

# Lighthouse

FOUNDED 1990

ISSUE 68  
AUGUST 2001



## The Magazine of The Eddystone User Group



***SHIP AHOY!***

***CAN THIS REALLY BE A STRATTON LOUD-HAILER?***

**MODEL 710/1**

# EDDYSTONE USER GROUP

A non-profit-making  
group for Eddystone  
Radio Enthusiasts  
Founded in 1990 by  
Ted Moore  
Issue 68. August 2001

## MEMBERSHIP DETAILS:

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from the telephone!)

## FOR SALE

FRG 100, Power unit, manual,  
seldom used, £225. CTU9, CTU8,  
ATU, Howes, £17 each. PRO-AM,  
mobile antenna, 10m, offers. ALL  
from SWL estate. Racal-Dana 9904  
counter, good condx £35.  
New Boxed Valves: 2/GZ32,  
2/5Z3GT, 2/5Z4G, 4/VR150/30,  
5/ECH81, 5/EL91, 12/EB91, 4/6BE6,  
3/6BA6, 12AU7, 3/ECC189. Loose  
ones, as new, also included. Total  
price £65 or exchange the lot for  
870A Bill, 0141-562-4571 (Glasgow).

EC10 IN VGC. Will the  
member who phoned this  
"For Sale" ad to Graeme  
please call again and  
enquiries will be passed on.  
Enquiries to Graeme on  
01299 403372. (Sorry!)

PCR2 Receiver £35 (WW2  
military b'cast) or swap anything  
interesting. Call Peter 01727  
839908 (Hertfordshire).

Two 940 HF receivers £200 the pair.  
One brand new 730/4 Rx in its  
original packing box, complete with  
mains lead, aerial plug, original  
operating manual, army servicing  
report and circuit diagrams, £350.  
Details from Rob, 01636-686392 or  
07730-395636, e-mail to  
[Robfilby@totalise.co.uk](mailto:Robfilby@totalise.co.uk)

Eddystone 990S, ser: KS0062  
GWO & mains lead £225 ono.  
Stephen 0207 603 1190 (Lon)

Eddystone IFT's type 856 –  
10.7Mhz, unused in cartons, free  
for postage only. Ron, 01253  
867308 (Lancs).

A small collection of vintage  
domestic sets are offered,  
preferably as a job lot but may  
split, buyers to view and make  
offers; (from a deceased's  
estate). K.B.Rhapsody  
mains/batt 4-valve set; Philco  
4valve mains/batt set; Grundig  
Yachtboy c.1975; Bush transistor  
large round dial, (TR82B?) two-  
tone blue c.1960.. call Annette  
Nicholls on 01527-832565  
(Bromsgrove, Worcs.)

## WANTED

Model 840 (half-moon dial) to buy or  
would swap for 750.  
Also pair of brackets to convert 850/4  
from bench to rack mounting. These  
are part Nos. 5912P. still seeking  
finger plate for 670 series, brown with  
4 holes, to complete restoration.  
Richard GØOGN, 01789-293375,  
(warwicks)  
e-mail [g0ogn@aol.com](mailto:g0ogn@aol.com)

Wanted, coils for 358(X), any range  
except Range F, medium wave. Have  
extra Range F pack, free to good  
home. Ring Tom GM3NHQ 01382  
730672 QTHR (Dundee)

EC10 (either Mk) Ring Peter G4IXY,  
01727 839908 (Herts)

Looking to complete an Eddystone  
Signal Strength meter Cat. No.669,  
have the meter & case but looking for  
the bits from the rear. Also the  
shorting switch for the Bug Key S689  
any help esteemed.  
01926 423120, e-mail to  
[andrewhumphriss@tinyworld.co.uk](mailto:andrewhumphriss@tinyworld.co.uk)

Eddystone ESU16 ISB/SSB  
adaptor, any condx  
considered. Do u have one  
lurking in a dark corner of your  
shack? I am also looking for  
any early RSGB Bulletins,  
T&R Bulletins etc, prior to  
1948. Can you help? Call  
Simon on 01434-633913 or e-  
mail [simon@nomis.co.uk](mailto:simon@nomis.co.uk)

Eddystone EC958/7 or 7E required;  
would consider /12 variant. Also  
wanted Drake RV7 and RV75. Call  
Tony, evenings on 01494 778352  
(Chesham)

**SEE HERE !**  
**TED MOORE has got**  
**his Word Processor**  
**working again and**  
**his MailBox**  
**is now open,**  
**C/o Jim Murphy**  
**63 Wrose Road**  
**Bradford BD2 1LN**



# LIGHTHOUSE

ISSUE 68

AUGUST 2001

**W**elcome once again to another bumper issue of the "Lighthouse". Your scribes and editors have been as busy as ever, providing EUG members with one of the best club "newsletters" available today. On Sunday I hope to meet up with some of my old Eddystone colleagues at Stan Carney's summer bash.

These are difficult times in the telecommunications and broadcasting industry. Company profit forecasts have crashed although the most spectacular share crash has been that of Marconi. From a high of £12.50 last September to 86p this week. Do they now count as "penny" shares?

This time last year we were expanding our workforce to meet the demands of the telecoms operators for 3G or UMTS. Then under the guise of "foot and mouth", the operators decided to cut back on capital investment.

The owners of our broadcasting transmitters and masts; Crown Castle and NTL, (both American owned and financed by "junk" bonds) are creaking under increasingly expensive debt, and in today's paper there is even talk of NTL selling off their broadcast assets. Where will it end?

I fear that, unless this downward spiral reverses, it will drive the country into recession. I also worry about the continuing objection to siting telecom masts around the country, either on visual or health grounds.

Why the industry/government don't prove once and for all what those of us who have been around broadcast transmitter sites for most of our lives know. That the levels from cell sites are harmless and mothers who protest about cell site radiation are exposing their own children to higher levels each time they give them a cell phone to use.

Now protests are taking place in Cyprus about MoD masts, which will support HF antennas. How long before the "Luddites" turn their attention to ham operators? Ignorance

ought to be a thing of the past, but given recent events I wonder when we will get around to burning witches again. I don't mean to sound morbid, but it has been one of those weeks (and I do have a number of Marconi shares!).

Graeme is putting in the data sheet on the XE10. This was the low power, low cost, synthesised FM transmitter Eddystone introduced to satisfy a promised market in community stations that never quite materialised. Anyway we used it as a stepping stone to the XE15 stereo exciter which proved very successful for us in the Far East as a driver for our 500W to 10kW transmitters.

A recent venture out to Elvaston saw me return with a Hitachi World Space receiver like the one Graeme wrote about in a previous issue. I can confirm everything Graeme said about the receiver. It certainly picks up the Afristar Satellite if you point the detachable antenna south. A good buy, mine cost me £90.

I had the opportunity to visit the Andrew Corporation in Chicago recently. Andrew makes coaxial cables and antennas. Their Sales Director Barry, N2BJ, invited me to his home one evening for a meal and a look at his shack. What a set up!

A 100ft telescopic tower with remote control raising and lowering. Atop of which were antennas for HF, 6m, 2m, 220MHz, 70cm 900MHz, 23cm and 13cm. Barry is a serious contest operator and his station is pretty much automated.

You can see a picture of his shack on QRZ.com, just enter the call sign N2BJ and if you are interested have a look at GØEYO. Anyway I am out of space so I will sign off and wish you all good health and a good read.

My best 73's

*Chris Pettitt - GØEYO*

Patron (chris@gøeyo.freemove.co.uk)



# THE SOUND OF THE HORN

At the start of the 1930's very few British households had mains electricity. During the 1940's very few country villages had power available. I recall many wartime school holidays spent with relatives in rural Yorkshire where even Calor gas (liquid butane) was considered a luxury. Electrification of rural Britain arrived in the late 1940's. Just in time for national television!

*Graeme Wormald G3GGL*

The situation overseas in the more far-flung reaches of Britannia was a generation behind. However, some of the 'fall-out' of World War II was an abundance of lightweight petrol generators scattered around the globe.

This meant that even the smallest outpost could have its own charging station and that heavy-duty batteries could always be to hand, ready to go.

Stratton & Co recognised this market with the 6 volt S.556B in 1946, but for reasons not too clear at this distance it only remained in production for a few months.

In 1949 the market was again addressed with the 'All World Six', (harking back to 'names') alias model 710. It was marketed aggressively by Webb's Radio, just off Oxford Street, London (a wholly-owned subsidiary of Stratton & Co.).

Their 1953 Catalogue contained the following announcement:-

**"EDDYSTONE 'ALL WORLD SIX' COMBINATION FOR COMMUNAL LISTENING (MODEL 710/1).**

"This is a development from the standard model and is fitted with a special output transformer used in conjunction with a pressure drive power speaker (*Voigt*), enabling a large number of people grouped indoors or outdoors, to hear broadcasts from distant or local stations. Speaker has an overall length of 54" with a flare diameter of 24", weight being 16 lbs.

**Receiver 710/1 .. Price £49 10 0 for export Pressure drive speaker, with fixing brackets, No 791.. . . . . Price £16 18 0 Six Volt Accumulator, 102 ampere hour, 40 hours listening .. . Price on application"**

None are known to have survived. ★





# SURVEY OF MEMBERS' HOLDINGS, 2001

At the time of the survey (Feb 2001) orange forms were sent to 330 members. A small number of these (say 10) are managers and editors and would not be expected to reply. 139 forms were received back. Of these 19 declined to give information, leaving 120 responses to analyse. Between them these members owned 593 sets, an average of 5 each. The lowest holding was none and the highest 49. Most members had three sets.

The results are presented in the following tables. The approximate total quantity manufactured, where known, is entered in the third column.

MODEL	QTY	MANUF
(Pre-war)		
Twin	2	
Sci Port 3	1	
Homelander	1	
Kilodyne 4	1	
All World 2	3	
All World 4	1	
All World 8	1	
E.C.R.	1	
(Wartime)		
358	4	5,000
358X	7	All vers.
(Postwar)		
504	3	
556	2	
640A (?)	1	
640	23	4,000
659	1	
659/670	4	
670	7	
670A	8	3,275
670C	3	400
670C/1	2	400

680 (/2A)	6	
680X	15	1,562
710 (AW6)	3	270
730/1a	6	317
730/4	26	1,550
730/6	11	50 (?)
740	8	900
750	13	2,783
770R	30	2,153
770U	12	
770R mkII	10	991
770U mkII	6	1,102
770S	1	100
820	4	1,000
830/3	1	
830/4	3	315*
830/5	2	
830/7	14	950*
830/8	2	
830/9	6	67*
*Figures for 830 models stop at 1967. It was made until 1973		
840	1	501
840A	17	2,500
840C	26	3,600
850/4	6	200

870	8	3,010
870A	14	4,050
880	2	
880/2	4	600
880/3	1	300
880/4	1	25
881	1	750
888	3	
888A	13	550*
*This figure includes the 888s also.		
909A	5	250
909A/1	1	25
909A/2	1	50
909A/3	1	50
940	30	1500‡
‡This figure is up to 1968; the set was made up to 1970		
EA12	19	350
EM34	1	100
HR20	1	70
(Transistors next)		
960	3	150
990R	13	
990S	8	
EC964/2	2	
EC964/7A	1	
EC964/7G	1	
1560	1	
1570/3	1	
1990R/2	1	
1990R/3	5	
EC958	11	
EC958/1	2	
EC958/3	1	
EC958/5	2	
EC958/7	1	

EC958/7E	1	
EC958/12	1	
EC10	33	*
EC10 MkII	22	*
*These two prob. In excess of >>>>		20,000
EC10M	1	
EC10A	2	310
EC10A/2/RM	1	350
EC10A2/1/RM	1	
EB35	12	2,100‡
‡In first two years only . . .		
EB35 Mk II	1	
EB35 Mk III	2	
EB36	1	
EB37	2	
31A	5	
40A	7	
1000	1	
1001	1	
1002	3	
1002/1	1	
1004	4	
1650	1	
1650/2	2	
1650/6	5	
1650/7	1	
1650/8	1	
1830/1	4	
1837/1	3	
1837/2	6	
1838/1	1	
5000	1	
6100	1	
End of radios		
Over for bits		

Non-RXs		
EP14	8	155
Round Spkrs (Small & Lge)	26	In Excess of 5,000
Bug Keys	9	
Straight key	1	
Mains filter	2	
EP20	3	
S-Meter	15	
Vibrator psu	1	
Plinth Spkr	6	
Box Spkr	6	
Edometer	4	1093
EP17	1	
Mtg Blocks	4prs	
Active Aerial	2	

Many people took the request to include 'others' to mean other makes of Rx, and Eddystone components such as plug-in coils and variable condensers.

In the interests of clarity I have omitted these; they would have doubled the list!

### Summary of Members' Holdings.

Active members: 320  
Members returning: 120

Sets returned: 593,  
Of which 411 were valved and  
182 solid state.

