

Eddystone User Group Newsletter



Issue No: 56

August 1999



Featured Model "THE EDDYSTONE ORPHAN"

- A non profit newsletter for Eddystone Users
 - Compiled and edited by Ted Moore
- Information quoted from Eddystone Literature by kind permission of Eddystone Radio Limited

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FRONTIS

Difficulties with a neighbour and ultimately the council have conspired to keep me off the air for about a year. However I have managed to rig up a vertical dipole for 40m-10m and a dipole for 80m. I hope to get planning permission for a modest tower and some vhf/uhf/6m beams sometime this year. However my enforced sojourn seems to have resulted in a couple of embarrassing cases of dyslexia. Early one Sunday morning I was looking for ZL's on 40m and unable to raise one I went up to 18MHz, a band I have hardly ever used, lo and behold there was a very loud ZL calling dx. I tried to work him but when he heard my call sign he said I was a "very stupid man". On hearing his call again I realise he was an LZ!. I almost made the same mistake with a YO who I thought was a JO. I think my brain is trying to tell me something that I don't really want to know. Anyway being away from the radio for so many months, means that I can have the pleasure of discovering the hobby all over again. I must admit to being confused with all the new callsigns. You hear a 3XYZ and you imagine some exotic location in the Pacific only to find that it is a club station in Poland or somewhere less exotic. Well what does this have to do with the EUG, well nothing really except to remind me that as a comparative youngster of 52 I can remember the old days of surplus radio and the excitement of getting my first SWL QSL card (an Italian station as I recall with a husband and wife photograph and what was clearly a motor car steering wheel mounted in the ceiling to drive his beams). Graham has reminded me that modern hams often forget that in pre-war days, amateur radio was very much a rich man's hobby. A short-wave superhet receiver cost anything from £10 to £50 (the Eddystone ECR of 1939 was £40). A 'working man' could expect to take home about £2 or £3 weekly and a young graduate might clear £5. My first radio was an R208 (I think), advertised as a Sputnik special in the late 1950's for £5.19s 6d. It covered 10-60MHz and was used as part of the WS57 for anti-aircraft gun communications. I carried a copy of a Wireless World advert for this radio for the past 15 years and was lucky enough to acquire a mint condition R208 which stands proudly in the shack. Never switched it on though!

It can be good to reminisce and this months Eddystone Specified feature comes from the 1938 Eddystone Short Wave Manual and is entitled 'A miniature Amateur Radio Station'. It is a mini-rack construction which contains a power unit, a two-valve receiver, and a one-valve crystal controlled transmitter. It is 9 inches wide and 22 inches high and rated at 10/20 watts output (c.w. only, of course). Note that every item used is priced, just add it all up. (For younger and overseas members, pre-decimal listings, and in shillings and pence 12 pence equal one shilling; 20 shillings equal one pound.) The valves would have cost 10/- (shillings) to 30/- each extra.

Another good issue of the newsletter for you to peruse whilst on holiday or catching an hour in the sun or whatever EUG members do to amuse themselves.

All the very best
73's

Chris Pettitt - Patron
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ISSUE No. 56

presented
by
Ted Moore

This issue is the first out after the 'takeover' or whatever one chooses to call it. Our Group must now go it alone without help from Eddystone. Or maybe we shall be helping THEM! Graeme tells me that we have already been consulted on some matters.

One point that Graeme mentions in his mail to me is that we must attempt to define just where - re dates - we limit ourselves. Neither Graeme nor I have much knowledge of the later models produced by the Company, my 'hands on' knowledge ends with the 1000 series and the Orion 5000. I understand that Graeme has an even earlier cut-off date. We are going to have to come up with such a 'cut-off' as there is no way that we can provide fault/repair info for members, nor can we provide manuals for these highly complicated later models. Some of the manuals are a couple of inches thick and cost more than £50 to photocopy.

I have included an article from one of the ESWMs, a single valve preselector. Whether copied 'as is' to produce a replica, or updated using modern components, this preselector will enhance the performance of any comm; receiver.

