even with a full charge the operating volts would be low for a 960.

- The problem could be solved by using a battery made up of 9 - instead of 8 Nicads. But they would not fit in the 960's battery box. For the time being the set is back to operation from Energiser cells and is happy. Plans are now being made to obtain a set of 9 new Nicads to be fitted in an external battery box, a built in Nicad charger will also be used this time as those 'plug-in' types are not really suitable for use with Nicads.

- - - - -

- The EB36A Receiver.-

- Amazing that we hear nothing of this model for so long and then several of them surface, in the hands of EUGers too. This particular one was owned for many years by Reuters, the international News Agency people. It is now in the hands of Sam who says that reception on the 36A is much better on the crowded medium wave band than with his EB35.

- No secrets about why this is so, the better selectivity obtained with the ceramic filter of the 36A is the reason, and a look at the receiver spec; will show this. 6.0 db bandwidth of 3.5 Kc/s and -60 db at 7.0 Kc/s compares very favourably with the EB35 figures of 6 db at 5.0 Kc/s and -40 db at 25 Kc/s.

- According to Sam the mods to the circuit board to accomodate the ceramic filter are minimal and IF you can get a suitable ceramic filter unit then it can be fitted to your EB35 (or 36 or 37 !) quite easily, giving a very worth while update to a nice receiver. He mentions that all the IF strip will need to be re-trimmed to suit the centre frequency of the ceramic filter.

- - - - -

- FREE MEMBERS ADS.-

- WANTED, 'S' meter for an EClo II, please phone Walter on 01752-775675, Plymouth area. Thanks, GØ VKN.

- WANTED, any info on Woodsons of Aberdeen who manufactured marine receivers using Eddystone components circa the 50s ? Write to Ted at EUG in first place and I shall forward.

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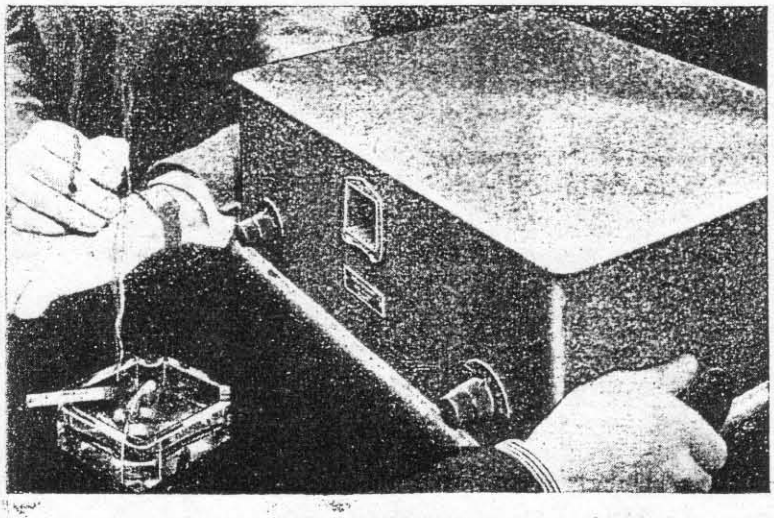

"... 8,000 miles— uncanny—isn't it?"

THIS MASTER SET receives the world's programmes with a simple turn of the dial! Letters of praise on its fine performance and reliability are continually received from all parts of the world. Loud speaker reception is given from short-wave stations over many thousands of miles, even under the adverse conditions which prevail in the tropics. Results on all other wave-bands are equally brilliant. The Eddystone All Wave Four is constructed to withstand the worst climatic conditions and is the finest instrument of its kind it is possible to obtain.

SPECIFICATION.—Eddystone All Wave 4, 1932/33 model, incorporating S.G. Variable-Mu H.F. stage with volume control, detector, 1st L.F. and Pentode output valve, automatic grid bias, drop fed H.T. supply. One dial tuning, terminals for gramophone pick-up. Standard wave range 12.5/35, 250/500 metres and adaptable to all wavelengths up to 2,000 metres. Monobloc metal cabinet, beautifully finished, sand, damp and insect tight.

PRICES IN U.K.—Battery Model £24 - 10 - 0
All-Electric Model £33 - 0 - 0.

Agents Overseas:

KENYA, UGANDA & TANGANYIKA—Stephen Ellis & Co., Nairobi.
NATAL, ORANGE FREE STATE, ZULULAND, SWAZILAND—Electrical Supplies, Ltd., Durban.
CAPE COLONY—Eddystone Radio Agency, Fort Beaufort. Bagwell & Co., Thompson Street, Port Elizabeth.
CEYLON—Walker & Sons, Ltd., Colpetty, Colombo.
PORTUGUESE WEST AFRICA—The Mimica Trading Co., Ltd., Lobito.
MALAYA—The Music Store, 17, Batu Road, Kuala Lumpur. V. J. Horswill, Orchard Road, Singapore.
SIAM—Kiam Hoa Heng Company, Bangkok.
MADEIRA—Oscar G. Loupelina & Co., Rua do Conselho 160, Funchal.
TRINIDAD—H. A. Belling, Frederick Street, Port of Spain.
HONG KONG—Anderson's Music Co., Ltd., St. George's Building, Hong Kong. Economical Trading Co., Ltd., 6, Des Voeux Road, Central.
WEST AFRICA—G. B. Ollivant & Co., Ltd., all branches.
INDIA—Eddystone Radio Products, Imperial Chambers, Wilson Road, Ballard Estate, Bombay.
ARGENTINE—Lewis R. Kirkwood, San Lorenzo 1085, Rosario.
BARBADOS—E. Archer, Victoria Hall Bank Road.
PORTUGUESE EAST AFRICA—Mimica Trading Co., Ltd., Beira.
B. N. BORNEO—Hopkins Limited, Jesselton.
B. W. INDIES—J. K. Edmead, Bassaterre, St. Kitts.

Sole Manufacturers: Stratton & Co., Ltd., Bromsgrove Street, Birmingham, England.

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

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There is NO SUBSTITUTE for

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The World's Strongest Adhesive—
proved to be TWICE AS STRONG as any other.

Made by British workpeople for nearly 50 years. Proved best—it has stood the test of time. Insist on Seccotine—sticks anything. In collapsible tubes from all good Stationers, Ironmongers and General Stores. Look for the name on tube and carton.

Write for booklet describing many amazing uses.

Dept. W.R., McCaw, Stevenson & Orr, Ltd., Belfast.

TRADE INQUIRIES INVITED.

There is only ONE SECCOTINE

11

How much of the drama does your loudspeaker steal?

The majority of Loud Speakers rob you of half the pleasure of radio. They reproduce the broadcast unevenly . . . . sometimes even actually missing the vital parts which give sparkle and life.

With its monster magnet of special steel the Lamplugh Silver Ghost P.M. Moving Coil Loud Speaker reproduces every sound in your home exactly as it is in the Studio. Every inflection, every little trick of modulation, every little mannerism of the artiste is faithfully brought out. Speech acquires a new depth, music a deeper sweetness, song a greater richness.

Ask your dealer to let you hear the Lamplugh Silver Ghost up against an ordinary loud speaker. Then you will hear for yourself how only Silver Ghost puts the breath of life into radio.

"Wireless World" say of the Senior P.M.: "Sensitivity was found to be above the average. Reproduction is bright. Just the required amount of bass to give good balance. Speech is crisp. The highest intelligibility may be expected under adverse receiving conditions."

PRICE 42/- including Baffle and Transformer

JUNIOR
The new Lamplugh Junior "Silver Ghost" P.M. Moving Coil Dynamic Loud Speaker including transformer costs only **29/6**

INDUCTOR DYNAMIC
This is the most natural reproducer on the market—the Lamplugh "Silver Ghost." Made under Farrand Patents. Refuse imitation types. Price **50/-**

GET IT ALL ON THE

silver ghost

P.M. MOVING COIL LOUD SPEAKER

S. A. LAMPLUGH LTD., 89 LITTLE PARK STREET, COVENTRY

London Office: Mr. F. G. Billett, 19/20 Holborn Viaduct, London, E.C.1

Buckingham

- Avaunt Thee Satan.-

- Word from Graeme is that we have had one EUGer resign from the Group for this coming year. His reason being that "the temptation is too great".
- I can understand his point as I myself found that at times my 'hobbies' budget was being exceeded by my regular attendance at Rallies and Club Shows.
- It does seem to be a fact, going by your mail, that few members can be content with owning just the one Eddystone Receiver. Much of my mail mentions that the first receiver is soon joined by a second, and then a third. Dave tells me that whilst he bought his first Eddystone, a 750, only in 1994 - he now owns up to 11 sets and has his eyes open for another that the owner is thinking of selling.
- I guess that future issues of the Newsletter should come complete with a WARNING - Eddystones can be hazardous for your Wallet. (verb sap;).

- - - - -

- An Embarassment of Riches.-

- The vast amount of paperwork that EUG has gained from the 'shack' of the late Geoff Woodburn has already produced some Gems that have considerably enhanced our knowledge of the early years of Eddystone Radio.
- I suppose that the most valuable find by Graeme was a copy of the Factory Blueprint Register for the years from 1932 to 1946. A 12 year span that covers the most interesting part of the production years of the Company, including as it does the WW II years.
- This register has enabled me to correctly and reliably date, in some cases to re-date, many models. It has already brought to light another previously unknown - to me - model, the Atlantic Three. This joins the Atlantic Two that came to light a couple of months back.
- To say that I was excited by this find would be an understatement, I am now carefully collating the contents with what I have in my files for those years - more later !
- Another find was a copy of the S.700 or IMR-54, the so-called 'Queens' model, it is a massive Blueprint so don't all ask for a copy, please !