*continued . . .*

Average holding: 5 sets  
Lowest holding: none at all!  
Highest holding: 49 sets  
Most common holding: 3 sets

### Types of sets held: -

Pre-war – 11  
Wartime – 11  
(See Quick Reference Guide for  
the following Styles)  
Style A – 41  
Style B – 171  
Style C – 126  
Style D – 28  
Style E – 84  
Style F – 21  
Style G – 9  
958 Series – 19  
1000 Series – 10  
Others – 59

### Group holdings

730 Series – 43  
830 Series – 28  
940 – 30  
770 Series – 58  
EC10 Series – 60

Many thanks to all our  
respondents; there were twice as  
many as three years ago.  
Perhaps one day . . .

**Graeme Wormald G3GGL**





# Stratton's Sold!

90-year-old Birmingham company bought by 300-year-old button manufacturer for £1m

**F**IRMIN & SONS, which has acquired Stratton's, is one of Britain's oldest companies. It was founded in the late 17th century to make buttons for court noble-men.

They went on to make them for Admiral Nelson's officers at Trafalgar and the Duke of Wellington's at Waterloo.

With two Royal Warrants, the Birmingham company has made everything from medals and insignia to swords, helmets and suits of armour for the British armed forces for more than 300 years.

But times are changing and none of this proud history is of any help to survive the battle that manufacturing faces today. Historically, Firmin has been driven by military work, but each new contract now has to be won through competitive tendering.

It was decided that the company could no longer survive solely on military work and so last year they paid £1m for Stratton, the Birmingham manufacturer of cufflinks and ladies' handbag accessories.

Stratton itself was founded in 1911 by George A Laughton, a director of Jarrett & Rainsford, the Birmingham manufacturer of

pins and fancy goods, itself founded in 1860. The two firms amalgamated in 1920.

The great women's lib movement in the 1920's resulted in the sale of hairpins made by the Stratton division plunging from six tons to less than one ton a week.

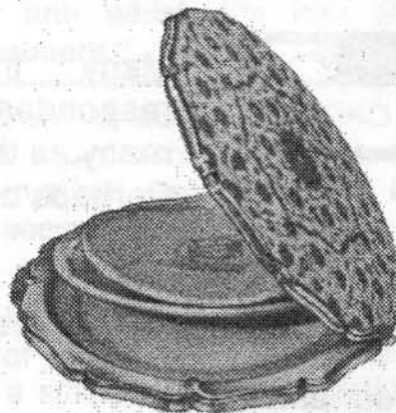
It was at this point, in 1923, that the wireless department, known as Eddystone Radio, was formed. After the death of George A Laughton in 1964 this was sold on to Marconi's in 1965, who in turn sold it to Megahertz Ltd in 1999.



Meanwhile, during the late 1920's, Stratton's non-radio business had

boomed, branching out into newer lines of Men's Jewellery. The Expanda Cuff Link was patented and introduced in 1928, followed by Tie Slides, which Stratton's were one of the first to introduce into the home market.

After World War Two, the famous Stratton Powder Compact achieved world-wide success and is now a much sought-after collectors' item.



*The famous Stratton Ladies' Compact of 1948*

*Feature by Graeme Wormald G3GGL, with added reporting by Anthony Richards GW4RYK*

# THE COLLECTING MANIA

## *IS IT A DISEASE?*

BY GRAEME WORMALD G3GGL

Two things prompt this discourse. Firstly the Survey of Members' Holdings of Eddystones, and secondly the "letter of the week", shown below.

I must own to having "collected things" for over 60 years. Accepting that all small boys do collect things, I recall particularly being introduced to philately.

I would have been about eight years

old and was recovering from measles, considered a dangerous ailment in those days, even though common. The result was that I was confined to bed for an extended period even though the spirit was recovering.

A friend of my parents, who was a keen stamp collector, visited and brought me an album (I still have it!). With it was a bumper packet of stamps of the whole world.

He sat on my bed and with the

### Letter of the Week

"As a collector of valve communications receivers for some 40-plus years and a member of the Eddystone User Group for just over a year I felt compelled to write this letter. I have a modest collection of Eddystone receivers, four in all, and recently I have been looking for a particular model at the Amateur Radio Rallies and meet up with lots of other EUG members. The conversation generally goes along these lines:

"Oh, you're a member of the EUG, etc . . . "

"Yes."

"How many do you have?"

"Oh, I have four."

"Is that all, I've got 347."

"What?"

"Oh yes, I've got four rooms in my house full of them"

"All I want is an xxxx."

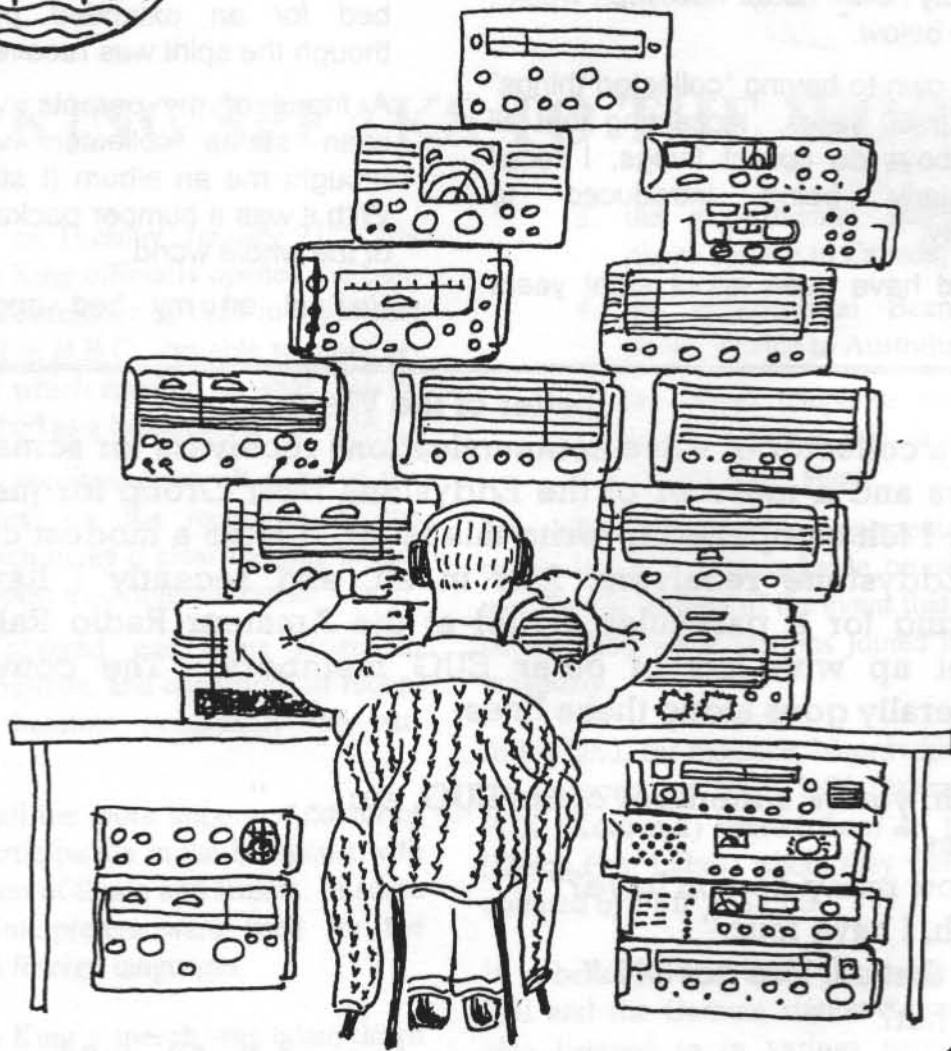
"Oh, I've got 38 of those - I never use them."

"Would you sell one?"


"Oh no, I never sell anything."

Come on fellas, if you want the EUG to grow then you've got to leave a few radios for the rest of us! I wish I had a pound for every conversation I've had along those lines. . . . "

Peter, G4IXY, Hertfordshire.



THERE WAS NOTHING JIM LIKED BETTER  
THAN WORKING A PILE UP ~

  
12/2000



expertise of a lifetime meticulously sorted them out by country and popped them loose into the pages for me to mount at leisure.

After he'd gone I tipped the lot out and mixed them up. Three days later I knew what E/AAΣ and Suomi stood for; that they had black swans in Australia, and spoke Portuguese in Brazil.

But unlike the serious collector I turned rather wild-cat. Cigarette cards, coins, scale model aeroplanes . . . I'd been bitten.

By 1945 I had the radio bug and collected every bit and piece that I uncovered. Not just parts for current projects but parts for projects unplanned (and unlikely!)

Then came the big war surplus bonanza; 1155's, 1132's, TR9's, 1143's, WS19's, 107's and so on *ad nauseum*. I'm still as bad. When I joined EUG in 1994 I had one Eddystone. I think I have 29 now. All different.

I also have nine wind-up gramophones and 600 78-rpm records . . .

If I were a Gulbenkian I'd probably have built a museum and filled it to overflowing with vintage technicalia. I've got a set of aircraft instruments, a bubble sextant, a meteorograph . . . The list is almost endless! The fact is I feel comfortable surrounded by such curiosities

Which is another way of saying there's not much hope in my case. I don't know if it's a *disease* or a *genetic* quirk, probably the latter.

Now considering the letter from Peter, G4IXY, two things strike me. First that he's pulling my leg; second that someone's pulling his leg! But he tells me that at the big Home Counties rallies such encounters are the norm! (I've reached the age now where I

refuse to cross the county boundary to acquire anything.)

Which brings us back to the Survey of Members' Holdings (reported a page or two further on).

Out of 335 members (a record number, by the way; we are still growing) – 135 returned their questionnaires. That means that the vast majority, 200, either forgot or didn't wish to.

Of this 135, nineteen declined to reveal their holdings (even in confidence), which left a review of 116 members. Their holdings varied from none to 49. The total number of sets registered was 593, which makes an average of five sets each.

So where are all these multi-hundred owners?

Well, I do know that one member registered 110 sets at our last review, three years ago (not responding this year). And I also know that some years back a collection of about 300 Eddystones, accumulated over a lifetime, was due to be auctioned but was sold *in toto* to a member, but these have never been registered.

It may be that the mega-collections are among the missing two hundred-and-odd reports; I don't know. But I do know that fine-art collectors are just as aggressive as those mentioned by Peter; and I don't think they'll take the slightest notice, if they exist!

All I can say is that the average member has about three Eddystone receivers and cannot be classified as *manic*, but that a certain percentage (including myself) have a serious *psychological* deviance. I doubt if there's any cure.

What do members think? Should it have been called the Eddystone 'Collector' Group instead of 'User'?



# ELECTRONIC REPAIRS TO EDDYSTONE RECEIVERS

BY PETER LANKSHEAR, ENGINEER, NZBC, (RETIRED)

This is the first of a series of articles which I hope will be of assistance to EUG members who have difficulty in understanding the complexities of Eddystone communications receivers. The series is not intended for experienced technicians, but rather for the newcomer who is somewhat bewildered when he first looks underneath an Eddystone chassis.

It is apparent from reading *Lighthouse* and other vintage radio magazines that a major obstacle for many enthusiasts is the repair and maintenance of their receivers. This is understandable, as electronics can be a complex mixture of engineering and science.

However, one does not need to be a professionally trained engineer to be successful repairer - in fact, the highly trained specialist is often not the best "trouble shooter" and many radio amateurs and hobbyists have considerable expertise. (Marconi, who had little formal education, is said to have claimed that he was the first radio amateur.)

Qualifications needed are enthusiasm, patience, a methodical approach to problems, and a preparedness to do some study of basic theory, of which there is no shortage of reference material.

Electronic equipment does not perform perfectly for ever, and although they were built to a very high standard, Eddystone receivers are no exception. After all, even

their owners are not what they were 40 or more years ago!

Mechanical problems are usually obvious and easy to locate, but may require specialist workshop facilities. This series will, rather, concentrate on electrical problems.

The good news is that by replacing substandard components, it is generally possible to bring an Eddystone back to something like full performance electronically. The problem is that, unlike mechanical faults, electronic malfunctions are often invisible and need to be identified by diagnosis.

Since the earliest days of radio technology, attempts have been made to provide help in fixing specific receivers by publishing details of faults and identifying the offending components.

At one time radio service magazines often published columns of readers' experiences such as "In an ACME model XYZ, replacing C4 will cure overload on strong signals."

Presumably C4 was an A.G.C.

bypass capacitor but in this type of publication the writer rarely gave the reason for the original malfunction. The idea was for the busy serviceman to thumb through back numbers of his magazines in the hope of finding reference to his particular fault.

This could take a lot longer than actually diagnosing the fault for himself, and some publishers actually gathered the information into books. As not all faults could be listed, this was a poor method and no substitute for a real understanding of circuit operation. Frankly too, some of the originators of cures were mistaken in their diagnoses.