The advert from a Melbourne dealer - Magraths's - which shows a rectangular cased Signal Strength Meter, apparently a plug-in version of the well-known diecast 'S' meter. This is a new one for me although I am told that it was on sale over here prior to the introduction of the diecast model.

A letter from one member queries some of the items mentioned on page 25 of Issue 51. He asks for some enlightenment as to the combs, badges, studs, and thimbles, made by Stratton as part of the War Effort. Do any of these still exist? Can anybody identify them? What on earth - asks John - was a 'helmet vent' of which some 174,000 were manufactured?

John also mentions the figure of 5,000 comm; receivers. This cannot be just 358s and 400s he comments, or we would still be seeing many more of them about. Here I can help in saying that there were many AW8 sets made as the R.101 military version, there would be the receiver part (S.450) of the VHF transmitter/receiver used on D-Day. There would also be some other models no doubt.

LOW GAIN EB37

This member has had no previous problems with his receiver over the many years that it has been in his possession. Used mostly for Short Wave Broadcast Listening in the evenings the EB37 is operated from the mains supply using an outside random wire aerial of about fifty feet, no ATU was used.

A recent spate of summer storms accompanied by quite a lot of local thunder, with several nearby lightning strikes, has apparently caused some damage since the sensitivity was found to be so reduced that even reception of the local stations in the Midlands Area has been seriously compromised.

Some first checks were made using a multimeter to monitor DC voltages as indicated in the manual. All of these appeared to be well within tolerance and so it became necessary to do some static tests on various components, those which had been indicated to be possible culprits. Signal tests by feeding in a test signal from a simple wide band tone generator of the multivibrator type showed that whilst gain appeared okay in the AF and IF stages the signal disappeared when applied to the RF stage. One small suspect item here is always the germanium diode which is across the first IF primary. In this case it read almost short circuit whichever way it was tested on the multimeter. A spare similar type was cannibalised from a PCB found loitering in the Junk Box, wired into circuit this had completely restored the original sensitivity and the receiver was boxed up again and put into use.

One strange fact is that an apparent large overload in the input circuit could have damaged this component yet it had not damaged the dual diode array which has been wired across the aerial/earth input sockets to protect against aerial static damage.

Living in a rural area where storm damage is common it has been thought necessary to put a resistor of 22,000 ohms from the aerial leadin to the earth connector which goes down to a buried earth rod in the garden. This will duplicate the working of the diodes in the receiver input circuit and remove any static buildup which may occur whilst the aerial lead is unplugged.

The whole repair process took less than an hour and since both diode and resistor came from the Junk Box the cost was nil, not bad in these days of high service charges ! James.

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GUNGE REMOVAL

Over the years it is normal for layers of "gunge" to accumulate on and around the moving parts of the drive system and in the case of my 730 this had got to the point where the buildup looked quite unhealthy. In some parts the stuff could be simply wiped off with a dry tissue but other more hardened gunge resisted this and some removal agent was needed. Care has to be taken here as there are chemical cleaning agents which attack aluminium or steel, i.e. the casting or the drive parts.

A friendly Chemist suggested the use of Isopropyl Alcohol and provided a small bottle of the stuff for 75p he advised against the use of meths since this has a high water content never knew that before ! In the event the alcohol worked okay so long as one was patient and left it to soften the gunge before attempting to wipe it away. In some hard to get at corners several applications proved necessary but now the whole drive system is as clean as new. The cleaning was followed by some light oiling with a pure mineral oil, the use of sewing machine oil or 3in1 oil was not advised. Bryan.

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830/7 & Missing Filters

Practically every 830/7 on the market, and some examples of other suffix versions of this model, will have had the narrow band filter crystals removed before they were disposed of by the Government Department who had been using them. Many had been fitted with filter crystals for the Piccolo System of Telegraphy and these were at the time on the secret list.

What this means to the 'new' owner is that the Narrow position of the Selectivity switch when the control is moved to this position does simply NOTHING ! This can be quite a disconcerting happening for the uninitiated.