- - - - - -

- SUBS; Last Chance ! -

- As always at this time we have to start chasing those reluctant to part with their subs for the next year of EUG. Graeme is becoming mildly, but firmly threatening. Pay up or this will be your last issue !
- Seriously though it does increase his workload considerably if subs; are not sent in on time, and it does also involve the volunteers at the Factory in more work too. So come on - lets have that £10 from you EUGers. All mail says that the N/L is value for money, it ought to be too the way that Chris subsidises it !

- - - - - -

- Wrong Valve in the Wrong Hole.-

- John says that an 840A that he bought at a Club sale was advertised as G.W.O and so he took it home and plugged it in, felt real silly when he had to swop a fuse ! He then opened up the non-working set and did some checking out of the above chassis setup.
- He did a second take when he saw the valve line-up and referred to the schematic in his handbook, sure enough three of the valves were in the wrong sockets ! The interior of the set looked pretty clean and John has to assume that the valves had been removed for cleaning and then replaced in the wrong holes ! Only one valve did not survive and he was lucky enough to have a spare in the junk box - so he had it working soon enough, BUT - he says that the motto must always be - do a good visual check before you apply the ergs.

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#3 - 1938.

EDDYSTONE

Short Wave MANUAL

ULTRA SHORT WAVE
RADIO TELEPHONE

CONSTRUCTIONAL ARTICLES for—

PRICE 1/-

EDDYSTONE

SHORT WAVE MANUAL

NO. 3

CONTENTS

ULTRA SHORT WAVE
RADIO TELEPHONE

View of combined Transmitter and Receiver with handset ready for Duplex working.

This apparatus we have called an Ultra Short Wave radio telephone since it can be used together with a similar equipment for duplex telephony working over a distance of several miles. The actual range is governed by circumstances such as the efficiency of the aerial due to location and the character of the intervening country.

To give examples which not only apply to this apparatus, but to all low powered ultra short wave equipment in general, the following remarks are offered as a guide :—

From hill top to hill top with intervening lower lying land, 10 to 25 miles range.

From one aerial erected some 15 to 20 feet high, clear of surrounding or screening objects across flat wooded country, 5 to 10 miles.

Under the same circumstances, but with aerials on the ground, 5 miles, or if with hilly country in between, 2 to 5 miles.

In towns or cities with the aerials erected 20–25 feet high and unscreened, 3 to 5 miles.

With aerials at ground level, ½ mile to 2 miles.

These figures are based on actual experience ; greater ranges are sometimes obtained, but they are not reliable.

This apparatus consists of two compact individual units, the receiver and the transmitter. Either of these can be built and used separately. The receiver is suitable for all ultra short wave reception and both it and the transmitter fit separately into the small Eddystone metal cabinet No. 1033. Alternatively the two units together fit into the larger Eddystone metal cabinet No. 1034, as shown in the top photograph when they form a complete equipment for portable use, yet can be taken apart and used as transmitter and receiver when required.

The combination of the two separate units is superior to the alternative transceiver construction, where the valves serve one function for receiving and another function on transmit. In this case proper efficiency for both functions is impossible. Further, the present arrangement permits of Duplex working since frequency adjustments of both receiver and transmitter can be left set, whereas the transceiver has a common tuning circuit which must be switched and retuned each time.

ULTRA SHORT WAVE RADIO TELEPHONE—continued

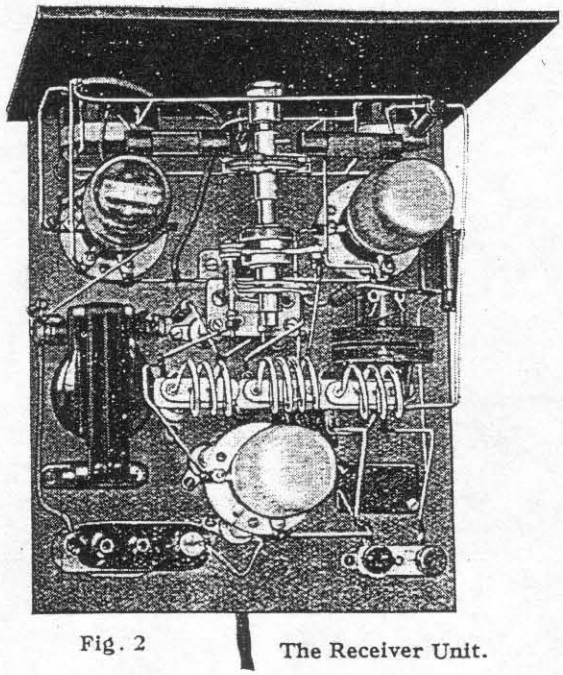


Fig. 2 **The Receiver Unit.**

The possibilities and advantages of such a radio telephone, as described, are considerable and offer much pleasure in their exploitation.

THE RECEIVER.

The receiver unit employs a three valve super regenerative circuit. This arrangement possesses many advantages in that it is simple to build and easy to get working properly. The sensitivity and efficiency of the detector is high and the receiver is not critical to handle, since with super regeneration the tuning is comparatively flat. Its one disadvantage is the quench noise background on very weak signals, but this noise is non-existent when the signal is fairly strong and it must be remembered that when the signal is too weak to kill the quench noise it would generally be too weak to be picked any more intelligently on a different type of receiver.

In the super-regenerative arrangement, the detector valve is made to oscillate, under which condition it gives tremendous gain. As this arrangement does not permit of reception of telephony signals, a super imposed frequency generated in the quench circuit is applied and the resultant output causes the oscillations to be broken up into audible groups which are then passed on to the later stages of the set for amplification. The quench frequency in this receiver is approximately 20 kc/s, which we have found to be best in practice, and the quench noise is always heard except when a signal is received. A signal of sufficient amplitude reduces the amount of quench noise to zero and as the signal strength becomes weaker, the quench noise is more pronounced. It is of great advantage, therefore, in this type of receiver to have a minimum amount of quench noise so that the weaker signals can be received. It is usual practice in quench receiver design to have the anodes of the detector and quench valves in parallel and to use a common H.T. supply. Although this arrangement works quite well, it has the disadvantage that when the quenching is reduced for weak signal reception, the voltage on the detector anode is also dropped so that the sensitivity and efficiency of this part of the set suffer. In this present design, the circuit has been modified so that both quench and detector valves receive separate high tension supply and the quench frequency is fed to the detector stage by grid modulation. Separate potentiometer controls are fitted so that the anode voltage of the quench and detector valves can be adjusted. The detector can then be operated at the point of maximum sensitivity with the minimum amount of quench necessary for reception purposes.

The circuit diagram is shown in figure 3, and the view of the general lay out in figure 2. The receiver is built on a plywood baseboard, with a bakelite or ebonite panel. The baseboard is raised about $\frac{1}{2}$" from the bottom of the panel to allow for the battery leads to be carried underneath. A small packing piece of plywood is needed to support the back-end of the baseboard. The components should be laid out as shown in figure 3.

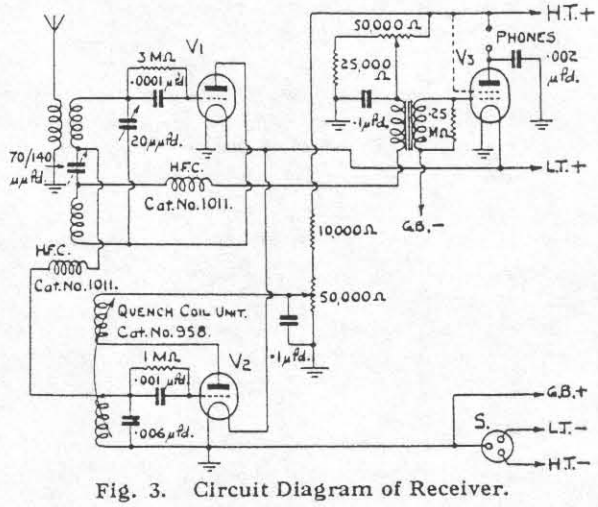


Fig. 3. **Circuit Diagram of Receiver.**

ULTRA SHORT WAVE RADIO TELEPHONE—continued

The detector valveholder at the back-centre, the interchangeable coil units and the aerial and earth terminals are raised up on pillars. The valve on the right-hand side near the panel is the " quench " valve, and on the left is the low-frequency amplifier.

Grid terminals on the valveholders should point to the right-hand side of the receiver when viewed from the rear.

The pre-set condenser which is also mounted on small pillars underneath the tuning condenser, is set to a capacity so that correct control of the detector oscillations can be carried out with the 50,000 ohm potentiometer. The high frequency chokes should be mounted vertical so that their turns are at right-angles to the tuning coils. The tuning condenser is mounted by means of an adjustable bracket and is fastened to the slow-motion head control by means of a flexible coupler.

The quench and detector oscillator valves are Osram or Mazda HL2, and the output valves Osram LP2 or Mazda P220, which need three volts grid bias with 120 volts H.T. or if a pentode output is desired, a Mazda Pen.220 may be used with 4½ volts grid bias.