Electronic fault finding is not a black art, relying on intuition, but has something in common with medical diagnosis. Just as a doctor needs to have a good understanding of the workings of a body, and to take careful note of the symptoms, so the radio fault finder needs to understand how his receivers function.

A medical symptom can be masked by an aspirin, without effecting a cure and similarly it is possible to hide a radio malfunction by a modification that does not actually fix the problem. This is a common outcome of blind "tinkering".

To summarise then, the proper

way to approach Eddystone servicing is to become familiar with circuit operation. Fortunately, like all good engineers, Eddystone designers did not mess around with "trick" circuits - in fact their basic designs were very much according to conservative industry standards.

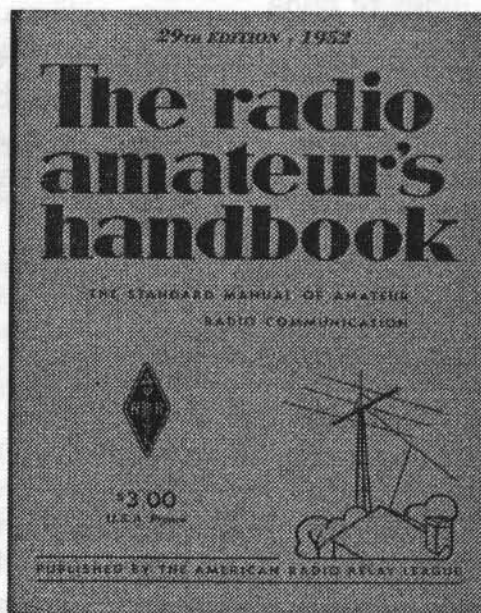
I cannot say that I have ever found any feature of Eddystone design that was not "according to the book". Stratton's used proven and conservative techniques and it may be a surprise to some that most of their circuitry would have been familiar to designers of higher class domestic receivers

Although there are detailed differences between models, there are strong family resemblances. There were changes in design over the years of course, but not as much as one might expect.

For example, the second R.F. stage of a 680 is identical to that of the much younger 940 and is quite similar to standard circuits shown in textbooks. In another example in these receivers, although the 940

was introduced 15 years after the 680, five valve types are common to both.

This brings me to the subject of reference material. The novice to repairing Eddystones should first



*A recommended study book  
for all students of  
radio circuitry*



be prepared for a modest amount of study. There were numerous books written about valve radio theory. Some were superficial, some were highly mathematical, but to be recommended are the pre-1970 ARRL and RSGB Amateur Handbooks.

These have excellent and readily understandable chapters on receiver theory providing adequate information for understanding superheterodyne operation and the workings of communications receivers.

For an in-depth but understandable treatise on the whole field of radio design, unquestionably the widest ranging of all are the "Radiotron Designer's Handbooks". This Australian-produced series was published world wide. Fortunately, the later editions, running into more than 1400 pages can still be found at sales and are well worth looking out for.

One of the finest radio magazines was *Wireless World* (which started life as Marconi's house magazine). W.W. regularly published reviews, produced by knowledgeable writers, of new receivers and often with in-depth analyses of their circuits.

These articles are an excellent way of coming to grips with the technology of actual receivers, and occasionally, even better, they reviewed Eddystone receivers. A good example, taken from the September 1949 issue of W.W. and reproduced in *Lighthouse* 67 (June, 2001), is a thorough stage by stage description of the first marketed version of the Eddystone 680.

This review, if read with a copy of the circuit to hand, provides an excellent and unbiased insight into the design and operation of the 680. Whilst the W.W. descriptions of Eddystone models are most valuable, even their descriptions of domestic receivers are well worthwhile reading for their insight into receiver design. Look out for copies of W.W. - they are well worth grabbing.

So you have just obtained a nice Eddystone, and if it is known to be in good condition, install it in your shack and enjoy. Later you may wish to overhaul it but meanwhile, before attacking it, take time to study it.

As only a very experienced technician could be expected to navigate the intricacies of an Eddystone chassis without at least a circuit diagram, it is essential for you to have as much data on your receiver as possible, and fortunately EUG members have access to circuits and handbooks on most models.

I cannot emphasise too strongly that before working on a receiver, copies of these should be obtained, along if possible with some of the books mentioned earlier.

Often though, a receiver is acquired with its condition unknown and naturally you will be keen to try it out. Resist the natural temptation to straight away "fire it up" without some vital checking, or you may damage it or yourself.

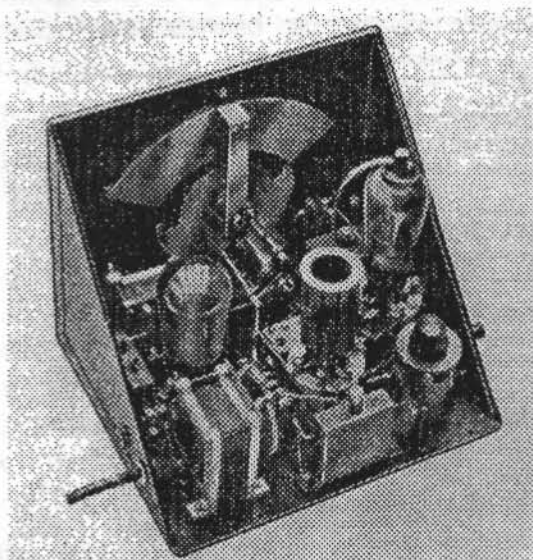
In the next installment we will discuss what should be checked out before plugging in your new acquisition.

★

# "EDDYSTONE SPECIFIED"

A Series of Articles featuring Constructional Projects  
In which the use of Eddystone Components is specified.

## 1935 AMATEUR BANDS TWO RECEIVER



Showing the interior view of the Receiver.

The object in the design of this set is to provide a highly efficient receiver for use on the amateur bands. There is much to be said for a set employing a small number of valves giving a high degree of amplification with a silent background as compared with a multi-wave super-het. Selectivity is naturally the chief trouble which has to be overcome, and in the 1935 design, this has been considerably improved as the result of the new tuning coil system employed.

### DESIGN.

The set comprises a screened grid valve as detector, full use being made of the high amplification of the valve by means of a high impedance choke coupling. A low frequency transformer would not be of much use in view of the high impedance of the valve and resistance coupling when calculated to match the impedance results in a large voltage drop across the resistance, which makes the set erratic in operation and needs a higher operating voltage. The output valve of the set is a steep slope pentode, again with a high amplification factor. The high frequency choke is placed in series with the grid leak to the second valve instead of in series with the high impedance choke, since this was found to give improved results. The grid leak is taken to a detector bias resistor, giving the grid slightly positive bias. This was found to be better

than if taken to either L.T. + or L.T.—. Automatic grid bias and drop fed high tension are further refinements.

### COILS.

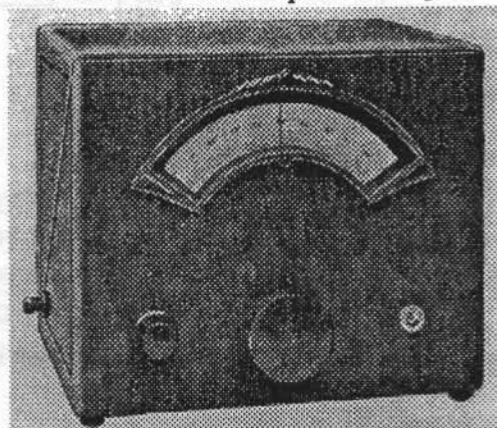
The coils used are a special production for the amateur wavebands and are of a 5-pin type. The aerial is fed into a tapping well down the coil which is tuned by a 35 m.mfd. condenser. An additional band spreading condenser is also fitted which is tapped across a portion of the coil. The lower end of the winding is used for reaction purposes. Tuning is very sharp and by means of adjustment of the band spreading condenser, the amateur bands are spread out practically over the whole of the dial.

### REACTION CONTROL.

Next came the important question of reaction control, and after trying various known ways, the rather unusual method of obtaining a definite amount of reaction by means of a pre-set condenser and reaction coil, on the Reinartz principle, was adopted, with the final adjustment made by a potentiometer control of the H.T. voltage to the S.G. of the detector valve. This method ensures that there is no movement of wavelength when reaction adjustment is completed, thus obtaining smooth control right up to the maximum point.

### HAND CAPACITY.

This trouble cannot be tolerated in the efficient amateur receiver, and the design of the "Amateur Bands" Two has eliminated this trouble entirely, even when headphones are in use. It is almost possible to place the



The finished external view shows the open vision tuning dial.

## AMATEUR BANDS TWO—continued

hands on the metal chassis when wearing headphones, without moving a signal being received.

### CABINET.

The receiver is built into an Eddystone 2-piece cast Aluminium cabinet. This gives instant accessibility and at the same time perfect screening, and makes the receiver a compact and robust instrument which is fully portable if required.

### CONSTRUCTION.

The main details of construction can be seen on reference to the wiring plan, theoretical diagram and point to point connections. The following remarks may, however, be of further assistance.

The 40 m.mfd. band spreading condenser is mounted on three 1" pillars tapped 6BA. The 5-pin Frequentite coil base and 4-pin Frequentite valveholder are mounted on pillars 1½" high, tapped 6BA. In mounting these two components, lead washers should be placed on top of the pillars and underneath the fastening down screws. This prevents any possible breakage of the holders. The .0003 mfd. grid condenser is mounted by means of its tags across the valveholder and coil holder. These are connections Nos. 3 and 4 in the plan. Lead No. 8 is taken down the supporting pillar of the valveholder to a tag in metallic contact with the baseplate under the pillar. The detector bias resistor is mounted under this valveholder about ¼" from the baseplate. The Cyldon condenser is mounted under the tuning condenser and is raised on 1"

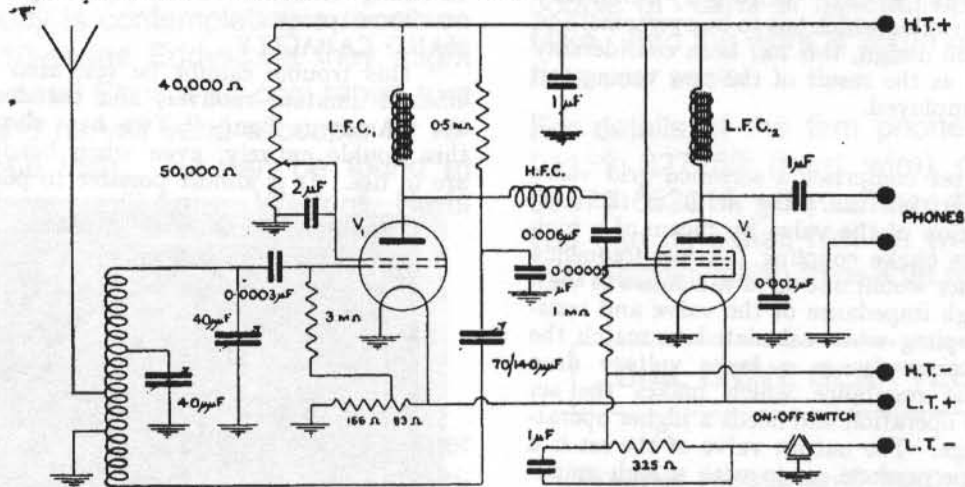
pillars, tapped 4BA. Lead No. 16 is taken to earth by means of one of the choke fixing screws. The receiver is earthed by means of a terminal on the back hinged portion of the cabinet. This is not shown on the diagrams. **ERRATUM.**

In the theoretical diagram, the tuning condenser is shown as 40 m.mfd., whereas the actual value used is 35 m.mfd.

### POINT TO POINT CONNECTIONS.

- 1—Aerial Socket to Coil Holder.
- 2—Fixed Plates of Aerial Series Microdenser to Coil Holder.
- 3—One End of .0003 mfd. Grid Condenser to Coil Holder.
- 4—Other End of Grid Condenser to Grid Terminal of Valveholder V1.
- 5—Moving Plates of Aerial Series Microdenser to Coil Holder.
- 6—Moving Plates of 35 m.mfd. Tuning Condenser to Coil Holder.
- 7—Coil Holder to Soldering Tag E.
- 8—Filament Terminal of V1 to Soldering Tag E.
- 9—Blue Connection of 938 Potentiometer to Negative Filament Terminal of V1.
- 10—Yellow Connection of Potentiometer to Plus Filament Terminal of V1.
- 11—Tapping of Potentiometer to One End of 3 megohm Grid Leak.
- 12—Other End of Grid Leak to Grid Terminal of V1.
- 13—Centre Socket of Coil Holder to Cyldon 70/140 m.mfd. Condenser.
- 14—Fixed Plates of 35 m.mfd. Condenser to Coil Holder.
- 15—Plus Filament Terminal of V1 to similar Terminal of Valveholder V2.
- 16—Negative Filament Terminal of V2 to Soldering Tag F.
- 17—S.G. Anode Terminal of V1 to 2 mfd. Condenser.
- 18—2 mfd. Condenser to Slider of 50,000 ohms Potentiometer.