If the receiver is opened up and upturned on the bench it will be seen that the control is meant to operate an adjacent microswitch which in turn connected the crystal into circuit. In the event the microswitch may, or may not, still be insitu.

Chas has come up with this situation and his 830/7 does not have the original microswitch but does have the operating 'tag' on the control spindle. He has adapted a current model microswitch from the RS catalogue and has got this operating quite well. He is now asking if any readers of the Newsletter can provide him with the source for suitable crystals which will enable him to have a narrow CW position on his 830/7 ? Any help will be much appreciated and you may write to Ted c/o Graeme or direct. Thanks. Chas.

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IN GOOD WORKING ORDER !!!

Anent the item in the last but one Newsletter, there have been several letters commenting upon the fact that in the eyes of the seller GWO simply means BUYER BEWARE. One member writes in to say that sadly his personal experience of over 30 years tells him to NEVER buy anything without both a Visual check of inside and out, plus an On Air test. Should the seller demur at either of the above then simply steer clear.

Again, in a second letter on this same subject we have David writes in to say that in the case of private sales the buyer has no legal redress at all.

I have to say that I would always ask to have a look inside and to try the set On Air if a mains supply was available. Ted.

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MARCONI H.5011 FSK ADAPTOR

QUESTION from Eric has anybody tried to use one of these with any Eddystone receiver and if so which model receiver and have you any info to offer ??? Replies to Ted Moore please. The 5011 that Eric has in his possession appears to be complete and working but he has only a minimum of technical knowhow and would appreciate some instructions. Thanks.

HELP ! ! !

Please, if you send in any items such as photos or snippets from magazines then can you please, PLEASE, enclose some info i.e. your name, and maybe where it was found. Two recent items have been a photo of an EC10 in use by a lighthouse attendant and a photo plus write up of the use of Eddystone Transmitters in Local radio stations. Nothing else enclosed in the envelopes ! ! ! I cannot yet read minds but am working on this. Ted.

A TOTAL LACK OF NDBs

This is the 'wail' that comes from a former keen NDB chaser. Sam tells me that he can now hear just a few of the original Marine NDBs that used to be audible in this country. The old NDBs have all gone QRT and been replaced with just a few higher power beacons with a digital component. At present the only UK beacons worth 'chasing' are the Air Navigation Beacons which are not audible on the majority of our older valve type comms; receivers. If you have an 850 then of course you are laughing ! Many of these Air Beacons are on the LF band starting from about 300 Kc/s up, and they use tone modulated AM. There must be many dozens of these in the UK both Civil and Military any comms receiver tuning up from 300 to about 450 Kc/s will hear them if the aerial system is any good.

COMMENTS FROM YOUR MAIL

An apparently open circuit heater 6V6GL which had been installed just a few weeks ago was examined carefully and it was seen that the pin 7 lacked any solder, heating the pin itself with the bit of a 45 watt iron and running a small quantity of fluxed solder down into the pin effected an immediate cure. To be on the safe side all the pins were treated in a like manner, the 6V6GL is now back in service in the S.640.

What appeared to be dirty switch contacts of the Bandchange switch on an EC10II turned out on examination to be loose fixing screws for the switch wafer segments so that when the switch was operated the whole segments were moving back and forth. Tightening them and adding a dab of sealant to the screw nuts was successful. The switch contacts were cleaned with switch cleaner aerosol anyway since the set had been opened for the first time in more than a decade.

cont; next page

A vibration induced intermittent on the 840c so sensitive that a finger tapped on the outer case caused the set to go off was found to be caused by a poor connection on the top of the dropper resistor. This was corrected and the set returned to normal.

Occasionally the 670A would not come on when switched on from the front panel, laziness had meant that for some time this had been accepted and the receiver was left unused for some months. When opened up on the kitchen table nothing untoward could be seen but some tests with the 1940s vintage AvoMinor showed that the contacts in the mains switch were not making every time. It was thought best to discard the component and purchase another pot/switch to do the repair properly. When this was done the set was once more put to good use.