The frequency range of the set can be extended from 4.8 metres to 12.4 metres, since interchangeable coils are fitted. Each of the three coils for a particular wave band consists of the same number of turns, and the wave range of the different coils is as follows :

3-turn coils.	4.8	to 6.35	metres
4-turn coils.	5.65	to 7.4	metres
5-turn coils.	6.62	to 8.72	metres
6-turn coils.	7.55	to 9.8	metres
8-turn coils.	9.5	to 12.4	metres

The receiver having been finished and checked, it can be put into service. Insert valves, connect high, low tension and grid bias battery, which should be 120 volts, 2 volts, and 3 to 4½ volts respectively. Insert suitable coils as shown in Coil Table. Set tuning dial at " zero." Turn left-hand control knob (quench) to minimum setting, anti-clockwise. To set reaction, the pre-set condenser should be screwed well out. Turn right-hand control knob about one-third on. Screw pre-set condenser down until receiver just oscillates. Then check by turning knob anti-clockwise when oscillation should cease. By turning clockwise oscillation should take place again. To check "quench" keep receiver oscillating and advance quench control knob until receiver stops oscillating. The right-hand knob can then be advanced slightly until receiver is coming into oscillation again. Repeat by turning left-hand knob until

LIST OF PARTS.

EDDYSTONE

	Price
1 Microdenser, Cat. No. 900/20	3/9
1 Slow Motion Driving Head, Cat. No. 1036	4/6
1 Flexible Coupler, Cat. No. 1009	1/6
1 Adjustable Insulated Bracket, Cat. No. 1007	1/6
2 Frequentite Valveholders, 4-pin, Cat. No. 949, at 1/5 each	2/10
1 Frequentite Valveholder, 5-pin, Cat. No. 950	1/8
1 Quench Coil Unit, Cat. No. 958	4/6
2 Ultra Short Wave H.F. Chokes, Cat. No. 1011, at 1/3 each	2/6
3 Insulating Pillars, 2½", Cat. No. 1028, at 6d. each	1/6
6 Insulating Pillars, 1½", Cat. No. 1029, at 4½d. each	2/3
1 Frequentite Terminal Saddle, Cat. No. 1046	1/0
3 U.S.W. Coil Bases, Cat. No. 1051, at 1/- each	3/0
1 Set of 3 turn U.S.W. Coils, Cat. No. 1050	4/6
2 Black Knobs, ¼" hole, Cat. No. 903, at 6d. each	1/0

Total, £1 16s. 0d., plus Coils extra as required.

MISCELLANEOUS

1 Ferranti A.F.4 Transformer
2 Reliance 50,000 ohm Potentiometers
2 T.C.C. 0.1 mfd. Tubular Condensers (Wire Ends type)
1 Cyldon 70–140 Trimmer
1 3-point On-Off Switch
1 Dubilier .006, Type 670
1 Dubilier .001, Type 670
2 Dubilier .0001, Type 670
1 4½ volt G.B. Battery and Clip
1 Erie 10,000 ohms 1 watt Resistor
1 Erie 1 megohm 1 watt Resistor
1 Erie .25 megohm 1 watt Resistor
1 Erie .25 megohm ¼ watt Resistor
1 Erie 3 megohm 1 watt Resistor
1½ yards 4-way Cable
2 Red Wander Plugs
2 Black Wander Plugs
1 Red Spade Terminal
1 Black Spade Terminal
2 Insulated Terminals
1 Panel, 9¼" × 8½" × 3/16", Ebonite or Bakelite
1 Baseboard, 9¼" × 7¾", ⅜" Plywood
1 Wood Strip, 7¾" × ½" × ½"
30 ½" × 4 R.H. Wood Screws
6 ¼" × 4 R.H. Wood Screws
3 ¼" × 6BA R.H. Screws
6 ⅜" × 6BA R.H. Screws

Approx. Total Cost, £2 10s. 0d.

VALVES.

2 Mazda HL2 Valves, Metallised, at 4/9 each
1 Mazda P220 Valve — 6/-

Approx. Total Cost, £5 1s. 6d.

ULTRA SHORT WAVE RADIO TELEPHONE—continued

oscillation again ceases. This operation can be repeated to a point where back-ground noise comes too unpleasant for listening. When such setting is reached maximum sensitivity has been achieved, but it is sometimes necessary to reduce gain slightly otherwise background noises may be excessive.

To tune signals, turn quench and tuning dial to "zero." Increase reaction until receiver just oscillates, then by gently turning tuning control and slightly increasing reaction so that oscillation is maintained until a station is heard. This will appear in the form of a whistling note. The quench control can then be increased to suppress the whistle and the station proper will be heard. Afterwards by slightly advancing the quench and reaction control, maximum sensitivity can be obtained.

THE TRANSMITTER UNIT.

The transmitter unit consists of a push-pull oscillator with a Class B modulator, and a driver valve. The first two valves are Osram, type B21, and the driver valve is a Mazda P220. The advantage of a Class B modulator is that until modulated with speech it practically takes no high-tension current, but this rises when modulated to a maximum of 20 m.a.

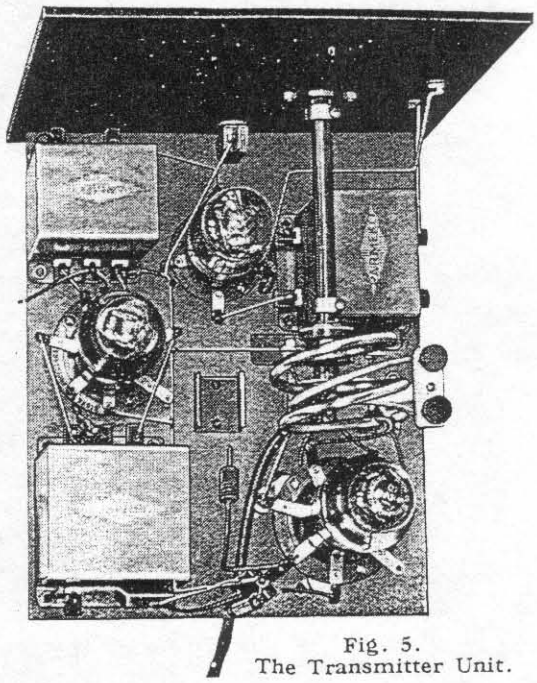


Fig. 5.
The Transmitter Unit.

The Class B push-pull oscillator, and the driver valve, need a further 17 to 18 m.a., so that the total current consumption of the transmitter is 18 m.a. when quiescent, to 38 m.a. when modulated.

A 120 volt battery supply is suitable. Slightly better results can be obtained using 150 volts. The capacity of the battery naturally depends upon the amount of use. A 2 volt accumulator is necessary for filament supply.

The circuit arrangement of the transmitter is shown in figure 4, and the component lay out in figure 5.

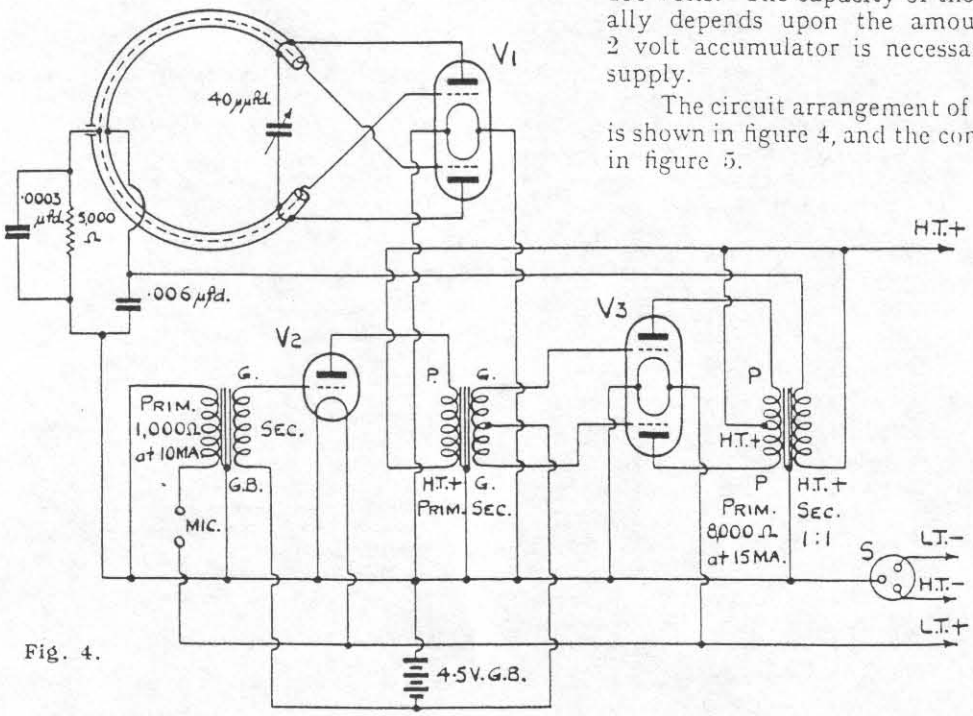


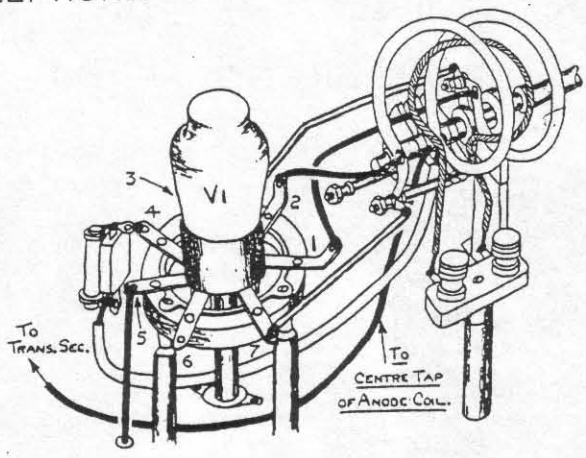
Fig. 4.