THEORETICAL CIRCUIT OF THE 1935 AMATEUR BAND RECEIVER.



NOTE. All connections marked  $\frac{1}{\text{ground}}$  are taken to earthed metal chassis.



## AMATEUR BANDS TWO—continued

- 19—One End of 50,000 ohms Potentiometer to Soldering Tag E.  
 20—40,000 ohms Resistance to Potentiometer.  
 21—40,000 ohms Resistance to L.F. Choke 2.  
 22—L.F. Choke 2 to L.F. Choke 1.  
 23—L.F. Choke 1 to Centre Socket of V2.  
 24—L.F. Choke 1 to 1 mfd. Condenser.  
 25—One End of 0.5 megohm Resistance to L.F. Choke 1.  
 26—Other End of 0.5 megohm Resistance to L.F. Choke 1.  
 27—L.F. Choke 1 to 70/140 m.mfd. Condenser.  
 28—Tag of .00005 mfd. Condenser to 70/140 m.mfd. Condenser.  
 29—Remaining Tag of Former Condenser to 6BA Nut E.  
 30—One End of H.F. Choke to .006 mfd. Grid Condenser.  
 31—Other End of H.F. Choke to L.F. Choke 1.  
 32—Soldering Tag of .006 mfd. Condenser to Grid Terminal of V2.  
 33—One End of 1 megohm Grid Leak to Grid Terminal of V2.  
 34—Other End of this Grid Leak to 1 mfd. Condenser.  
 35—1 mfd. Condenser to One Lead of 325 ohms Bias Resistance.  
 36—Other Lead to On-Off Switch.  
 37—On-Off Switch to Soldering Tag F.  
 38—Anode Terminal of V2 to L.F. Choke 2.  
 39—L.F. Choke 2 to Top of .002 mfd. Anode Condenser.  
 40—Bottom Tag of this Condenser to Fixing Nut E.  
 41—L.F. Choke 2 to One Terminal of 1 mfd. Condenser.  
 42—Other Terminal of 1 mfd. Condenser to 'Phone Jack.  
 43—'Phone Jack to Choke Fixing Nut E.  
 44—Flexible Lead from Cydon 70/140 m.mfd. Condenser to Anode of S.G. Valve.
- BATTERY LEADS.  
 45—H.T.+ (Grey) to L.F. Choke 1.  
 46—L.T.+ (Red) to Plus Filament Terminal of V2.  
 47—H.T.— (Slate) to 1 mfd. Condenser.  
 48—L.T.— (Blue) to Centre connection of On-Off Switch.

## LIST OF PARTS.

	Price
1 Eddystone 2-piece Metal Cabinet, No. 974/A	29/-
1 Eddystone Disc Drive, Cat. No. 970W ..	10/6
1 Eddystone Scientific Condenser, 35 m.mfd.	6/-
1 Eddystone Microdenser, 40 m.mfd., with scale and knob .. .. .	5/-
1 Eddystone 4-pin Valveholder, Cat. No. 949	1/5
2 Eddystone 5-pin Valveholders, Cat. No. 950 each	1/8
6 Eddystone No. 4P Pillars 1 $\frac{1}{4}$ ", tapped 6BA each	1 $\frac{1}{2}$ d
2 Eddystone No. 7P Pillars 1", tapped 4BA each	1 $\frac{1}{2}$ d
1 Eddystone L.F. Choke, Cat. No. 980 ..	8/6
1 Eddystone L.F. Choke, Cat. No. 981 ..	12/6
1 Eddystone 2 mfd. 1 Terminal Type Condenser .. .. .	4/-
2 Eddystone 1 mfd. 1 Terminal Type Condensers .. .. .	each 3/-
1 Eddystone Tapped S.W. Detector Bias Resistor, Cat. No. 938 .. .. .	1/6
1 Eddystone Special 5-pin Coil for 20 metres	5/6
1 Eddystone Special 5-pin Coil for 40 metres	5/6
1 Eddystone Special 5-pin Coil for 80 metres	5/6
1 Eddystone G.B. Resistor, 325 ohms ..	1/6
1 Eddystone S.W. H.F. Choke, Cat. No. 948	2/9
1 Cydon 70/140 m.mfd. Condenser .. .. .	2/-
1 Elpro 50,000 ohm Potentiometer .. .. .	4/6
1 B.A.T. 3-pt. On-Off Switch .. .. .	1/6
1 Igranic P.71 Jack .. .. .	1/3
1 Igranic P.40 Plug .. .. .	1/6
1 Erie 1 watt Resistor, 40,000 ohms .. .. .	1/-
1 Erie 1 watt Resistor, 3 meg. .. .. .	1/-
1 Erie 1 watt Resistor, 1 meg. .. .. .	1/-
1 Erie .5 meg. Resistor, $\frac{1}{4}$ watt .. .. .	1/-
1 T.C.C. Condenser, "M" type, .00005 mfd.	8d.
1 T.C.C. Condenser, "M" type, .0003 mfd.	8d.
1 T.C.C. Condenser, "M" type, .002 mfd. ..	1/-
1 T.C.C. Condenser, "M" type, .006 mfd. ..	1/6
1 Clix All-in Terminal .. .. .	6d.
1 Earth Terminal .. .. .	2d.
1 Set 4-way Leads with Plugs .. .. .	2/9
1 Bush for Leads .. .. .	3d.
1 Set Screws, Nuts, Wire, Lead Washers, etc.	2/6

Plus Royalty of 2/6 if kit is purchased complete.

# LOOKING BACK

## A REVIEW OF THE 1935 EDDYSTONE AMATEUR BANDS TWO

I suspect the designer of this remarkably over-the-top little receiver was under strict instructions to get stocks of components moving! The price of Parts in the column (above right) adds up to no less than 133/- (133 shillings) or £6.65 in modern parlance, and that's WITHOUT valves, headphones and batteries!

To our 'modern' eyes the use of L.F. chokes as anode loads is a bit extreme (although this copied ARRL Handbook practice of the period).

The position of the H.F.C. is questionable as it allows the RF to

enter L.F.C.1 without hindrance, poor practice.

In favour of L.F.C.2, however, must be quoted the isolation of the headphones from the HT supply. The then-common routing of 100-250 volts through open-terminal headsets would give our present Health & Safety Executive the vapours!

So don't tell them about the similar 'All World Two' of 1936 which managed to keep its price down to barely half that of this little beauty. Oh, yes, and the price of a first-class stamp in 1935 was 1 $\frac{1}{2}$ d (0.5p). G3GGL

# Profile

## Eddystone 1969

*After covering the pre-war and early post-war Profile of Eddystone Radio we come to the last episode of this most interesting feature. It was first published in 'New Electronics' for August 1969 and covers the sale of the company to the Marconi empire. We are indebted to Tom Toth, G4ORF, for his sharp eyes and letting us have the copy.*

### JOINING FORCES

For the first forty years of life Eddystone Radio was an off-shoot of Stratton and Co. and was an odd-man-out in the Laughton group of companies. This changed in 1964, when the company, whilst still retaining its own identity, became an operating division within The Marconi Company, a logical move in view of the long-term and mutually profitable association between the two companies. The company was re-registered as Eddystone Radio Ltd. on April 14, 1965.

New management was combined with continuity of expertise by the long-serving Eddystone senior staff, who are still very much in evidence. Bill Cooke, for example for many years and still today chief engineer, who joined Eddystone pre-war and re-joined after war service. Ken Wilkins, sales manager, has been with Eddystone since boyhood and is well-known in the BPO (*British Post Office*) and Services establishments. Arthur Kershawe, sales office manager with special responsibility for exports, is another who has recognition world-wide.

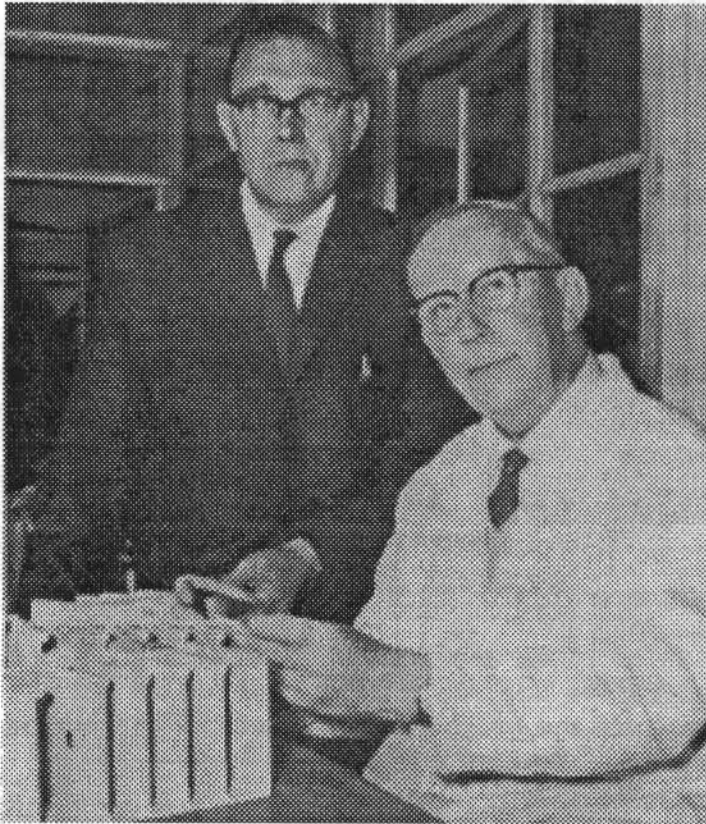
Dick Carroll, who moved from a position as marketing manager of Marconi's microelectronics division to Eddystone, first as works manager and now managing director, is carrying through a programme of

modernisation with clearly defined objectives.

For one thing there has to be a switch in production techniques. The EC958 final assembly, for example, involves the connection of only one main and two subsidiary cableforms because of its comprehensive modular construction. The main bulk of the work now takes place much earlier up the line and demands tooling-up with special jigs and purpose-built test gear for batch-producing the individual modules.

An unusual characteristic of Eddystone is insistence on private venture work. By keeping design within their own control, the company is able to sell world-wide, including the eastern bloc countries (Red China not excluded). Only one piece of equipment is embargoed on a performance basis and has to be degraded before export to Comecon countries.

Export performance is excellent, some 50 percent of turnover being exported directly, and at least another 10 percent of turnover through third parties as part of package deals. Over the last 15-20 years Scandinavia has been Eddystone's best export market, with Australia and Canada not far behind. The rest of Europe is now developing well, especially Germany.



Joe Addison, production manager, and Les Pritchard, chief of tool design, discussing technicalities.

### OVERSEAS MARKETS

Dick Carroll believes in getting out and selling in the market place. He has done a Scandanavian tour this year and other senior staff men have visited North America, the Middle East, Scandanavia and Western Europe. In the first six months of 1969, Eddystone staff have travelled more than in the previous two years together.

In selling overseas, Carroll is a confirmed free-trader. He would certainly like to see the tariff barriers reduced as a first measure. As far as competition is concerned his main rivals in overseas markets are all British who, he declares, are pre-eminent in communications receivers. As a private venture company there are no strings to Eddystone activities, and Carroll is always open to discussion with countries who would like to engage in local manufacture,

provided, of course, that there is a real advantage to be gained.

On the production side, Carroll's biggest cross to bear is the shortfall of components. The performance of British component manufacturers he describes as "dreadful" and "driving me to Japan". There are always notable exceptions, though, one being Salford Electrical who are always on time with crystals and crystal filters.

On the general economic situation, Carroll echoes the thoughts of everyone in the business. He, too, would like to see a more stable economy in the UK in which costs can be forecast with much greater certainty. This would go a long way to securing exports which are frequently negotiated on a long-term basis.

### COMMERCIAL ORIENTATION

The old-style company, very much a family-run affair with decisions based only too frequently on expediency, has now given way to a more efficient commercially-orientated unit of nearly 300 workers while retaining the flexibility and, above all, the high standards for which Eddystone have become famous. ■

*It's worth noting for posterity that 'Salford Electrical' was also part of the Marconi empire!* GRAEME.



# GETTING IT UP THERE ... OR ENDOWING AN ANTENNA WITH THE ADVANTAGES OF ALTITUDE.

*By Brian C. Cauthery VE3DFC*

The trees we planted in the 1950's are now some 70ft tall and (with commendable foresight) several are well placed for a 167ft centre fed dipole. A 60ft end elevation with a 10ft centre droop leaves a 40ft vertical drop to the 4:1 Balun, then coax into the Hammond AT 1500 Transmatch (made by the company which owns the Eddystone Diecast Box business).