The model 1000 uses those miniature toggle switches and they do not last as long as the regular sized equivalents ! In this example the second one to cause trouble was the spur to replace them all. A quick look at the necessary number of contacts for each one, a much slower, longer consultation of the RS catalogues and it was found that all could be purchased new for a few pounds. When they arrived the job was done in such a way that no errors, "finger trouble", could occur. The wiring and contacts of each switch were drawn out with coloured pens to match the wiring insulation, one switch at a time was tackled and completed including a power on test. It was a fiddly job with such small switches but the whole job was completed in several evenings of work hopefully another twenty years of life expectancy.

Whilst fitting new dial bulbs on the 840A it was found that they had become dim because as usual the glass bulbs were completely obscured by silvering over. New bulbs were fitted but at the same time it was seen that the wrap around wire connection on the Brimistor was no longer soldered tight. Even when cold it could be moved back and forth. After numerous phone calls a replacement was located and resoldered into place. It is always necessary here to make a good mechanical joint FIRST before soldering the Brimistor to the tags.

If using one of the EB35 or EC10 series from batteries it will be found much more economical to run the set from one of the 'layer' type such as the PP9 rather than the 'D' type individual cells. More than twice the life expectancy for lower cost of purchase make these PP9 batteries a good buy.

The 870A is an AC/DC model with the usual dropper resistor and in this case the top, 230 to 120 section had gone opencircuit. Rather than go bananas looking for a replacement a 'dropper' transformer was purchased at the NEC. Being second hand it was cheap enough at £2 and even though it was rated at more than three times the power load of the 870A it is boxed and can be safely located behind the receiver. Since it is double wound it also provides a measure of safety the receiver now being totally isolated from the mains supply.

If cleaning of a printed scale plate or glass, wipe first with a soft dry tissue to remove loose dirt. Then wipe with a tissue dipped in lukewarm water ONLY. Do not scrub or use detergents as this will remove printing.

A venerable 740 much used by the present owner needed to be fully revalved. The individual cost seemed disproportionate but by ringing around and listing the valves needed it was possible to reduce the purchase cost by £5 and get free postage and packing, well worth a thought if you need to do a complete revalve.

By now the rubber and cotton insulated wiring used to couple the separate 'S' meter to the receiver is getting decidedly 'iffy'. In this case the meter readings changed each time the wire was 'scrunched' up or moved. To retain some degree of authenticity the outer cotton sheath needs to be slid off the old cable and by attaching the new plastic wiring to the end of the duff wiring one ends up with a new, sheathed, cable which can be resoldered to the octal plug and the meter.

In trying to remove all of the many years of accumulated dust from a 730/4 the XYL's vacuum cleaner seemed to lack the necessary 'suck' to do the job properly. A dodge learned in the auto trade was used instead. The set was taken outside and put down on the patio table. The dust bag was removed from the vacuum cleaner and the nozzle was plugged in at the other end, thus giving an enhanced blower effect. The wearing of a dust mask over nose and mouth might be helpful here. It certainly reached those parts which could not previously be cleared of dust.

When trying to remove the grub screws from the knobs on my 750 recently some came easily but several defied even the drop of proprietary removing oil. Overnight soaking did not help and so it was decided to try a degree of force. The set was stood upside down to make the knobs more accessible and each of the 'stuck' knobs was tackled in the following manner. The knob, and spindle of course, was supported from the front of the set by building up books to the height where the knob was just completely supported by the topmost book. A few gentle taps then on the end of a blunted screwdriver shaft which rested on the top of the grub screw and Hey Presto, the grub screws came out easily.

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Silicon replacement for OC83s

A letter from Peter here asking about swopping the noisy OC83 output trannies in his EC10 for a couple of silicon types. He mentions that the output of the set still has an audible hiss even with the gain control at zero.