Theoretical Circuit Diagram for Transmitter Unit.

ULTRA SHORT WAVE RADIO TELEPHONE—continued

TRANSMITTER LAY OUT.

Viewing photograph, the microphone transformer is shown on right, and driver transformer on left, nearest panel. On the right-rear of baseboard is output transformer. The oscillator valve is furthest from panel and is mounted on insulating pillars. The Class B valve is on left between driver and output transformer. Driver valve is nearest panel. The baseboard is raised on battens to allow underneath wiring to battery cable and filament leads. In front of the oscillator valve mounted on adjustable bracket is the variable condenser, of 20 m.mfd. capacity. Above the condenser are the transmitting coils.



CONSTRUCTION OF COILS.

The plate coil is made from 20 gauge $\frac{3}{16}$" outside diameter copper tube. The inside diameter of the coil is 2" and has $2\frac{1}{4}$ turns, a tapping being taken from the electrical centre to secondary of output transformer. The ends are flattened and drilled 6BA so they may be slipped over terminals of microdenser to facilitate wiring. The grid coil consists of light gauge rubber covered flexible wire and is worked through the inside of the plate coil tube, the ends and also centre tap being brought out through holes drilled in walls of copper tube. The aerial coupling consists of one turn $1\frac{1}{2}$" diameter, and is made from 12 gauge copper wire with a systoflex covering for insulation. This coil is mounted on a terminal saddle, which is raised from the baseboard on pillars and provides anchorage for the feeder line to the aerial.

THE AERIAL.

Most of the conventional types of ultra short wave aerials can be used with the transmitter as described. These include the 2-wire matched impedance or the Zepp fed Hertz aerials, the only necessity is to have a suitable coupling line between the output coupling coil and the aerial. Full information about U.S.W. aerials has already been published in the Eddystone Ultra S.W. Guide. The aerial itself, which for the amateur 5 metre wavebands needs to be one length between 8 feet and 8 feet 6 inches long. The Eddystone telescopic aerial No. 1038 makes an excellent radiator and is easily erected anywhere, while portable if required.

LIST OF PARTS
TRANSMITTER

EDDYSTONE.

	Price
1 Microdenser, Cat. No. 900/20	3/9
1 Universal Valveholder, 4-pin, Cat. No. 1015	1/3
2 Universal Short Wave Valveholders, 7-pin, at 1/8 each	3/4
1 Extension Control Outfit, Cat. No. 1008	1/3
1 Adjustable Insulated Bracket, Cat. No. 1007	1/6
1 Frequentite Terminal Saddle, Cat. No. 1046	1/0
1 Pointer Knob and Dial, Cat. No. 1027	1/3
4 Insulating Pillars, $2\frac{1}{2}$", Cat. No. 1028, at 6d. each	2/0

Total, 15s. 4d.

MISCELLANEOUS.

1 Parmeco Microphone Transformer, Type MT2
1 Parmeco Driver Transformer, Type D2A
1 Parmeco Output, Type O2B
1 Dubilier .006, Type 670
1 Dubilier, .0003, Type 670
1 Erie 5,000 ohms 1 watt
2 Terminals
$1\frac{1}{2}$ yards of 4-way Cable
4 Wander Plugs
2 Spade Terminals
1 3-point On-Off Switch
1 $4\frac{1}{2}$ volt G.B. Battery and Clip
1 16" length 3/16th Copper Tube
1 Panel, $9\frac{1}{4}$" × $8\frac{1}{4}$" × $\frac{1}{16}$" Ebonite or Bakelite
1 Baseboard, $9\frac{1}{4}$" × $7\frac{1}{4}$", $\frac{3}{4}$" Plywood
1 Wood Strip, $7\frac{1}{2}$" × $\frac{1}{2}$" × $\frac{1}{2}$"
2 or 3 yards Connecting Wire
4 1" × 6BA R.H. Screws
2 $\frac{3}{8}$" × 4 R.H. Wood Screws
2 $\frac{1}{4}$" × 6BA Screws and Nuts

Approx. Cost Miscellaneous Parts, £2 12 6

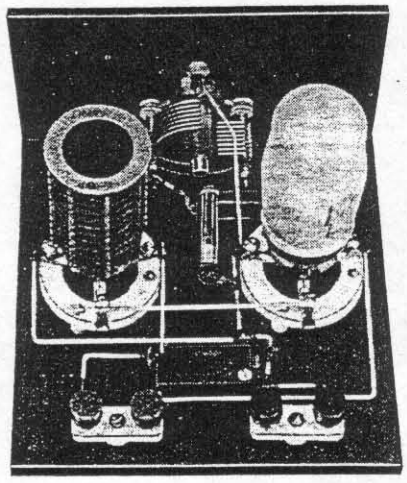
VALVES.

2 B.21 Valves, 7-pin, Osram, at 11/- each
1 P220, Mazda 6/-

Approx. Total Cost, including Valves, £4 16 0

SELF MODULATING OSCILLATOR

FOR LINING UP I.F. STAGES



The photograph shows the simplicity of this useful Home Oscillator.

This Oscillator will prove a useful piece of equipment for the experimenter's workshop. It is really a miniature transmitting station using very low power. The principal object of the Oscillator is to simplify the lining up of intermediate frequency stages. For the conventional 450 kc. and 465 kc. intermediate frequencies, an Eddystone 4-pin BR coil is necessary, the dial reading being 47° and 43° respectively. By using suitable coils the Oscillator can be worked on any wave length from 12 to 2,000 metres.

With the many reliable stations now transmitting on advertised frequencies, there will be no difficulty in making an accurate calibration.

CONSTRUCTION.

The photograph, together with circuit diagram, provides a clear insight to the assembly and wiring. It should be noted that the valveholders are mounted with grid terminals pointing towards the panel. The 2 volt valve is an HL2 type and 60 volts high-tension will be sufficient.

CALIBRATING.

Calibration is done by connecting valves, batteries, etc., and placing the oscillator alongside a receiver. Tune receiver to a known station, and by using in the oscillator a coil which is known to cover the wavelength of the station being received, carefully rotate oscillator control knob until a high-pitched note is heard superimposed on the transmission being received. This indicates the oscillator and transmitter to be in step. Should the note from the oscillator be too loud it can be reduced by moving unit slightly away from the receiver. This also sharpens tuning and ensures more accurate calibration. If a stronger signal is required, it is recommended that the aerial from the receiver be closely coupled to the oscillator coil.

LIST OF PARTS.

EDDYSTONE.

	Price
1 Microdenser, Cat. No. 900/100	5/-
1 Pointer Knob and Dial, Cat. No. 1027 ..	1/3
2 Frequentite Valveholders, Cat. No. 949, 4-pin, at 1/5 each	2/10
2 Frequentite Terminal Saddles, Cat. No. 1046, at 1/- each	2/-
1 4-pin BR Coil, Cat. No. 932	5/-

Total, 16s. 1d., plus coils extra if required.

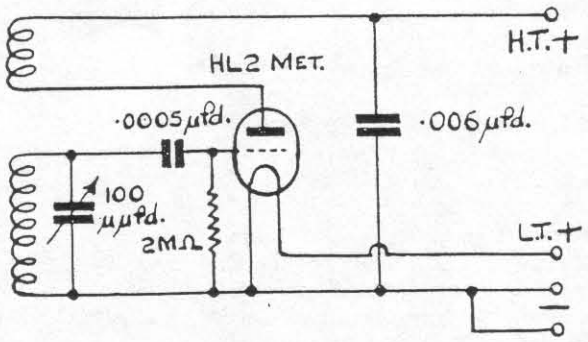
MISCELLANEOUS.

1 T.C.C. Condenser, M type, .0005 mfd. ..
1 Dubilier Condenser, 670 Mica type, .006 mfd.
1 Erie 1 watt Resistance, 2 megohm ..
1 Panel, 4″ × 6″ × $\frac{3}{16}$″, Ebonite or Bakelite ..
1 Baseboard, 6″ × 6″, $\frac{3}{8}$″ Plywood .. ..
Screws, 8 R.H., $\frac{3}{4}$″ × 4 .. ..
Screws, 5 R.H., $\frac{1}{2}$″ × 4 .. ..
Connecting Wire, Washers, Soldering Tags, etc.

Approx. price, 5s. 6d.

VALVE.

1 Mazda HL2 Metallised	4/9



CIRCUIT DIAGRAM.

- Matching, Impedance for Speakers.-

- For all except the solid state models **Eddystone** used the then standard impedance of 2.5/3 ohms for its audio output stages. The speakers required were of course readily available then, not so today when the standard is more likely to be 8 ohms. If you can find a suitable size with a 4 ohm Z then no problem, just use it ! The actual mismatch will be minimal and is certainly not going to do any damage to your Eddystone.

- With the 8 ohm speakers there is another easy way out, one taken with much success by many members. Just use 2 of them, identical 8 ohm speakers in parallel, properly phased. If you have the Eddystone diecast speaker and need a new unit for it then two of the 5", 8 ohm speakers will be ideal fitted back to back in the case.

- I am not too happy with the solution as proposed by one EUGer, to wire a 3.9 ohm 1 watt resistor across an 8 ohm speaker, okay so it does give you 2.6 ohms but it will also bleed away 2/3 of your available AF power !

- - - - -

- The 880/4 Calibrator Unit.-

- Ian mentions that on his 880/4 he can use the calibrator unit whilst having the BFO turned off and wonders whether this is a fault symptom, he has only had the set since the **NEC** show and is still learning to drive it - a very different proposition to his other Eddystone, an 888.