For the dipole itself, I bought 200ft of 1" inside dia Cadmium plated woven Copper screen sleeve. This has a huge surface area of individual but connected conductors—but it does stretch.

So I tied one end to a tree and attached the other end to the drawbar of the tractor and then pulled the 200ft to 253ft. After cutting the 84' 7" dipole halves, I installed the end insulators, the centre feeder strain insulator and the 300Ω flat twin lead. Then the 120ft lengths of 3/8" black Dacron rope, one piece to each end of the antenna. (*Note from Graeme: Dacron is the American name for Terylene.*)

With help from a Great Circle Map centered on Toronto, I picked the most advantageous trees to make the best use of the radiation pattern of the antenna.

Then, one bright sunny morning last spring, with boundless energy and glowing enthusiasm (quickly dimmed), I rushed into the garden to install the new antenna only to discover that the plethora of leaves on the deciduous trees prevented me from seeing the target fork in the tree some 60ft above ground.

In late autumn on a crisp, bright, frosty day, I tried again, this time with a Bow and Arrows and several hundred feet of fishing line. Remembering the skill of the English Bowmen at Cressy and Agincourt, I put the first arrow and it's trailing fishing line between the trunk and the chosen branch — but the arrow stayed in the upper boughs of the Cedar trees beyond. Arrow number 2 met the same fate, whilst arrow number 3 broke the fishing line and disappeared into the agricultural wilds of central Ontario.

Time for Coffee and more thought. The selected trees cannot be climbed to the 60ft level, (even if I really wanted to do so) and the local electrical contractor wanted \$300 to bring in his hydraulic boom, with attendant damage to our laboriously tended garden.

At this point, I concluded that pushing a light-weight, sectional rod up through the branches, with a hook and pulley on its upper end might be the solution.

I searched the barn to see if we had any items which would qualify as "light-weight rods". We have a 20ft Roof Rake (used to pull accumulated snow off the roofs) and with the blade removed, this was a good start. Then the barn yielded a 14ft length of 1" aluminium tube and a 15ft piece of 1" x 1 1/4" cedar rib for a canoe frame.

We have a 12ft aluminium ladder and I am 6'2" tall, so if I stand on the 10ft rung of the ladder and raise the sections, clamping them together with hose clamps, we have a total potential height of some 65ft. Is this the recipe for success — at last?

I bought two 8" outside dia clothes line pulleys and made up 2 metal hooks to attach to the pulley frames, allowing them to be hung on the selected tree fork.

Then a third hook was bent up and riveted to the upper end of the 1" aluminium tube. Next, thread one Dacron rope through each of the 8" pulleys (the pulleys I purchased had metal pins across the plastic frame to prevent the rope coming out of the pulley groove).

Tie the loose end of the rope to a low

branch of the chosen tree. This will prevent the rope running freely through the pulley as you raise it into position.

Select the best vertical route for the rods and set the ladder against the tree aligned with this route. Then rope the ladder to the tree; lean the rods and poles against the tree adjacent to the ladder; attach two large empty clean cans to the top of the ladder frame and put the tools—screw drivers, pliers, etc., in one can and the clamps in the other.

Get a safety harness (or make one) which supports you at SHOULDER or MID BACK level, put it on and climb the ladder to one of the rungs near the top and attach the harness securely to the tree.

Leave sufficient slack to allow you to lean back at about 25 degrees from the tree. This places your eyes some 4ft back from the tree which gives you some protection from birds nests and other falling objects which may be dislodged and, more important, it greatly improves your optical distance judgment.

The first lift rod is the one with the hook riveted to the top. Hang the hook attached to the pulley on the hook riveted to the top of the first lift rod and push the rod up vertically through the branches until you can rest the lower end in one of the cans. Take two clamps out of the other can; slide them over the lower end of first lift rod and push the

second lift rod through these clamps.

Then tighten them with a clamp separation of 12" and a lift rod overlap of 14" per rod; raise the lift rods until you can attach lift rod three then four etc. A helper to guide the rope and antenna between the branches is a welcome refinement.

The pulley is now at the level of the target fork, so lean back in the harness and, by maneuvering the lift rods, you will be able to set the pulley hook over the tree fork and the weight and tension of the antenna will hold it in place.

Bring the lift rods down separating them one at a time and move to the whole operation to the other end

of the antenna to repeat the lifting process. Once in place, the antenna can be moved back and forth in the pulleys to centre the feeder. The last operation is to tie one end of the Dacron rope to the tree trunk and hang a suitable weight on the other Dacron rope to keep the antenna taut. I used two house bricks for this purpose.

I was able with this system to place and retrieve the antenna several times at the 60ft-plus level. My wife Barbara was surprised that I had been able to place the pulleys so high in the trees . . . and I have to say that amateur radio is not her primary enthusiasm.

Brian R Cauthery VE3DFC.



**"ERECTING AN AERIAL"**

(with acknowledgements to the BBC Yearbook, 1929)



# E.U.G. PRIZE CROSSWORD NEWS

First of all I must thank Collin Crabb, G4HNN, for a first-class supply of Prize Crossword Puzzles. His compilations are of the very best and certainly superior to many in the popular press. Just cryptic enough to cudgel the brain but not too abstract for us down-to-earth students of radio history.

A couple of days ago I was doing the 'Daily Mail' Codeword Puzzle, which is similar to a crossword but it has no clues! Every square has a number which is the same for each letter of the alphabet and they start you off with a couple of letters.

Am I making myself quite baffling? Anyhow, as I was plodding my way through it, one of the words at the top resolved itself as 'QUARTZ'.

A little further down the grid came the word 'CRYSTALS'. I had quite an eerie feeling, rather like MI5 must have had doing the famous 'Daily Telegraph' crossword in 1944, which had as answers the D-Day codewords 'Overlord', 'Juno' and 'Omaha'.

They thought the D-Day cover was blown but it was compiled by an elderly schoolmaster in Torquay (or somewhere); with a lot of coincidence.

I must say I do look forward to Collin's chunky envelope coming through the letter-box. I know I'm in for a good morning's puzzling (if I get stuck I complain to Colin and get him to make it easier!!)

Anyway, lets get down to last month's winners. If you remember, the prizes were a de-luxe enamel EUG Members' Badge (no cheap plastic here) to the first five winners to come out of the hat by 20th July. The lucky

contestants should have received their badges by now and here they are: -

Peter Beardsmore G4IXY (Herts)

Cliff Cumming (Surrey)

Garry McSweeney G4CFQ (Belfast)

Jack Read (Cheshire)

Richard Witney G4ICP (Essex)

I must apologise for missing off the final clue (22 down). The question was "Lighthouse recipients, initially." All entrants got "EUG" correctly (psychic?).

Here are the rest of the answers:-

ACROSS: 1 Panadaptor, 8 EBU, 9 Sea-plane, 10 Knife, 11 Upgrade, 12 Stage, 15 False, 18 Comment, 19 Renew, 21 Repeater, 23 ATU, 24 Ponderings. DOWN: 2 Ace, 3 Amperes, 4 A Ham Do, 5 Trek, 6 Retina, 7 Tube, 9 Scuff, 13 Timpani, 14 Enter, 16 Line Up, 17 Couple, 19 RAAF, 20 Wren, 22 EUG.

## THIS MONTH'S PUZZLE

Several of you have kindly said they would send in the puzzle without the offer of a prize; that the honour of winning is the thing!

But we still have one or two novelties up our sleeve!

When I was visiting the factory a couple of years ago they were scrapping the left-over stocks of colourful 'Marconi-Eddystone' plastic carrier bags. Not the

cheap sort like Sainsbury's, but the thick ones like Thornton's. So I relieved them of the trouble!

There aren't enough to give one of these unique "collectors' items" to every member but we do have a few dozen and **THREE** will be given to **EVERY** correct crossword entry. So go to it!

Graeme Wormald G3GGL





# E.U.G. PRIZE CROSSWORD No.3

COMPILED BY COLIN CRABB G4HNH

Photocopy or write out the answers so as not to spoil your copy. Send to Graeme Wormald, at 15 Sabrina Drive, Bewdley, Worcestershire DY12 2RJ, England, to arrive not later than 20th September 2001. See previous page for further details

## ACROSS

1. Frequency sweeper, with scope for improvement (10)

8. Initially, a well-respected British institution concerned with all things electrical (3)

10. Will Graeme have to "throw out" any members this year for non-payment of subs? (5)

11. Waveform is reshaped by a suitable filter (7)

12. In its time, Eddystone Radio has represented the — of the British radio industry (5)

15. The NVCF is a major one in the radiophile's calendar (5)

18. Elderly radio amateur in action, initially (2,2,3)

19. Convolutions of conductors (5)

21. Definition of army man-pack (8)

23. The last word in voice communication (3)

24. Separate the AF from the IF (10)

## DOWN

2. Poetic valve suffix (3)

3. Surprise precedes an in-

clination to name a branch of symbolic logic (7)

4. The state of your EUG membership should 10 across occur (6)

5. Low-chart type of diagram (4)

6. Half wave rectifier is given a raspberry! (6)

7. The telephone research lab where the transistor was invented in 1948. (4)

9. Popular US amateur radio manufacturer of the 1960's (5)

13. Sir John — was the co-inventor of the Cavity Magnetron at Birmingham

University, along with Dr. H. A.Boot in 1939 (7)

14. Rome's arranged to rename the telegraph key (5)

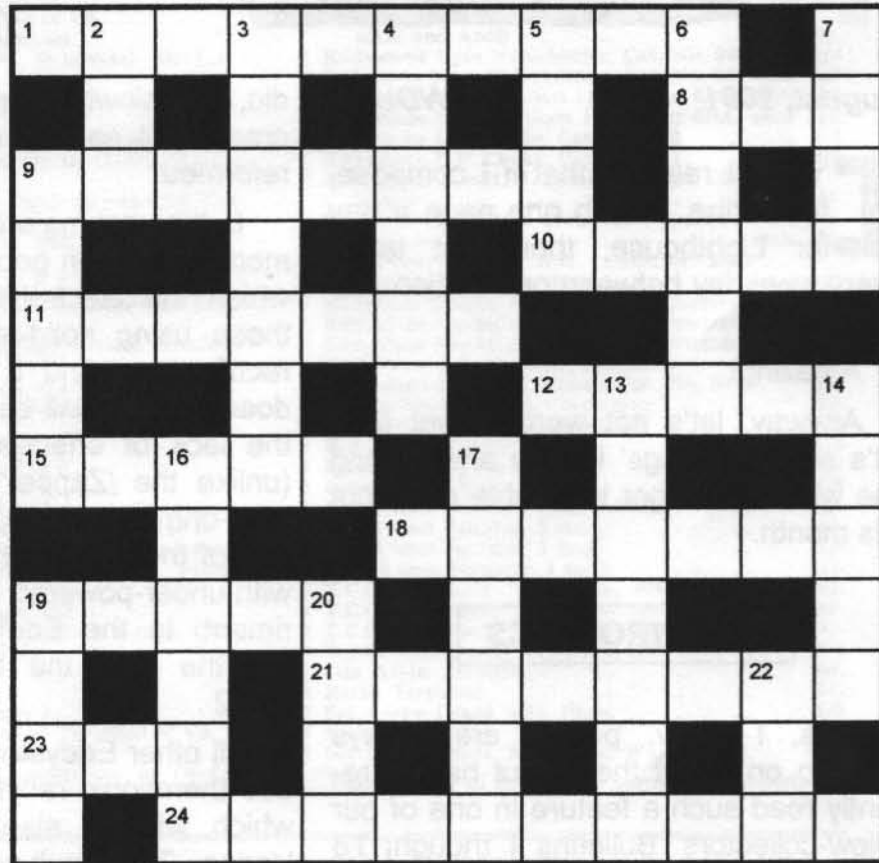
16. The 'Lighthouse' is only ready for publication after it has been — (6)

17. An Eddystone collection "put by" for the future (6)

19. Circuit diagram label for the combined composite video, blanking and sync signal in a tv receiver (4) (init.)

20. WW2 British meat ration (4)

22. Individual item at a radio auction (3)



# RADIO RAMBLINGS

*Gettings from my Notebook*



By  
*Graeme  
Wormald  
G3GGL*

August, 2001

BEWDLEY

**I**'ve just realised that if I compose, transcribe, or crib one page a day for Lighthouse, then that takes every weekday between one edition and the next.

Amazing!

Anyway, let's not worry about *that*, let's say 'Greetings' to one and all and see what we've got to ramble on about this month.

## ELECTROLYTICS

Yes, I know, people are always banging on about these, but having recently read such a feature in one of our fellow-collectors' Bulletins I thought I'd have *my* two-pennorth now. First of all, I have had no more trouble with electrolytics than with any other condensers: less, if anything.

Second is that my simple 'Condenser Zapper', which was published in Issue 34 (page 6), is eminently suitable for reforming high-voltage electrolytics without any fancy sequencing: it is automatic.