I have heard of this being done but before so doing I would suggest that he tries shorting the top end of the gain pot to chassis to verify that there is not an inherent fault there, this has been known. If the decision is made to fit silicon devices then the old standby BC212 type will do admirably so long as the base bias conditions are attended to.

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SHORTWAVE PRESELECTOR

A H.F. AMPLIFIER UNIT WITH REGENERATION FOR A.C. MAINS OPERATION
WAVERRANGE 9.7 to 66.6 METRES OR 31 TO 4.5 Mc/s.

The existing performance of any shortwave Receiver can be much improved by the addition of an efficient pre-selector unit. The one here described will have particular appeal to all listeners desirous of securing better shortwave reception for an outlay well within the scope of most pockets. At the same time the die-cast chassis and instrument type appearance make it a worthy acquisition to every Amateur station.

Its utility lies in the way it allows weak and almost inaudible signals to be brought up to sufficient strength to make them easily readable; it increases selectivity and sensitivity and improves the signal-to-noise ratio. It also reduces to a minimum second channel repeat points and in some cases eliminates them entirely. Further, it is extremely valuable in assisting the control of fading as the increased signal input brought about by the pre-selector considerably improves efficiency in the existing automatic volume control circuit.

Probably the most essential feature of the design is the inclusion of a regeneration control which increases the effectiveness of a one valve pre-selector to such an extent that it bears favourable comparison with other types of pre-selectors using two or more valves but not fitted with regeneration.

The advantage of a regenerative pre-selector does not rest at only improving receivers which are several years old or without an R.F. stage. It can be successfully used with modern sets especially of frequencies between 28 and 14 M/cs, as circuit losses on these ranges are particularly high and quite often there is surprisingly little gain from the existing H.F. stage.

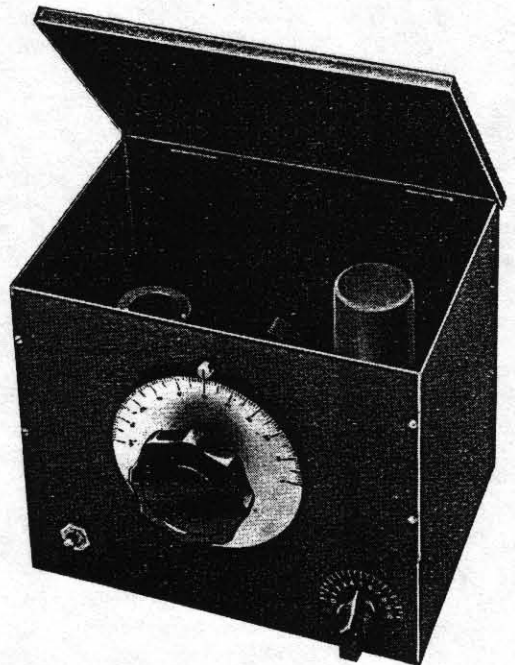
The valve used in this circuit is a 6 J7G which is in a screening can to prevent its input and output circuits coupling. Cathode regeneration is employed, control being obtained by variation of the screen grid voltage with a 50,000 ohm variable potentiometer. The tuned grid circuit is coupled by an aperiodic aerial coil and for regeneration purposes the grid coil is tapped a quarter turn from the earth end.

As the high tension current taken by the pre-selector valve is practically negligible it has been considered unnecessary to incur the extra cost of a separate high tension supply. The small current required can easily be drawn from the existing supply in the Receiver and so a separate filament heater transformer only is fitted.

The coils are arranged for home construction and for simplicity they are interchangeable in preference to the more complex switched assembly. Details of the windings, pin connections and tappings are given later. The circuit is tuned by a 100 mmfd Condenser fitted with a precision movement Vernier dial. Sharp and accurate tuning is obtained by means of the Vernier ratio reduction gear built into the driving head and characterised by its complete freedom from backlash. The dial scale is engraved 0-100 divisions and provided with a single line indicator segment. The pre-selector is built on a rigid die-cast aluminium chassis with sprayed metal panel which makes up into a workmanlike assembly. To complete the job the unit can be used in a smart metal case for which purpose the Eddystone welded steel cabinet No. 1061 is available.