- This is quite okay Ian, the calibrator is meant to be used on AM mode and to do this there is a small amount of the calibrator signal leaked out of the unit into the **IF** amplifier to produce a beat note.

- - - - -

- EP20 Blowing Fuses.-

- Whilst there was a simple reason for this problem it did take Colin quite a while to locate the cause. All electrical checks on the AC circuitry came up negative (on AC !). It was eventually decided to try running the set with the fan disconnected, sure enough this cured the tendency to blowing fuses every half hour or so. The fan was dismantled and checked out thoroughly, it was immediately found that the rotor was difficult to turn by hand, and the fan would get uncomfortably hot when run separately - off a 110 volt supply.

- Since no direct 110 volt replacement could be located a 240 volt version that was correctly sized was fitted and all was back to normal.

- At this point, since the oldie was redundant it was ripped apart and a partial short in the coil windings was located, almost certainly what had happened had been, - lack of lubrication meant hard to turn, this meant an overheat of the winding as extra current was drawn, this led to the short in the winding, hence the blown fuses.

- It is imperative that the EP20 is not run for long when cased up and with out the fan running. Heat build-up is quite excessive and there will almost certainly be some internal damage caused.

- - - - -

- Band Spread Coil Packs for the 358X, ? -

- Having in the past owned several HRO models, Sam is wondering whether there have ever been any band-spread coil packs made for the S.358X which he has just bought for restoration ? He also wonders whether there have ever been any articles in the SWM or other mag; for mods to make the existing coil packs into bandspread ones for the amateur bands ?

- The simple answer to the first half of Sam's question is that no Factory made B/S coil packs are known, but it could be that somebody out there may contradict me there. As to the second bit - a magazine article on modding existing coil packs, I do have a faint recollection of hearing about this somewhere, at some time, in the distant past. But where ??? I have a feeling it may have been way back when I was in the RAF and a certain Warrant Officer took pity on me and allowed me to use his shack, was it RAF Locking, G3 IRS ? Come on somebody - help Sam with his problem, and me with my memory !

- - - - -

- I.C.E. -

- This has meant different things at different times, to a confirmed ice cream addict like myself it means only one thing !

- I first learnt to use it when applied to Internal Combustion Engines, then later came the digital revolution and I used it to refer to In Circuit Emulation, then along came In Car Entertainment (they call that noise 'entertainment' do they ?).

- In Car Entertainment means different things to different people, Cyril has now completed the installation of his EC10 II into his Mark II Zodiac. That is entertainment so far as he is concerned, despite having less than ONE watt of audio output he can listen confortably to the EC10 whilst driving. His previous installation had been of an earlier EC10 in his mark I zephyr, acquisition of the new(er) Zodiac meant he had to look for a new(er) EC10, hence the Mk II.

- Tuning whilst driving is a no-no for Cyril and so he tunes in the station that he wants before take-off. There is no problem with drift - either mechanical caused by vibration or from electronic causes, although the usual slight re-tuning maybe necessary on SSB signals.

- - - - -

- Eddystone Catalogue Number 1134 Loudspeaker.-

- An EUGer has come up with a rather poor condition, but eminently restorable sample of this model, it was listed in the late 1930s and the only set that I know it was used with was the ECR, or the simpler broadcast version the ERA 7.

- As found at the car boot sale this speaker had a high to low impedance transformer fitted, the original speaker was missing. A suitable replacement unit has been located and removed from a defunct radiogram.

- First steps towards restoration involved stripping the non-original paint from the sheet metal case and then re-painting it in the rippled surface paint that it had borne when new. For this job all the internal and external fittings were removed and the case was sprayed, then left several days for a complete drying job.

- Refitting of the speaker and associated transformer came next, and the speaker unit was tested, using an All World Eight receiver from my collection. As the speaker was to be used with this model in my shack I utilised a three way length of mains lead of the old cotton covered type to connect the High impedance winding, centre tapped, to connect to the output of the AW8, which is a push pull stage. Reproduction is good comms; quality, with no nasty resonance points and smooth cut-off of both high and low frequencies.

- - - - -

PRACTICE FOR WAR - 1939 STYLE

Graeme, G3GGL, looks back at Eddystone's contribution

The advertisement on the following page was placed in the Short Wave Magazine for March 1939 by Webb's Radio, the retail subsidiary of Stratton & Co., the manufacturers of Eddystone radios and shortwave components. The lower section, for a neat self-contained CW rig, complete with built-in power unit, is stated as being designed for the C.W.R and R.N.W.A.R. No, these were not railway companies, but Reserve Services of the Crown. The clouds of war were gathering and the authorities were quietly harnessing the talents of Britain's amateur radio enthusiasts, just in case 'push' came to 'shove', as it did later that year.

The first of these, or to give its full title, the Royal Air Force Civilian Wireless Reserve, was formed in 1938. Arthur Watts, G6UN, President of the R.S.G.B., had just returned from the Cairo Radio Conference where he had been fighting for the retention of the Amateur Bands in the face of commercial and military pressures. He was requested to attend a meeting at the Air Ministry by Wing Commander Joe Stewart, VS1AL, of the Directorate of Signals. The outcome was the support of the R.S.G.B. Council for a civilian reserve of licenced amateurs between the ages of 18 and 55. They would be taught R.A.F. procedure and instructed how to operate and service R.A.F. equipment. They would visit R.A.F. Stations and be issued with crystals to enable them to operate on service frequencies 2583kc/s and 2727kc/s. A grant of £2 (today's value about £100) was payable on passing a Morse test at 18 words per minute (the standard R.A.F. air signallers' speed) and opportunities were made for promotion to commissioned rank.

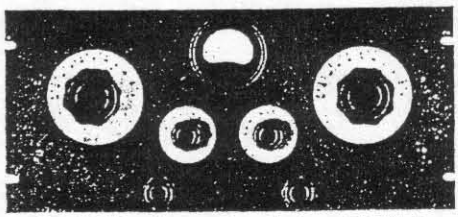
The second of these was the Royal Naval Wireless Auxiliary Reserve, which, being the Senior Service, dated back to 1932! Bevan Swift, G2TI, President of the R.S.G.B. that year, together with Secretary John Claricoats, G6CL, and Arthur Watts, G6UN, were invited by the Admiralty to attend a meeting called by the Director of Signals. The outcome was the formation of the R.N.W.A.R. The Reserve went into business with procedure exercises transmitted from the Admiralty on GYB (Cleethorpes) station on 3325 metres. Later on crystals near the 80 metre band were provided for members to communicate at the Senior Service speed of 22 words per minute.

During the last week of August, 1939, news reached R.S.G.B. Headquarters that members of both the Naval and R.A.F. Reserves had been called-up. A week later Nazi Germany marched into Poland and Britain retaliated by declaring war on the Fascist Dictator's regime. On 4th September the first R.A.F. Reserve Wireless unit landed in France under the command of Flight Lieutenant C.S.Goode, G2OH, and Sergeant Leslie Hill, G8KS.

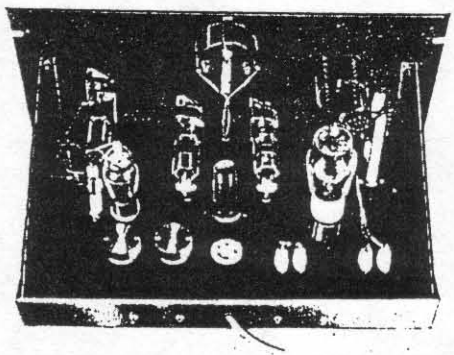
A fortnight later the first two radio amateurs made the ultimate sacrifice. Jack Hamilton, G5JH, and Kenneth Abbott, G3JY, both Telegraphists on *H.M.S. Courageous*, were lost when the ship struck a mine on September 15th 1939.

WEBB'S APEX 3 BAND EXCITER OR COMPLETE TRANSMITTER

A very cleverly designed and economical three stage crystal and E.C.O. Exciter unit, built on to a standard Eddystone 19 in. panel, with appropriate brackets and chassis.



EXCITER : Front Panel view APEX 3.



EXCITER : Rear view of APEX 3.

The general design of the instrument covers very flexible frequency change on any of three wavebands with instant switching from one waveband to another. Provision is made for a selection of three crystals, all of which may be left inserted in the transmitter, whilst a fourth position of the crystal control switch automatically brings into operation the E.C.O. valve. The circuit covering this valve - an 89 is employed—ensures extremely stable E.C.O. control, with very easy provision for checking E.C.O. frequency against any crystal in use.

The entire line-up of the exciter is as follows: 89 E.C.O., 6N7 (metal double triode), the first section of which is used as C.O., the second as doubler or buffer, driving into an RK-39 beam power tetrode. The tank circuit of the RK-39 P.A. is designed to cover three wavebands without coil changing, the condenser control being ganged to a coil selector switch to adequately cover the 10, 20 and 40 metre amateur bands.

Cathode keying of the RK-39 is employed, and an output of up to 15 watts R.F. can be obtained from the instrument. Loose-coupled link circuit is provided for direct coupling to the aerial (80-ohm feeder) or for linking to a final independent P.A. stage. A high-grade moving-coil milliammeter, 2½ in. diameter, is fitted.

EXCITER: Price, complete with all tubes, coils, and one crystal (without power pack) **£15 10 0**

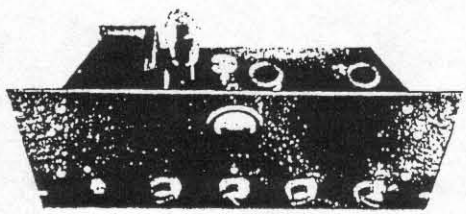
POWER PACK: This 450-volt Power Pack, with necessary filament supply, built on to independent Eddystone panel, with appropriate brackets and chassis **£6 10 0**

This power unit is so arranged that a further power unit for, say, the modulator, or other additional equipment may be built on to the one chassis; i.e., only one half of the chassis is occupied.