When the leakage is highest the voltage is lowest. It slowly increases as the condenser re-forms. It's foolproof.

But what I do wish to put to bed is the Variac myth. Variac is a trade name for a continuously variable mains auto-transformer. It is based on a tapped toroid choke and a large knob on top selects the voltage 0-250.

Sources have suggested that it be used to supply voltage to a vintage ra-

dio, very slowly – many hours, that is, increasing it so that electrolytics may be reformed.

In the vast majority of sets this will do more harm than good. The only sets of which the electrolytics will benefit are those using solid-state diodes for HT rectification. And if a serious leakage does occur it will be catastrophic due to the lack of effective series resistance (unlike the 'Zapper', which has half a meg-ohm or so). In the meantime the rest of the valves are struggling to work with under-powered heaters, to their detriment. In the Eddystone range these are the 670, the 830-series and the EA12.

All other Eddystone mains valve sets use thermionic rectifiers, the heaters of which will be also controlled by the Variac. The result will be a period of severe stress on under-heated cathodes resulting in possible damage. The electrolytics, in the meantime, will be getting little or no forming voltage which will then suddenly increase exponentially.

The whole process is without merit and any success gained would have been achieved just by switching the set on! Ignore such ideas.

And don't bother to try and reform low voltage electrolytics (cathode decouplers). Just change them for new ones which are cheaper than wire! A £1 bag of them should last you a life-time.

## IMHOFS

Many members have made remarks about the above well-known Hi-Fi re-

tailer and their association with Eddystone. This struck a blind spot with me as I never associated the two. A little research told me why! I belong to the wrong generation!

You see, I was born & bred into a "Webbs Radio" regime. This, of course, was a wholly owned subsidiary of Stratton's, created in 1924 when George Laughton (Snr) took over the lease of a shop in Stephenson Street, Birmingham, and told his eldest son, Stratton Laughton, to get busy turning it into a radio shop.

It was intended to be the first of a large chain but by the nineteen-thirties only five had been opened

Due to the onset of World War Two and Stratton Laughton's absence in Australia (which is another story altogether) it was finally decided to abandon the project. Only the London branch at No 14 Soho Street, just off Oxford Street was retained.

But in 1946, when I caught the 'bug', they were advertising widely in the press, especially the ubiquitous *Wireless World*. They carried on throughout the '40s and '50s and then, of course, Marconi bought Eddystone from Stratton. This didn't include Webbs Radio (Marconi wasn't in the retail game) and so the outlet closed down.

Imhofs were originally a partner in *Imhof und Mücke*, manufacturers of mechanical orchestrions. These were large brass chamber barrel organs, one of which was installed in Blackpool's famous Tower Ballroom when it was built in 1891. It was soon overtaken by the dance-band era and after a chequered career ended up as a showpiece in the Birmingham Science Museum (which I understand is being re-built).

Here I go, digressing again. Anyway, after the closure of Webbs Radio, Imhofs were appointed Eddystone's main retail agent in Central London until the company pulled out of the High

Street in the mid-'seventies.

## LOOT

This is another name which members keep throwing at me. "Have you seen the latest Loot," they ask me.

No I never have. Until now, that is. It seems that "LOOT" is the name of a freebie admag which circulates everywhere in the country except Worcestershire!

Last week EUGer Anthony Richards, GW4RYK, E-mailed me and said "have you tried this site?". The site in question was [www.loot.com](http://www.loot.com) Now I have to say that I have a distinct aversion to websites of any description. I consider them to be the biggest time-waster since Television.

However, of all the sites offering things for sale this is by far the simplest to navigate. After twiddling your thumbs whilst the site resolves itself, you just enter the word "Eddystone" in the search box and up they come! Seven of them last week.

Two 730's, two 990S's, an 840A, 888A and a 770R MkII. Nothing terribly exotic, but perhaps our disgruntled member (or anybody else) should look there . . . If you don't have the PC call in at your local public library; most of them seem to have the web facility these days.

## MORE E-MAIL?

An E-mail from Oz asks if we've ever thought of sending out *Lighthouse* by this facility. He tells us that ARDXC (an Oz DX Club) now offers this as a low-cost option, especially popular with overseas members.

It's not my cup of tea, I'm afraid. It would take me all month to get the thing



out on the line! We'll stick to folded paper; it's easier to read in bed . . .

### QUARTZ HILL LIVES

Members will recall Peter Lank-shear's two-part bio-feature about life on New Zealand's Quartz Hill 50 years ago. ('Lighthouse' 64 & 66).

Well, 'Contact' magazine, the monthly publication of the World DX Club, reports that Wellington Amateur radio Club (ZL2WB), has formed a Quartz Hill User Group (sounds familiar!). Using the call ZL6QH they operate from the old NZBS receiving station, so graphically described by Peter.

They also use the original V-beams with legs up to 1000 ft long. Wow!

### TOKO IFTs

Chris Morgan G3XFE, chairman of our EUG First Sunday Net, writes to say that he had to buy £5-worth of Toko IFTs for his EB37 project (see this edition, *An EB37 Brought Back from the Dead*). This is BEC's minimum order, so Chris now has ten IFTs to spare!

If anybody is contemplating a repair on an EC10-series Eddystone they might care to send Chris a £1 coin taped to a letter and he will send a couple by return (p&p incl). He can be found at 159, Hampermill Lane, Watford, Herts WD1 4PF.

### RUSSIAN ROULETTE !

Whilst speaking recently to a former Bath Tub engineer he mentioned a curious 'find' which he spotted during the peak of the 'Cold War'.

This was a drawer containing several

chassis each with rows and rows of ECC82s – or similar. It seems that they were standby units for the decoding machine at the British Embassy in Moscow. Mmmm. There was more to the Bath Tub than met the eye!

### BEWARE THE POLARITY !

Just after the last *Lighthouse* was published, Ted called me about the EB35 Mk III that I had mentioned.

If you recall, I said that I was surprised to see how different it was from the other Mk's. Ted reminded me of the AWFUL WARNING!! The '35 Mk III is the ONLY EC10-derivative that has a NEGATIVE earth. All the rest are the old-fashioned positive earth.

### NEW PAINT JOB

EUGer Mike Kivlehan writes from Nottingham to tell us about a new paint job he had on an Eddystone 730.

This was done by a small spraying and finishing company in the town. They sandblasted and powder-coated the set for 'not much more than the price of a couple of cans of aerosol spray' says Mike. And the work is some of the best he's ever seen.

For details of the firm phone Mike on 01159 227250 (hard wire) or mobile 07970 852010. If you have the facility you can or e-mail him on (wait for it!) michael@kivlehan.freeserve.co.uk

### DIAL DRIVE GEAR TEETH

Another message in from our Welsh Wizard, Anthony Richards GW4RYK. You may remember that a couple of years ago he had some gear-wheels cut

for Eddystone Style 'B' and 'C' sets (as in QRG) and wrote an article in the Newsletter. You may also recall that recently he advised that he was onto the last two or three sets of cogs.

Well, now he's sold them and is opening a subscription list to order another set. Anthony has to lay out an appreciable proportion of £100 to have these specially made for us.

So if you think you're going to have a project or two going this winter (or next) give Anthony a call on 01686 630 255. The last price was £5 a pair or £3 for one, post and instructions included.

**COLLECTING MANIA**

(Again ?)

Some of us do like our little radio-related souvenirs, even when they are highly commercialised. Well, just in

case you missed it in RadCom, the Royal Mint has issued a Special Commemorative £2 coin to mark the hundredth anniversary of Marconi's great leap from Poldhu, Cornwall to St John's, Newfoundland.

It's currently available in a special pack, with extracts from Gordon Bussey's MUST HAVE book "Marconi's Great Leap" (Pub. by Marconi plc).

The £2 coin pack is available from the sales counter of all Crown Post Offices, price £6.95.

The book (96pp) is available from PW Publishing (tel: 01202 659930 for credit card order), price £6.99 plus £1.25 P&P inland or £2.50 overseas.

I'll bet you didn't know that when Marconi made his big DX, the Anglo-American Telegraph Company threatened to serve him a writ, so he moved out of Newfoundland into Nova Scotia! It's all in the book. ★

**Eddystone User Group News-letters and Lighthouse on 'CD'**

**LIGHTHOUSE Volume 1**

Q(quick) R(eference) G(uide) 1998. Quick Reference Guide 2000. Post War Servicing 1946-1956 Eddystone Company Advertising Leaflets  
**Index Vol 1-42, 43-48, 49-54, 55-60.**

**LIGHTHOUSE Volume 2**

EUGN 55-60 Index.  
EUGN 55, EUGN 56, EUGN 57, EUGN 58 (No Supplement), EUGN 59, EUGN 60

**LIGHTHOUSE Volume 3**

EUGN 49-54 Index.  
EUGN 49, EUGN 50, EUGN 51, EUGN 52, EUGN 53, EUGN 54.

**LIGHTHOUSE Volume 4**

EUGN 43-48 Index.  
EUGN 43, EUGN 44, EUGN 45, EUGN 46, EUGN 47, EUGN 48.

**LIGHTHOUSE Volume 5**

EUGN 37, EUGN 38, EUGN 39, EUGN 40, EUGN 41, EUGN 42. **No Index**

**LIGHTHOUSE Volume 6**

EUGN 31, EUGN 32, EUGN 33, EUGN 34, EUGN 35, EUGN 36, **No Index**

**LIGHTHOUSE Volume 7**

EUGN 16, EUGN 17, EUGN 18, EUGN 19, EUGN 20, EUGN 21, EUGN 22, EUGN 23, EUGN 24, EUGN 25, EUGN 26, EUGN 27, EUGN 28, EUGN 29, EUGN 30. + Supplement to EUGN 20.  
**No Index**

**LIGHTHOUSE Volume 8**

EUGN 01, EUGN 02, EUGN 03, EUGN 04, EUGN 05, EUGN 06, EUGN 07, EUGN 08, EUGN 09, EUGN 10, EUGN 11, EUGN 12, EUGN 13, EUGN 14, EUGN 15. Index EUGN 01-06

**LIGHTHOUSE Volume 9** - Available November 2001 - It is already in preparation with Lighthouse 61, 62, and 63 prepared.

PRICE £5 EACH VOLUME (One CD) Including P&P. £6 overseas including P&P.

Place your order (cheques payable to 'EUG') through Graeme Wormald, who will send me the necessary information for sending you the disks. Delivery - normally within 7 days of Graeme receiving the order.

David Oakden

G3UFO/VK6DJO

# A \*Denarius for your Thoughts

By Graeme Wormald G3GGL

**K**een-eyed Richard Witney, G4ICP, has pointed out the presence of a Lighthouse on Britain's former Imperial Penny; the one which was withdrawn on decimalisation in 1971. "Is it the Eddystone?" he asks. Well, I've asked around but nobody has a clue! Perhaps one of our members with an interest in Numismatics (*or the study of coins, to you at the back*) can look into the matter for us. Here are some ideas to start with:

The first coins depicting Britannia on the reverse (or 'tails' side) were issued by Emperor Hadrian around the year A.D. 117, commemorating the restoration of order following an uprising in the Province.



**T**his figure in various (recognisable) forms was then used throughout the Roman period in Britain. But for the next millennium she disappeared from our currency.

She re-appeared on the Charles II copper half-penny in 1672 and continued to appear on the tail side of every copper (and bronze)

coin until well into the Twentieth Century. 1937, to be precise, when she was retained only for the Penny.

On Queen Victoria's new issue of 1860 (known as the 'Bun Penny' due to her hair style) a sailing ship and a LIGHTHOUSE suddenly appeared. Could this have been in honour of Smeaton's (still standing) Eddys-

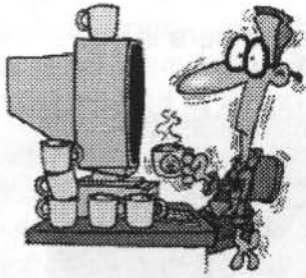
tone Light? On the 'Old Head' issue of 1895 the Ship and Lighthouse vanished; the Ship forever.

The Lighthouse alone re-appeared on the pennies issued in 1937 for King George VI, the father of our present Queen, and were continued on her Imperial Pennies (or Pence) until 1971. Eddystone or what?



**\*Denarius.** A silver coin of ancient Rome, often called a Penny in translation. It gave the symbol 'd' for the traditional penny of British currency (as in 6d. for sixpence). The word *Penny* itself is derived from the Old Saxon *Pennig*; cf. modern German *Pfennig* (a coin valued at one hundredth of a Mark)





# POO'S PONDERINGS

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

July has proven to be just a little hot for us Northerners who are used to regular rain and snow. You remember snow – it's that white stuff that tends to make your shiny new car head in the direction of the most immovable object in its path. Enough of that, let's get down to business!