CONNECTIONS.

The aerial is disconnected from the shortwave receiver and transferred to input terminal No. 1 of the unit. The lead from the output of the unit is then attached to the input aerial terminal of the shortwave receiver. If there are any special aerial arrangements on the shortwave receiver they should be so adjusted as though an orthodox "L"



Showing the complete Amplifier in Cabinet.

SHORT WAVE PRESELECTOR (continued).

type aerial were in use. The H.T.— socket of the pre-selector unit is joined to the receiver earth terminal. Unless a Dipole aerial is in use terminal No. 2 is connected to the earth terminal.

If a Dipole type aerial is already in use the two leads are connected to terminals 1 and 2 of the pre-selector unit. The only other remaining connection is the mains supply to the filament heating transformer.

OPERATION.

With all connections made the pre-selector unit is switched on and the regeneration potentiometer should be practically fully anti-clockwise. Since the tuning on the pre-selector is not very sharp when regeneration is not used, signals can be tuned in on the receiver proper. Tuning to resonance on the pre-selector will now intensify the signal and after a little experience the approximate dial settings, when the pre-selector and the receiver proper are in tune, will become known.

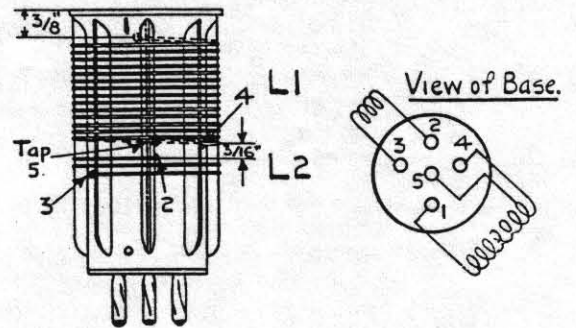
When the pre-selector is roughly in tune with the main receiver, regeneration can be applied which will increase the gain and selectivity of the pre-selector stage enormously. The point of regeneration should be reached in which maximum gain is obtained without actual oscillation taking place and at this stage a final slight re-tune should be made for best results.

The regeneration control should never be used so that the pre-selector unit is actually in a state of oscillation as this will prevent proper signals being received. The whole idea of the control is to obtain regeneration up to a point when the gain from this cancels out and equals the losses in the circuit. At this point selectivity and gain are at a maximum. Increasing the controls still further means that regeneration is greater than the circuit losses and oscillation takes place.

The correct use of the pre-selector to obtain really good results on weak and distant stations is acquired with practice and the results that will be obtained will well compensate for the extra small outlay and trouble the addition of a pre-selector occasions.

The assembly and wiring should present no difficulty if the layout plan and theoretical circuit are closely followed. All joints in the wiring should be well soldered, each lead kept short and rigid to prevent circuit variations. Extra care taken in the initial assembly and wiring will be amply repaid by consistent reception and freedom from noisy connections.

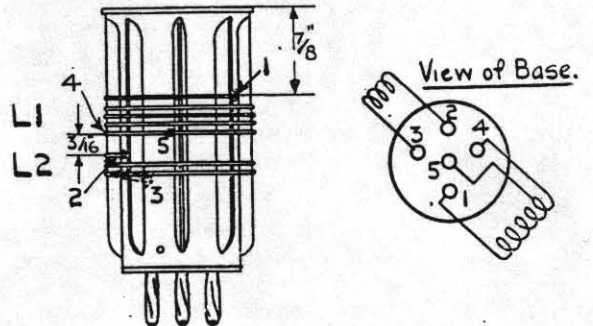
Details of coil winding and connections are as the following sketches. 22g tinned copper or enamelled wire is used throughout on all windings.



COIL 13 Mc/s — 5.4 Mc. s.