A SPECIAL 10-15 WATT CRYSTAL CONTROL TRANSMITTER, designed originally for use with the C.W.R. and R.N.W.A.R., it is capable of operation on all amateur frequencies, in addition to the special frequencies allotted by the above reserves.

The entire instrument is built on an Eddystone Standard 19-in. panel with appropriate brackets and chassis. Crystal oscillator circuit employs a 59 tube driving a 59 as a neutralised P.A., giving an extremely stable C.C. note, with an R.F. output of up to 15 watts. Built on to the single chassis, in addition to the transmitter proper, is a power pack with ample output for efficient drive, and employing an 80 type rectifier.

Provision for keying in the cathode circuit of the second 59 is made, while the P.A. coil is fitted with an adjustable link suitable for attachment direct to 80-ohm feeder line.



C.W.R. TRANSMITTER.

PRICE OF INSTRUMENT COMPLETE with tubes, one set of coils for any band, but exclusive of crystal, is **£8 0 0**

Valpey Crystals, 1.7, 3.5, or 7 m.c., in enclosed mounted holder 15/6 extra.
Additional sets of coils 7/6 per set.

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(C. WEBB, LTD.)

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41 CARRS LANE

14 SOHO ST., OXFORD ST., LONDON, W.1 PHONE: GERRARD 2089

Published by The Short-Wave Magazine, Ltd., 84-86 Tabernacle Street, London, E.C.2 and printed by S. J. Fraser & Co., Ltd. at the same address. Sole agents for Australia and New Zealand, Gordon and Gotch (Australisia), Ltd.

- Talk of the Devil.-

- Well no, not really. More like talk of the S.215 Transmitter in this case. No sooner do I mention it in the last but one issue than I get news of it from another source, the horses mouth since we are speaking in cliches !

- Amongst the loads of paperwork that has become 'ours' at EUG is some from the home of the late Geoff Woodburn. Foremost for the history and Ephemera buffs amongst us at EUG is a poorish copy of part of the Blue Print Register which covers the period from 1932 (BP101) up to the end of May 1946 (BP575).

- This is like finding Bluebeards Treasure Trove as it enables me to pinpoint many dates and BP numbers that were in some doubt. Proves Graeme right about the 1939 date of the ECR as compared with my date of @1936, ah well can't be right every time.

- Anyway what it does mean for YOU EUGers out there is that we have loads more info to go in future N/letters, only trouble will as usual be the size limitations on the N/letters ! Am writing to you Tor, never fear !

- - - - - -

- The S.215 VHF Base Transmitter.-

- Whilst our previous information on this 6 foot rack mount job was to the effect that it had been developed for the Metropolitan Police just prior to the onset of WW II - info that we were sure of as it came from the legend on one of the blueprints I have here. Well here we go with info from Geoff's copy of the BP Register, it would now seem that various other County forces also equiped their HQs with the Eddystone VHF equipment for communications between stations and the mobile patrols.

- From the BP Register we learn that;-

BP 395 to BP 400 covered the first version as supplied to the Met;
BP 401 to 404 covered the companion S.214 VHF receiver units.
BP 405 & 406 covered the interconnections for the Tx and Rx.
BP 473 covered the valve layout and types, of the S.215.
BP 501 to BP 508 covered the later version the S.215C.
BP 512 to 515 covers the installation of the S.215C for the Stoke Police HQ.
BP 527 to 532 covers the installation for the Dumbarton Police Force HQ, as does BP535 & 536.
BP 548 shows alternative control layouts as requested by some Police Forces. It is now designated the S.215D.
BP 558 covers the installation of the S.215 and associated Rx for the Lanarkshire Police HQ.

- All this has brought us out of the war years and up to January of 1946, so the S.215 had a pretty long period of production, all at the BathTub. And alongside it went the companion S.214 Receiver and the mobile versions the S.440/450 VHF Tx and Rx sets. (More on the 440/450 later).

- There should be a 215 still existing somewhere out there, surely somebody can come up with a bit more gen on it ? PLEASE !

- - - - - -

- Remember the ATLANTIC TWO ??? -

- No sooner do I find a hitherto unknown model - the Atlantic Two, than Guess What Happens ??? I find out that there was also an Atlantic Three !!!

- Again I refer to the copy of the Blueprint book and I get BP 119 which tells me that it was for the Atlantic Three (wiring), whilst BP 119A was for the Atlantic Three (circuit diagram).

- It seems that I can never keep up with these 'missing' models that keep turning up. Just recently I did a List of all the pre WW II models that I knew and had info on, sent copies to various persons for their files and now that

list is in need of revision. Methinks that an addendum page is called for so I must get down to it and churn out another list, and I haven't finished the Part 2 list of post WW II sets ! No details yet as to the circuitry or looks of this Three but I shall keep hoping and digging, so watch your N/L.

- - - - -

- 75 words per minute Morse Record.-

- In a previous Newsletter I had mentioned that the world record holder for receiving morse was one gent by the name of McElroy, an american whose name is well known to many who have a long time interest in radio.

- I also mentioned that he had been connected with Strattons/Eddystone, as working for them on the other side of the Pond in fact.

- From Terence Wood G4 MIZ comes proof of the above facts. His photocopies received here are from the Short Wave Magazine of August 1939 and they comment that he (McElroy) had taken perfect copy for 15 minutes at 75 words per minute using a typewriter, thus retaining his world speed record. For interest the code messages were sent by auto-transmitter and conducted by the Federal Radio Commission, the tapes were sealed prior to the tests !

- McElroy is listed as being the American Buyer for Webbs Radio, which was itself the retail arm of Strattons/Eddystone.

- 75 w.p.m !!! wow and wow again, who can even keep up half that for 15 minutes ? To my knowledge this record still stands today.

- - - - - -

- Polythene Poisoning. -

- A letter from Brian Cauthery, VE3 DFC, in Ontario Canada. Brian states that it is not the polythene per se that is attacked by the salt water in the marine atmosphere. It would appear that the culprit is the PVC that is used for the outer sheath. This contains 'plasticizers' mixed with the PVC to make it more flexible. When these molecules migrate due to incomplete mixing of the compounds then they will attack the copper metal screening en route to attacking the polythene dielectric.

- Now then somewhere in the past I can recall being told that white outer Coax must not be used out of doors whilst black or brown outer coaxes are okay to use out of doors ! Can this be something to do with the kind of 'plasticizers' used in the outer cover ?

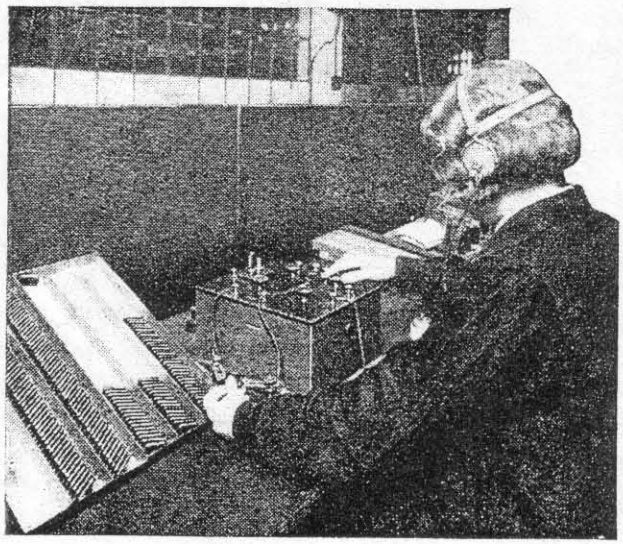
- - - - -

- Germanium Diodes of the GEX Family -

- Can somebody out there dig out the data sheets for the GEX 13, 34, 66 type of diodes as used in many Eddystone Rxs, please. These are no longer available but it ought to be possible to locate comparable, equivalents from the modern range of Germanium diodes. DO NOT be tempted to substitute silicon diodes for these as the voltage drop across a Ge junction is but half of that across a Si junction ! In detector or AVC circuits you would get some peculiar results !!!

- I shall pass on the necessary info to the members concerned and even do a feature in the N/L if I get this info, so please ---.

- - - - -



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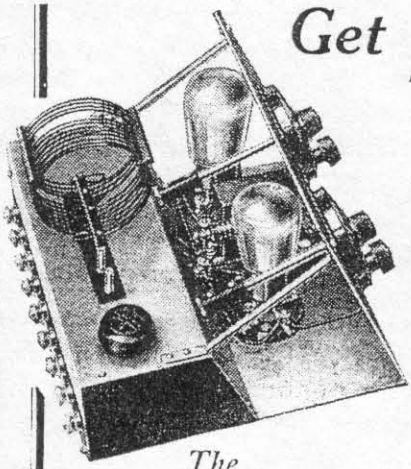

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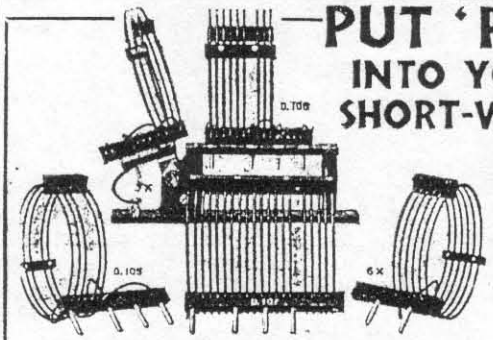

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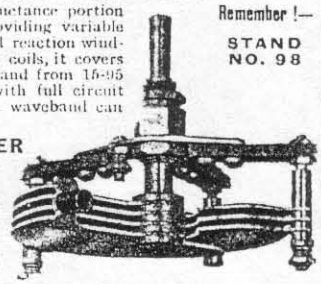
SHORT-WAVE INDUCTANCE UNIT

This unit forms the complete inductance portion for a short-wave receiver, providing variable aperiodic aerial coil, grid coil and reaction winding. Complete with stand and 5 coils, it covers efficiently the whole short waveband from 15-95 metres. Price **22/6** complete with full circuit details. Extra coils for B.B.C. waveband can be obtained.