## Glass breakages

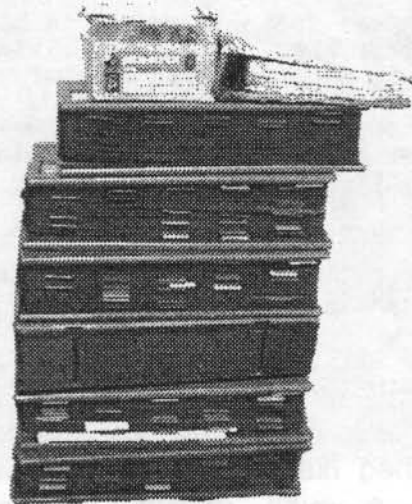
This is a warning to anyone sending treasured objects by courier! In the past I have normally sent parcels with 'FRAGILE – PLEASE HANDLE WITH CARE' written boldly on the top. No problem. I recently had to send a particularly fragile parcel containing an old domestic radio with a large glass dial. I thought I would mark it 'FRAGILE – GLASS – DO NOT DROP'. What I was not aware of was that no courier will insure glass items so beware. The radio arrived with – you've guessed it – a broken dial.

It would also appear that the men who courier the parcels know this too! Having spoken to several over the last month they apparently see who can get the first tinkle! The moral here is don't tell them there is glass inside and pack the glass so it will withstand World War III.

## Lost Treasure – *almost*

Graeme has recently been to the factory and brought back a massive amount of historical information that Eddystone were planning to skip! This could be easily classed as sacrilege! There are several large blue files containing information on each receiver (certain models only) ever made. Included are serial number, works number, date and who bought the receiver. For example: a college in Edinburgh originally owned my 1990R. There is also a file containing Works Orders for dies and tooling used to make various models.

These records are mainly centred around the Second World War and into the fifties. We now know who is responsible for many of our prized possessions. There are still several hundred slides and photographs, which I am scanning to put on CD for use by the group. Again, these include receivers, trade shows, parts, production, service and several shots of the works. They will appear in 'Lighthouse' and on the Web. The picture above shows 'The Leaning Tower of POO' i.e. the large stack of records recovered.



I thought you might like a sample of the Works Order Sheets so here is one from 1958 referring to the plastic windows used on the 898 dial.

Quantity	Date Received	A. N. Number	Invoice Number	Date Passed	Less Returns
6amp	11/8/58	33540	30496	37/8/58	

This Order Number to be Quoted on all Invoices and on any References to this Order

ORDER  
WD / B      8867/K.

**3rd July, 1958.**

**Messrs. Phipps Plastic Products Limited,**  
Dome Works, 244, Bromford Lane, West Bromwich.  
5,898.

To Part Cost of Tools for producing  
Perspax windows to our drawing number  
6369E,  
..... @ 52. 0s. 0d. Part Cost.

AS PER YOUR QUOTATION REF. AP/CS/6300 DATED 8.7.58.

"These Tools to remain in your possession and at your risk, and to be maintained in good order and available for further possible use. They are not to be disposed of without our prior consent in writing and must not be used wholly or partly for the manufacture of goods for a third party".

Ack recd. 9.7.58.

**Director.**

Below is a sample of the cards contained in the massive archive of receiver records. It *is* supposed to be blank by the way.

ALLOC No.	TYPE	CO/CM	No. OF	R.O.A. No.	SERIAL NO.
CUSTOMER	A	PLAST ORDER	DATE REC'D		B
PACM/22		SPECIAL INSTRUCTIONS			
					INVOICE NO.
					DESP.
					METHOD



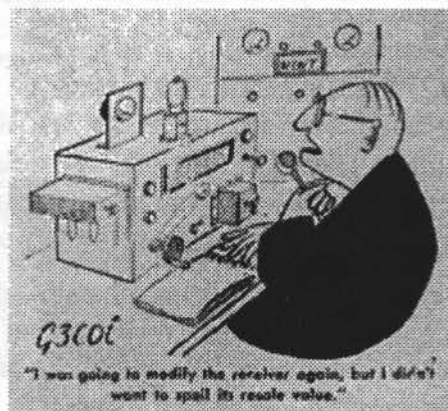
If you have any of the models listed below then an S.A.E. complete with details of your sets and serial numbers will produce a set of details. Please note: no S.A.E. – no reply. The address to send to is: *Simon Robinson M5POO, P. O. Box 66, Corbridge, Northumberland, NE45 5YR* or you can e-mail me at *simon@nomis.co.uk*. We ONLY have details on the following sets and yours MAY NOT be among them; it probably is though!

**1570, 1590, 964, 1529, 1535, 1990r, 1990S, 40A, EB35, EB35MkIII, 1964, 958, H2311, 1680, 1740, 1560, 1650, 5000, 990R, 1001, 1002, 1004, 1061A, 1061B, 1837, B6038, B3905 and RA1790 (a Racal set).**

If your set is not in the list I will let you know – promise!

### **Eddystone Modifications**

More sacrilege! Whilst trawling through some musty old Short Wave mags. I was surprised to find the number of modifications published for various Eddystone models including the 840, 730/4 and others. Eddystone designed these sets to perform a task, at a price and in line with the then current modes of operation. My feeling is that if you 'need' to modify your radio then get a different model instead! The chap on the right went a bit too far.



### **Blueprints**

I almost forgot but there were over one hundred Eddystone blueprints covering sets from several decades. Whilst these can be copied it would be rather nice to put them on CD for members too. If you have or know of an A2 image scanner that is compatible with a PC please let me know. Commercial charges for scanning these images are again prohibitive. Among them are diagrams for an All World 8 with extra holes drilled for additional controls. Could it be the LPC or R101?

### **Next Issue**

In the next 'Lighthouse' we will have an ex-employee's story about his first job. Needless to say it was at Eddystone. We also have an article covering BFO modifications for the 40A measuring set. Both articles were destined for this issue but POO left it late again and hasn't had time to do the computer processing. This 'work' thing really does tie up too much of your spare time.

Fortunately Graeme always keeps something in hand so you will still get an 'action packed' issue of 'Lighthouse'. *Finally, would the gentleman who bought a large pile of blue bound, early QST's at the NEC contact me?*

See you next issue - 73 de Simon M5POO



# A Sign of the Times?

Stratton & Co., manufacturers of Eddystone Radio sets in Birmingham since the early 1920's, decided to stop making sets for the domestic market in 1930. Only sets capable of short-wave reception would be produced. Was the Company influenced by the following report, (reprinted with acknowledgement, from the BBC Year Book)? Make up your own mind . . .

*Research by Graeme, G3GGL*

## "THE KING SPEAKS TO THE WORLD"

AT 11 am. on Tuesday, January 21<sup>st</sup>, His Majesty the King officially opened the London Naval Conference of 1930 in the House of Lords. The B.B.C. was able to make arrangements which resulted in what may be truly described as a broadcast to the world.

The B.B.C. received from all parts of the world reports on the reception of the speech, which make it clear that the broadcast was almost a complete success.

The area covered was some seventeen hours of longitude, and conditions of reception were, therefore, necessarily very varied.

In Europe all the more important countries reported participation in the broadcast with the exception of Spain and Russia. In some countries interpreters were used for the speeches in foreign languages.

In Italy the King's speech was taken down in shorthand both in Rome and in the Vatican City. Reports from Iceland show that many inhabitants listened to Daventry (5XX) direct.

Five different channels were arranged for reception outside Europe

1. G5SW, the B.B.C.'s Chelmsford experimental shortwave station;
2. the Rugby Transatlantic telephone service to New York;

3. the experimental Beam telephone service to Canada;
4. the experimental Beam telephone service to Australia;
5. the Beam telephone link with Japan, which is still in an early experimental stage.

No other previous arrangements were made, but it is a remarkable proof of the world-wide interest of the event that a number of short-wave Stations joined in spontaneously.

In Holland, for instance, Noordwijk picked up the speeches from 5XX Daventry and PCK (Kootwijk) passed them on to Java, (Dutch East Indies) where they were again radiated by PMP and PLE.

It is believed that both the Dutch station PHI and the German station Zeesen were also listened to in various parts of the world. The B.B.C. listening post at Tatsfield overheard rebroadcasts by Manila in the Philippine Islands and two short-wave stations in the United States.

### CANADA

The Canadian National Railways' chain of twenty-five broadcasting stations received the speeches from the terminal of the England-Canada Beam, and rebroadcast them, with excellent results, from coast to coast.

## UNITED STATES OF AMERICA

Arrangements had been made with the two "chains" of the National Broadcasting Company and the Columbia Broadcasting System for rebroadcast in all parts of the United States. The N.B.C. used fifty-five stations and the Columbia thirty-eight. Of the two channels to the United States available, the N.B.C. used G5SW (B.B.C.) and also occasionally Rugby, while the Columbia system used the Rugby telephone with full success. From correspondence received from individuals, it is clear that public interest throughout the States was very great in spite of the fact that the broadcast took place at 6 a.m. New York time (which was 5 a.m. in Chicago and as early as 3 a.m. on the Pacific Coast). No reports of reception in Central and South America were received except from the Falkland Islands, where apparently the Government broadcasting service received the speeches satisfactorily from G5SW.

## AFRICA

Arrangements were made by the three stations of the South African Broadcasting Company to attempt rebroadcast of a pick-up from G5SW. It appears that the attempt was unsuccessful, though Johannesburg reported a period of good reception. Subsequent evening talks on the Conference were well received and rebroadcast. The British East African Broadcasting Company reported good reception of the rebroadcast from Java, but no relay was attempted.

## ASIA AND AUSTRALIA

In Australia preparations for rebroadcast were made, but little or no success was

achieved, while in New Zealand, on the contrary, several stations (G5SW in England, 2XAF in America, and PLE or PMP in Java) were well received and rebroadcast from the four stations of the Radio Broadcasting Company.

In the Philippines the Manila station KZRM received and relayed the speeches, and its transmission was picked up at widely different points of the globe, includ-

ing Tatsfield, the B.B.C.'s receiving station near London; the source of Manila's reception being probably Java. As regards Japan, the intention had been to rely upon the experimental beam service from Dorchester, and on G5SW, but in ac-

tual fact the rebroadcast, which was carried out fairly successfully, seems to have been based on reception of KGO, Oakland, California.

Hong-Kong reported excellent reception of the King's speech, which was picked up from a short-wave station in Holland and rebroadcast from the local station. In parts of India there was fairly satisfactory reception of G5SW by amateurs, but no rebroadcast, while in Ceylon reception appears to have been wholly impossible.

It is interesting to note that the B.B.C.'s regular correspondent in Malaya listened to Manila KZRM, which itself picked up PLE Java, this in turn receiving from PCK in Holland the output of Daventry 5XX. ♠

*POST SCRIPT: It is a sobering thought that, of this world-wide HF/MF link-up of over 70 years ago only 5XX (long-wave) and G5SW were using AM. The other four "beam stations" were on SSB!* ★



# An EB37 Brought Back from the Dead

By Chris Morgan G3XFE

Sometime ago I found a plea on the internet from a person living near Oxford who had an Eddystone EC10 Receiver that wouldn't receive a thing, and could anyone fix it for him.....? It had suddenly stopped working, so he said. I had just completed work on 2 such receivers and knew the set reasonably well so I answered his plea. He replied immediately and as he travelled to Enfield at least once a week to visit relatives he could drop the set in to me at Watford when passing along the M25.

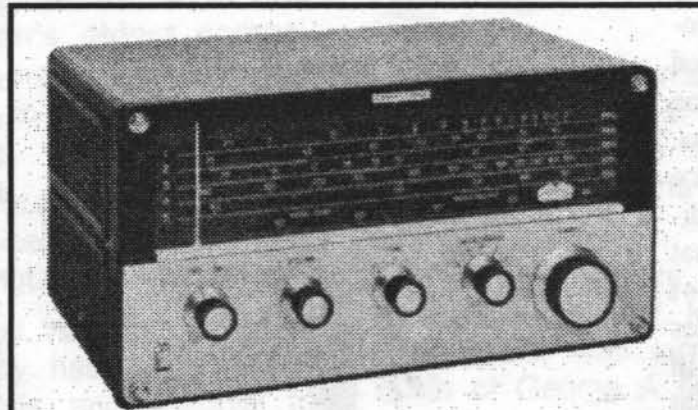
As arranged, he called in and left the receiver with me. It turned out to be an EB37.

The story was that he had kept it on a shelf in his garage for the last 10 years. He listened to music whilst working on his vintage Jaguar, amongst other things.

I had a look at the inside and started to document everything I found that was wrong. No one had touched it, but mysteriously IFT1 cover was missing and the coil assembly broken from its base. IFT2 wasn't there. It also turned out that four OC171s had blown. The wavechange switch was in a bad way as a couple of the contacts seemed bent and didn't work on two bands.