Remember !— STAND NO. 98



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EDDYSTONE

SHORT-WAVE APPARATUS

Advertisers like to know you "saw it in the 'Wireless Magazine'"

- Those Eddystone Tv Sets of the '60s.-

- Well it does look as though we might be getting somewhere with this, at long last. A letter from one EUGer who was employed at the Bathtub over the period that these Tv sets were made makes an offer of some 'info' on them. I am now waiting for the info to arrive 'chez-moi' and I shall be able to share it with all of you. Should please you Ian, and you Tom !
- Now **IF ONLY**, somebody could tell us about the 720 'Yachtsman' that would make my day, so **PLEASE !!!**

- - - - -

- Letters without an Address ? -

- It has happened again, will Steve who has a need for help over a noisy 750, please Steve write again with your surname and address. I cannot even make out the postcode apart from the 'Quality Street' advert so you will not be getting any reply until you tell me who you are - don't be shy Steve.

- - - - - -

- EUG Badges. -

- Graeme still has a few of these available at the old price, we shall then have to re-order a new supply and who knows ? If you want a good quality enamel badge to show the world that you are an EUGer then send of your £2.00 to Graeme - he will get it to you pronto.

- - - -

- Sid Bolam's Gift.-

- This was an offer by Sid of a good complete HRO receiver, he wanted it to go to a collection or museum.
- Well it is a bit different to our EUG stuff so I wrote off to the Bletchley Park Trust, the HRO was after all used by them and many of the WW II 'Y' operators. Many others were used by the other services.
- A nice letter from the Bletchley people to say that they had contacted Sid and were making arrangements to collect - thanks Sid !

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- Queries in Issue 36.-

- Well top of page 13 I mentioned a number of schematics that I wanted further info on. Got a letter from Sam that answered the query re the 1937 5 valve superhet, thanks Sam. Also the hoard from Geoff Woodburn's shack has answered the other points, very nice that I can fill in the gaps in my knowledge as it does mean that I shall be able to share it all with EUGers either in answer to your letters or in later issues of your N/letter.
- The 5 metre Radio-Telephone is featured in the Short Wave Manual that Eddystone published in 1938 - a 4 page article, so that is settled too.
- Thanks to all who did write in with info.

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- Economy Lamps and QRM.-

- Ross Paton in New Zealand writes in and mentions that from his personal experience the QRM levels from just one of these lamps in the home is quite bad enough - he says that a houseful of them would render any comms receiver useless. Seems that the powers that be no longer care just what QRM is produced these days and the time will soon come when the broadcast and shortwave spectrum is one long drawn out buzz - and we thought that Tv QRM was bad - looks like worse is to come. How long before one has to purchase a desert isle in midocean when one wishes to trawl the bands for Dx ?

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- E.U.G Net on 80 ? -

- This is just a suggestion from Anthony Richards, so far ! Anthony has mentioned the formation of an EUG net to Graeme and has even made the suggestion that it should - perhaps - be in the region of 3627 and has further suggested that it be on the first Sunday of each month. This will avoid conflict with the WARS net which is on the Saturday.
- Since there are more than 60 EUGers with a 1st class licence, in the UK, and a number also in 'near Europe' then this could be a viable suggestion.
- Any EUGer with thoughts on the matter should contact Graeme Wormald, G3GGL or Anthony Richards, GW4RYK who will sort out details should there be any degree of interest.

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- ABSOLUTION -

- Okay Mike, you can start to breathe again ! It would seem that your panic stricken letter to Graeme has done the trick and you are once more accepted into the EUG fold.
- Graeme has accepted your grovelling apologies Mike and asmits that he had not really expected that his diatribe on the matter of unpaid subs would cause such trauma amongst EUGers.
- Okay to hear that you are now one of the Senior citizens and that your time will be your own, once that you have got yourself sorted out. Mike has nobody told you that it is at this time of life that one has to START to work, for oneself ?
- Having been so close to Erasure, and been reprieved, now you can begin to do all those things that you have been putting off for so long. As a first project the DIY Panadaptor sounds great and I am digging out some info that I got from another EUGer, have fun.

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- The Scientific Two.-

- A query from David Fletcher, G3TVM, as to whether the Sci-2 ever did exist. Well that is simple, The Factory Bluprint Register for 1932 lists BP101 and BP102 as being the wiring and the circuit diagrams for the SCI-2. There you are David, as well as the Sci-3 and the Sci-4 you can add this to your list, by the time you read this you should already have received from me a typed up copy of the contents of the Blueprint Register to devour at your leisure. EUG will make copies available to EUGers in exchange for £2 to cover copying and postage. The original handwritten register is not in too good a state so I was forced to type it up myself for copying, by Jim Murphy. As usual he did a very good job.

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- Reception Set R.213/3.-

- Stephen Turrell writes asking for info on his 770 which is identified as R213/3 on the model plate.
- As Graeme says the additional number ZA54746 identifies this as having been an Army set and info to EUG from 'a member' is that the /3 version had no external relay facility but that it did have a provision for operation from external HT and LT supplies. Apart this the set should conform to the 770 manual that Graeme has sent to you Stephen. I am sending you an extract from Army E.M.E.Rs which should answer your query in full.

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- The Eddystone Active Aerial.-

Another one of my SOS items answered by an EUGer ! This AA unit was apparently a 'bought in' item and was listed as Eddystone catalogue number LP3382, the one that John Leonard has is serial number 0128 and has the additional information on the plate to the effect that it was manufactured for Eddystone by Barnett & Longmore Ltd of Coventry. So now we know of two examples of this unit in the hands of EUGers, could it be that there are more of them out there ? Tnx John.

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- EUGer - Silent Key.-

- It is sad to lose any member of the Group but with the passing of Dave Tizard we lose a very knowledgeable member who had been able to help a number of other EUGers with repairs and advice.
- Dave died on May 17th after a short illness and many members of his local radio club were present at the funeral. He held the call G8RHF and had been a member of The South Dorset Radio Society since December of 1961.
- Can EUGers please note that this means that no more requests for help should go to Dave's QTH, we do not wish to inconvenience his widow and family.
- My thanks to Ken O'Brien and the 'CATSWHISKER' for the above info. Ted.

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- FREE MEMBERS ADS.-

- EXCHANGE, model EA12 required and must be clean condition inside and out & in GWO. Can offer in exchange superb Olympus OM10 SLR camera, Auto-S, 50mm/1.8 lens. Also Miranda 28-200mm Zoom lens with Macro facility and Olympus T18 flash, also Olympus single/sequence power winder. All with E.R cases and plus 2 UV filters. Prefer you call and inspect/collect as no transport. Letters first please to R.Taylor, 23 Lancaster Close, Clive St, Bolton, BL1 1PJ.

- FOR SALE, model 940 in clean condition and GWO, £125, or may exchange in value for Hi-Fi equipment. Please ring Tony on 01493-332793 (Gt Yarmouth).

- WANTED, Eddystone receivers still wanted, dead or alive to complete collection, 890, 930, 358, 960, and any 1000 series please. Collection possible, payment is waiting, any scrap sets please for spares. Ring Peter Lepino on 0374-128170 anytime (Bookham,Surrey).

- WANTED, Panadaptor model EP14 or EP17R, also Crystal calibrator unit and BFO/CW unit for 990R, please phone Ray Wood on 01844-216536, evenings only.

- WANTED, model EC10 Mark II in excellent condition. This may be a tall order but surely somebody has one gathering dust in the bottom of their wardrobe ? Top price paid for a good one, please ring Gary on 01232-711976 (Belfast) or please write to Gary McSweeney, GI4 CFQ, 109 Twaddell Ave; Belfast, BT13 3LG.

- WANTED, good example of 770U receiver by member willing to pay a reasonable price. Please write to Pete Neave, G4 DAN, 59 Harwich Rd, Mistley, Manningtree, Essex, CO11 1NB.

- WANTED, model EB35 in good condition, please phone in first instance to Terry, on 0114-288-6226 (Sheffield).

- WANTED, HELP ! I am still wanting info on the model 720, Yachtsman or the solid state EY11, Yachtsman. On the former I have a sales brochure on the latter I have so far ZILCH. They DID exist so somebody must have some info on them, PLEASE share it with us all. Ted Moore.

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- Buying your EC10, New in 1970.-

- In April 1970 when Roy Elwen wanted an EC10 he went to Imhof's of Oxford Street in London - an Eddystone Dealer of course !

- The resulting correspondence, copies of which I have received from Roy, show just how much 'business' and the 'dealer/customer' relationship have changed over the intervening years.