The set was effectively terminal unless I could get hold of a couple of IFTs. I offered to swap an EC10 and a small cash balance for the EB37 which, if at some stage I could get it working, would revive a relatively rare old Eddystone. He accepted and drove off a happy man.

I put it to one side nine months ago and



**"The EDDYSTONE Model EB37 is a fully transistorised receiver designed and produce primarily for the enthusiastic broadcast listener whose requirements are not entirely fulfilled by the average domestic 'wireless set'. Normal long and medium wave reception is provided together with continuous short-wave coverage down to the popular 16-metre band. The receiver is normally powered from a self-contained battery pack but provision is made for mains operation using a special power unit which fits into the battery compartment."**

*September, 1972*

meantime tried exhaustively to acquire some replacement IFTs, to no avail.

Finally Ralph, G4EBL let me have one from an old EC-10 board. My thanks to him. This left me short of IFT2. Very briefly, I used a couple of TOKO transformers with the secondaries back-to-back to give me the double tuned IF required.

This worked after a fashion but one tended to pull the other when tuning them up. I settled for a single TOKO at 470kc/s (RMC502503N). Pin 4 went to the base of TR5 and pin 6 to the grid bias resistors as usual. That worked well once all other faults had been addressed.

In view of Jim Duckworth's recent article, I changed the IFT to his arrangement seen in "Lighthouse" No 66. This worked a little better than my circuit so I settled for that. By this time I had run out of OC171's so I referred to an Australian site which I stumbled across some months previously, details of which were sent to Graeme who



published them in an earlier edition.

That station had successfully replaced the old germanium transistors with silicon devices. I have tried this before on other sets and found no really suitable device that didn't give off a lot of spuriousities near 8 to 10 mhz and rendered that band impossible to align. On the other hand I have successfully used BCY71's along the IF chain.

Anyway, I used his suggested BC214L (available from Maplin, price 13p each – and doubtless many others). I only needed 2 replacements so I put them in place of TR1 and TR2.

To adjust biasing on TR1 I put a small variable resistor in place of the emitter resistor (R3, 470Ω) and peaked for maximum output on an output meter (AVO), carefully removed it, measured the value and substituted it with a fixed value (390Ω). TR2 worked OK as it stood.

Now I know that received wisdom tells us that you just can't do this with a silicon in place of a germanium. But I did, and it works. The circuitry in this area (including nomenclature "R3") is the same on EC10/EB35/EB36 as well as EB37, so I expect it would work in those.

The set re-aligned properly with none of the oscillator tracking problems I had encountered with some devices. I am listening to the set whilst typing this. The silicon device is much quieter and at 'switch on' I have to turn the volume to maximum to know if it is actually on. This receiver has been resurrected from virtual scrap condition and should last for many more years to come as it is a worthy set, lively on all ranges.

My reasons for this article are to endorse the findings of Jim Duckworth and also the Aussie station, as they really do work, and are well worth a try. ★

## Wear your E.U.G. Badge with Pride!

Actual size

3/4"

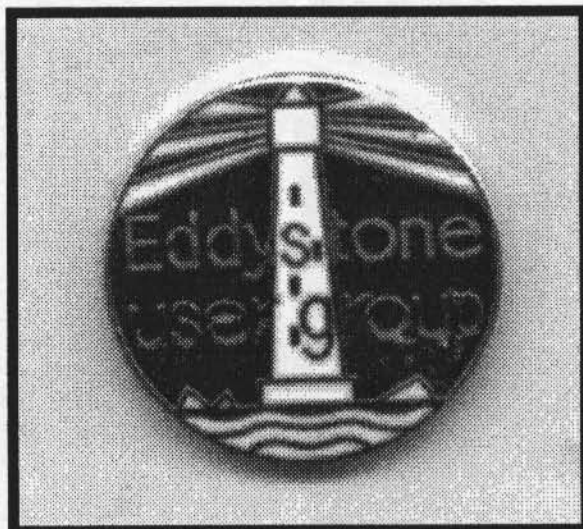
Diameter

(19mm)

Butterfly

Clip

Fitting



Send two £1 coins or  
one £2 coin  
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Graeme Wormald  
G3GGL

15 Sabrina Drive  
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Overseas members  
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**Chrome lettering, enamelled White  
Lighthouse and Blue background**

# A TOUCH OF EASTERN PROMISE

BY GRAEME WORMALD G3GGL

"A'DEN, a town and harbour on the southern shores of Arabia, in the province of Yemen. Before the British took possession of it in 1839, Aden was an ill-supplied, miserable place, consisting of a small number of mud huts covered with mats, and containing about 600 inhabitants; but since that time a vast change has taken place.

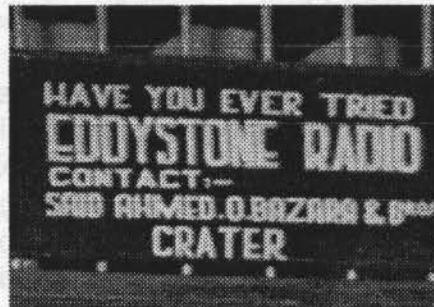
Hotels for the accommodation of passengers by the various steamers on the route to India and China have been erected, and the population of the vicin-

ity, attracted by the security for life and property afforded by the British flag, have flocked in large numbers to the place, which in 1891 contains 41,910 inhabitants.

The port is free from customs duties and has a large export trade in coffee, gum, ivory, pearls, &c. Its imports consist of cotton, silk goods and grain, but the principal

item is coal for the use of passing steamers. It is considered to be the 'Gibraltar' of the Red Sea."

*(from the National Encyclopædia, 1899)*







This, then is the background which established 'Crater' as the commercial quarter of Aden. It remained a British Protectorate until 1967, when it was incorporated into the People's Democratic Republic of Yemen. Independence brought with it considerable political instability which, to a degree, still exists today. Westerners arriving at the airport are accompanied by a police escort into the town.

However, back in the mid-twentieth century the Stratton Empire appointed Said Ahmed O. Bazara & Bros as their main agent in Aden. All shipping going through the Suez Canal passed by and

not a few called in the port, which had a good anchorage.

The emporium of the Brothers Bazara was a true Aladin's cave for the Eddystone fan. Visible in these pictures are a 680X (which dates it at c.1952), a rare 659 (identified by the EM34 magic eye in the top left of its dial), the famous seafarers' 670, a 740 and probably an 840; finishing off with what is almost certainly a 750!

Look no further, there are even two round diecast speakers, a plug-in S-meter and an Eddystone bug key; AND every set is on diecast mounting blocks.

★★



# A Simple Alignment Aid

When you decide to re-align any vintage radio the handbook tells you to use a signal generator and an output meter. OK, so where is it?

Most of us old-timers started to align sets before we left school, which means we did it without any test gear. It worked on a few domestic sets and homebrews but the failings of the system soon became clear.

A signal generator headed the list of requirements and for many of us that was sufficient. Peak it by ear. That'll do. Will it? Will it really? Mmmm . . .

Now the book says to use an output meter, and most multimeters have an AC Volts scale. But the lowest range is around 10 volts. Try reading 50 mV across a 3Ω speaker! Not much movement there . . .

But you'd be AMAZED how much closer you can get on the needle compared with the lug-holes (and don't tell me you can use the S-meter, because the AGC should be switched off!)

It so happens that many moons ago I acquired a Marconi Instruments output meter. A formidable beast; 15"x7"x5" and weighing in at about 20lbs. It has a wide-range impedance selector, an impedance multiplier, and a meter multiplier.

It works a treat, but I have to use it on the floor because it's too big to sit on the bench, and it hasn't got a monitor speaker built in. One day last month I decided that it should be sidelined. A \*K.I.S.S. version would be constructed from the contents of the junk-box. Like this: -

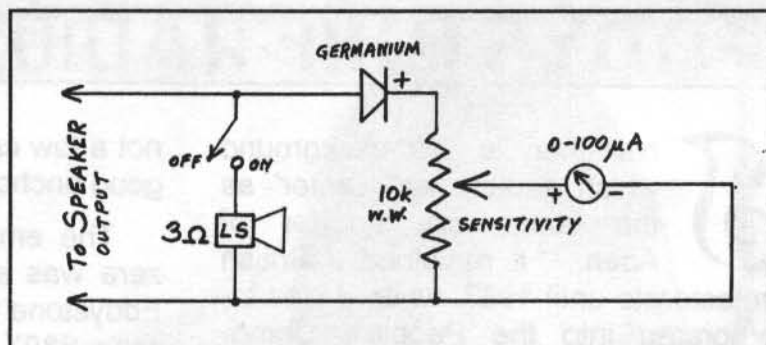
The first requirement is a 100 micro-ammeter (but a 50 or a 200 would do). The size and scale don't matter very much either, but mine was actually 6cm

square (2¼") and scaled 0-100. It sat nicely on the front of an Eddystone grey ABS box, 4½"x3½"x2".

The rest of the facility amounts to a sensitivity control in the form of a wire-wound pot., around 10k but 5-20k would be quite OK. Then a two inch 3Ω monitor loudspeaker for those sets without one; a switch to cut it out for those sets that have one, and a Germanium diode. Any sort of Germanium diode should do; mine is a GEX941 and must be 40 years old. It's nice to listen as well as to watch.

If you can't get a 3Ω speaker use an 8Ω one and shunt it with a 5Ω resistor.

Then put in a flying pair with 2 croc clips to put on the set speaker terminals and you're ready to go. Start off with the sensitivity at minimum and get the tone through from the signal generator in the approved manner.



When it's easy on the ears adjust the sensitivity pot for half-scale deflection and get to work – using the set gains to keep the needle central. Reset the sensitivity pot only as a last resort. You'll soon get the hang of it, and it only takes up a tiny corner of the workbench. Good Luck!

GRAEME — G3GGL

\*Keep It Simple, Stupid.

# Some Eddystone 940 Repair Notes

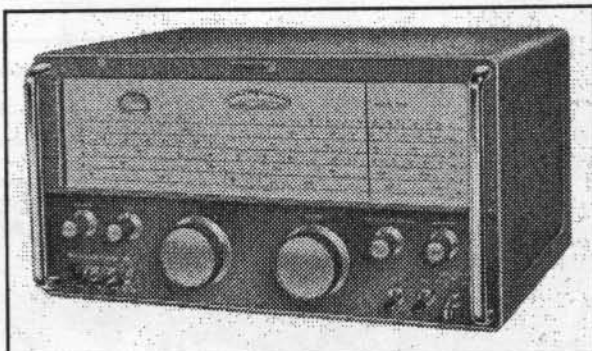
By Roger Bebbington MØBWP

**An Eddystone 940 was advertised as in good condition, which indeed it was when I arrived to inspect and try it out. The Radio was very clean both inside and out and apart from a small scratch on the cabinet the case was perfect.**

Its owner had connected it to a longwire aerial for demonstration and the radio worked fine except that when the AGC was switched in most of the volume disappeared. Not wishing to miss such a good example, the radio was purchased and placed in the back of my car. Before I put the radio into service as the shack short wave receiver I decided to get the manual and circuit diagram out and investigate all things AGC.

I have included the manual's circuit description because it clearly pointed me in all the right directions, "One half of V7 (6AL5) is used as the AGC rectifier and is

fed direct from the anode of the last IF stage via C88. The AGC is delayed by biasing the cathode of V7a from the divider R43/R44. AGC is fed to the two RF stages V1 and V2, the mixer V3 and both 450 kc/s IF stages V5 and V6. The AGC can be taken out of operation by S4 which earths the AGC line"



*The Model S.940 was designed by Chief Engineer Bill Cooke in 1961 to fill a gap in Stratton's High Street Range. There were no options between the modest 840C at c.£50 and the professional 830-series at c.£200. The 940 was designed using as many stock parts as possible and having the 'front end' performance of the 830. It went on the market at c.£100 and became an instant hit, continuing in production until 1970.*

Voltage checks on the radio revealed that the voltage test point on V7a was only about 7 volts when it should have been 45 volts. The cause of this was found to be R44. Instead of being 100K it was near to infinity in value and once changed the AGC worked fine. A full voltage check on the radio showed

there were no other serious voltage differences. Further checking back along the AGC line showed that a number of resistors around V1 ECC189 were out of tolerance although changing them made little or no difference to the radio's performance.

Of the condensers about five were changed including C72, an old 0.25  $\mu$ F paper Hunts which was across the heater supply and leaking badly.

### Summary

Now originally I was very much self-taught in the skills of valve radio and

now I am still relearning the game since my interest has been rekindled in recent years. It seems to me now that an extra skill is required. This is to be able to judge how far to go when encountering, say, a 30 years old radio that now has a number of components out of tolerance. I am still not sure I have quite got that one quite right. I seem to have spent a lot of extra time working on the radio after the original fault had been cured with little improvement, when all I really wanted to do was operate it. I think the rule that 'if it works OK then leave it alone' applies here.