- I doubt that there is any company today who would go to such extremes as did Imhof's to ensure that a customer received his order in good condition, got all the necessary 'bumf' and had all his particular queries answered so fully. So often these days I hear of customers who get the "I've got your cash and you've got the product so that is it " approach. I had a problem recently myself over supply of a book, listed as 'in stock'. After six weeks and two phone queries I wrote directly to the M.D of the company and to the Trading Standards people. It still took another 2 weeks to get my book, and only the T.S people replied to my letters.

- These items of 'ephemera' relating to Eddystone dealers are becoming a big sphere of interest for a number of EUGers, Stan has hundreds of copies of s uch letters from many dealers which span the 30s to the 80s period.

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- How to use your EC10 on SSB.-

- Although not designed for SSB reception the EC10 series can be used for this mode providing that some care is taken with the control settings.

- First of all it must be appreciated that some bands are UPPER side band whilst others are LOWER side band. For your guidance the following Ham bands frequencies will be of interest.

160 metres	- 1.8 to 2.4 Mc/s	- LSB.
80 metres	- 3.4 to 4.0 Mc/s	- LSB.
40 metres	- 6.9 to 7.4 Mc/s	- LSB.
20 metres	- 13.9 to 14.5 Mc/s	- USB.
15 metres	- 20.9 to 21.5 Mc/s	- USB.
10 metres	- 27.9 to 30.0 Mc/s	- USB.

- Having discovered a side band signal first of all determine if it is 'U' or 'L' by reference to the above, then switch out the AGC and set the BFO control knob to the appropriate position, U or L, retard the RF gain control and advance the AF gain control (the signal will increase when the AGC is taken out). Give a final adjustment to the BFO or a 'tickle' on the tuning knob and the 'duck' will become recognisable, extreme delicacy with the controls is necessary, but with a little practice mastery will be achieved and a lot of interesting amateur contacts will be at your finger tips.

- THE ABOVE IS THE VERBATIM DETAILED DESCRIPTION SUPPLIED BY IMHOF'S ON HOW TO TUNE SSB SIGNALS WITH THE NEWLY SUPPLIED EC10 RECEIVER.

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- COLOPHONY, and ASTHMA.-

- Now as one who has been an asthmatic all of my life, and who has also been a DIY wireless enthusiast since my very early teens, I was very interested in the information that the root cause may very well have been Colophony.

- No this not some new mode of Telephony or Telegraphy, this Colophony is one of the constituents of the resin flux that is used in soldering.

- The flux fumes containing Colophony can cause breathing difficulties evn in those not subject to asthma and it is essential that soldering should be done in a lieu where there is plenty of ventilation. Just imagine the manner in which you bend over the upturned chassis to solder a joint, the fumes rise straight up and go into your throat and lungs - result an asthma attack !!!

- Now in our household both my father, and his father were 'into' soldering

for the purpose of 'wireless building', both my father and I suffered from quite severe asthma attacks and yet at no time did we associate the soldering flux with our asthma. Later on whilst working in the Post Office and in factory type environments we had no access to information on this subject, nor did the employers make any attempt at fume extraction, although I believe that all factories these days must have fume extraction equipment.

- I guess the answer is that if you are soldering at home then do have some form of ventilation - maybe a small fan to suck the fumes away from the bench , maybe even you should consider using a mask such as are sold by RS. Whatever you do, try not to breathe those flux fumes.

- Query, did those 'Fluxite' ads ever mention this matter I wonder ? If so then my father, and I missed that ad. Does any member remember ?

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- Spares for Tuning Drives.-

- Many of the tuning drives for such as the 840A, 670A etc are interchangeable so if you are missing a part for one model you can look out for spares for other models to repair your favourite model. The parts referred to are such as the various pulleys, the gears, the pointer, etc; even many of the 'vernier' scales are interchangeable.

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- Burned out IF Transfos.-

- A letter from one member mentions that it is just not good enough to take out an open circuit component, in this case an IFT, and fit the hard to get replacement then power up the set.

- James mentioned that he did this and after some few minutes the new IFT also went open circuit. He did some checks and found that there was a short in the IF valve so that the anode went to earth when plugged in, thus the full HT went to earth through the IFT winding - result two burned out windings in two IFTs ! And James now has to locate a third IFT to fit after he has bought a new valve.

- A similar thing happened when Alan replaced the burned out resistors in the psu of his set. Located in the outer ends of the full wave secondary of the mains tranny these had apparently blown when the reservoir condenser went very leaky, not having noticed this Alan fitted new resistors and Voila ! They got hot, and hotter, and then failed.

- The motto must be, remember that components usually fail as a result of some other circuit anomaly, leaky condensers, duff valves, etc; CLEAR the CAUSE before you fir the new item. Okay I know it seems the logical thing to do but from your mail not everybody thinks logically.

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- END IT - END IT - END IT -

- Thats it again, all over for another two months, Yes Sam the idea of a monthly issue is good, wonderful in fact, BUT ! How many are prepared to pay double subs for double the annual Newsletters ? And how about Eddystone Radio and could those volunteers cope ? For the time being Sam it is just Pie in the Sky.

- Quite a lot of Nostalgia in this issue so I am prepared for any brickbats from members. The fact being that with all the mountain of oldish info that has come in recently this is the only way that I can share it with EUGers. I now have copies of all 6 of the Eddystone Short Wave Manuals and EUGers wanting copies can have them at a Fiver a time for each issue (1-6)(1932-46). Pricey yes but they run to 40 or 50 A4 sheets each issue, but they are good value ! Ted.

WHAT SHALL WE LISTEN TO?

GRAEME - G3GGL - TAKES A LOOK AT TWO LISTENERS' CLUBS

EDDYSTONE Receivers cover the spectrum from 10kc/s to 1000mc/s and we have members who search the waves from one end to the other, but most people listen to something that's there. What I mean to say is that they listen to scheduled transmissions of one sort or another, usually broadcast stations. Two wonderful sources of reference are 'Passport to World Band Radio' and 'World Radio TV Handbook'. Splendid though these publications may be, they are already out of date by the time they hit the streets! And then there's a whole year to wait for the update.

So what's the answer? Right, I can hear the voices calling, subscribe to SWM! Of course, but you still only get one or two pages on each topic every month. Why not consider joining a specialist listeners' club, of which we have two excellent ones here in Britain, but which cater for members world-wide. Here's a few details of each.

- WORLD DX CLUB -

THIS IS A TOP CLUB for Shortwave Listeners and DXers. It publishes the monthly bulletin "CONTACT" of 64-plus pages. The information is all up-to-date and covers the whole world. "CONTACT" goes to members in 37 countries and is widely recommended by radio manufacturers and retailers.

World DX Club also offers the booklet "Transmissions in English" each May and December at £1 per copy. Annual Subscriptions are £12 second class mail, £13 first class. For full details write to Arthur Ward, 17 Motspur Drive, Northampton NN2 6LY, and don't forget an A5 stamped addressed envelope.

- THE MEDIUM WAVE CIRCLE -

A SPECIALIST CLUB, this is the only UK-based group specially for the radio enthusiast in Medium and Long Wave Radio. The Club, which started in 1955, produces "MEDIUM WAVE NEWS" ten times a year, covering the ground between 100kc/s and 1700kc/s. Broadcast, Pirate, you name it, anything you hear on these frequencies will be reported in M.W.N.

A year's subscription is £10; for further details send an S.A.E to the Secretary, Harold Emblem, 137a, Hampton Road, Southport PR8 5DY. If you would like to see a sample copy of "Medium Wave News" send Harold either £2, 4 IRCs or US$3 bills.

THAT'S TWO MORE WAYS FOR EDDYSTONE USERS TO INCREASE THEIR ENJOYMENT OF THE GREATEST HOBBY IN THE WORLD - LISTENING IN!

MORE MEMBERS' ADVERTS

WANTED: Cabinet/Enclosure for EC958/12 Receiver (Front Panel 7" high) please call David on 01788 574 099 (Warks).

WANTED: Eddystone Receiver Type 1990R/3, Freq coverage 25-500Mc/s. Call David on 01788 574 099 (Rugby)

FOR SALE: Eddystone 770U MkII (150-500Mc/s) Fair/good condition. £85. Prefer buyer examines and collects. Phone Alf (B'ham) 0121 475 8647

WANTED: Eddystone EC958, non-working preferred but anything considered: give condition and price to Terry G4NXN (Staffs) 01283 821 048.

WANTED: Collins 75S-3c Filter. Call Bill GM0KMG, 0141 562 4571.

WANTED: Models 730/4 and EA12 in sound unmodified condition; also output transformer for model 750. Ring Terry (NW Kent) 0181 777 2308

WANTED: AVO Coil Winder, with wave-winding gears. Call Terry (Kent) 0181 777 2308.

FOR SALE: 4 off OC171, used: 2 off OA2227, new, £3.50. Bill 01441 562 4571

EXCHANGE: Collins 75S-3/C, slight mechanical problem on pre-selector shaft. Nothing missing, otherwise works fine, exchange for EC958/5 or near. Call Bill (Glasgow) GM0KMG, 0141 562 4571.

FOR SALE: Eddystone EA12 £200; Eddystone EC10 £100. Both mint condition inside and outside. Manuals included. Sensible offers considered. Phone David (Hastings) 01580 830 558 Evenings/weekends

Don't forget that this is the last issue which will be sent to those who have failed to renew their subscriptions to E.U.G. for 1996/7. There are still 60 of you out there not yet renewed. If your envelope has the codeword REN after the address this is your LAST EUG Newsletter unless you RENEW.

(Unless you have renewed recently)

Send £10 (£11 overseas) to Graeme Wormald
15 Sabrina Drive, Bewdley, Worcestershire DY12 2RJ

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