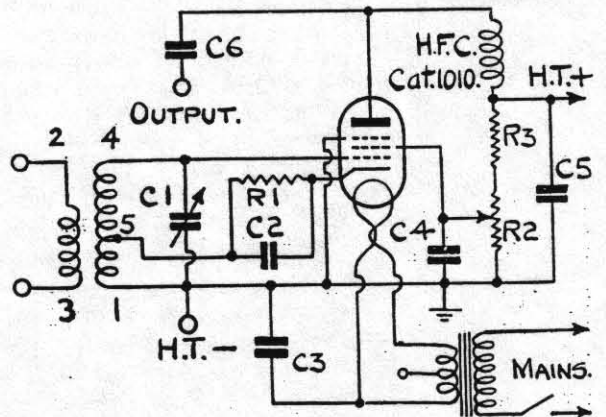
Winding L1 commences at 1 and finishes at 4, it consists of 14½ turns and is tapped at 5, ¼ turn from earth end. The tapping is taken through the coil former to the centre pin.

Winding L2 consists of 2½ turns.



COIL. 31 Mc/s — 12 Mc/s.

Is identical to the first coil but L1 consists of 4½ turns tapped ¼ turn from earth end, with L2 comprising 2½ turns.

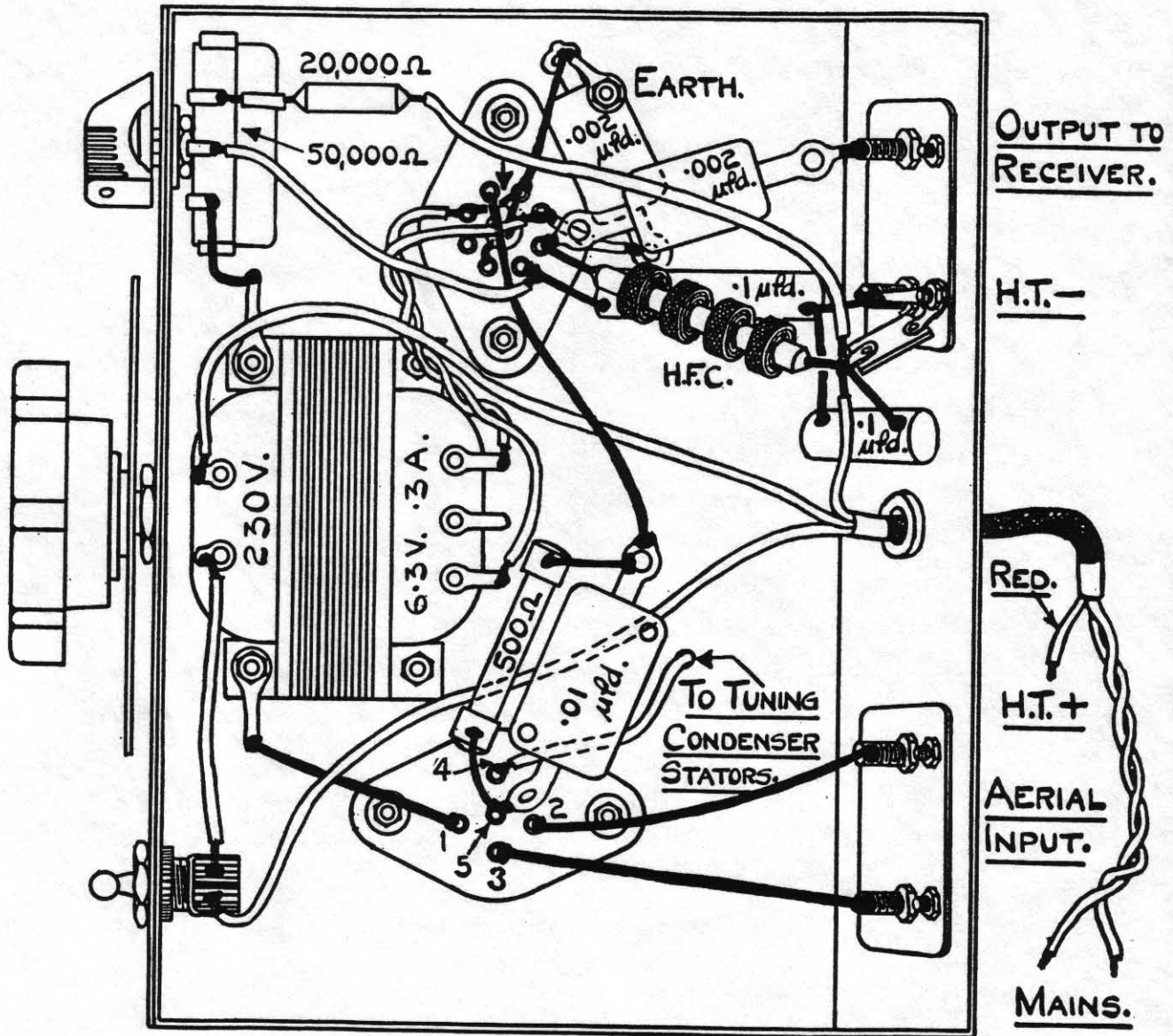


Theoretical Circuit. S.W. Preselector.

EDDYSTONE SHORT WAVE MANUAL

SHORTWAVE PRESELECTOR.

WIRING AND LAYOUT PLAN. UNDERSIDE OF CHASSIS.



EDDYSTONE COMPONENTS.

EDDYSTONE COMPONENTS.	Price
1 Diecast aluminium chassis with terminal panels, No. 1117	5/6
1 Metal panel, black ripple finish, No. 1118	1/9
1 Microdenser 100 mmfd (C1), No. 1130	5/-
1 S.W. H.F. Choke, No. 1010	2/-
1 Popular Slow Motion Dial, No. 1115	10/-
1 Pointer Knob and Dial, No. 1044	1/-
1 Frequentite Valveholder 5-pin, No. 1074	10d.
1 Frequentite Valveholder Octal, No. 1120	1/3
1 Insulated Bracket, No. 1116	1/3
2 D.L.9 5-pin coil formers threaded, No. 1001 at 2/6 each	5/-
1 Valve Screening Can, No. 1121	1/3
1 Steel Cabinet, black ripple finish, No. 1061	9/6

MISCELLANEOUS PARTS.

1 Two point On-Off Switch	..	..
1 Potentiometer 50,000 ohms R.2	..	..
1 Resistor 500 ohms 1 watt R.1	..	..
1 Resistor 25,000 ohms 1 watt R.3	..	..
2 Tubular Condensers .1 mfd. C.4 and C.5	..	..
2 Fixed Condensers .002 mfd. C.3 and C.6	..	..
1 Fixed Condenser .01 mfd. C.2	..	..
1 Filament Transformer 6.3 volts 3 amp output (Webb's Radio)	..	..
Length Three-way Connecting Cable	..	..
Wire, Screws, Nuts, Tags and Octal Valve Clip, etc.	..	..
Approx. cost of miscellaneous parts	..	..
1 Valve, type 6J7G is required.	..	..

24/-

* A Poser *

This is a puzzle for keen EUGers. Which paperback book, obtainable for £5.99 in most bookshops or from your local library, contains articles written by both Geoff Arnold (Radio Bygones) and by Graeme Wormald (EUG) ??? There is no prize offered for the correct response but you can check the answer on the back page of this Newsletter in my ENDIT piece. Ted.

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The Search for G3 EUG

Graeme started this off via queries addressed to the RSGB and RA but things have progressed since as a result of mention in past Newsletters. The latest appears to be the letter from EUGer Keith Jillings. Keith not only lives in the village where the holder of G3 EUG was last known to be living, he also is in a position to have access to local church records. He has gone even further and has spoken with a number of local residents. So far with no success. B Hutchings appears to be a bit of an enigma. Once more the question must be put, has any member knowledge of this callsign or this licensed operator whose address was given as Raymonds Drive, Thundersley ?

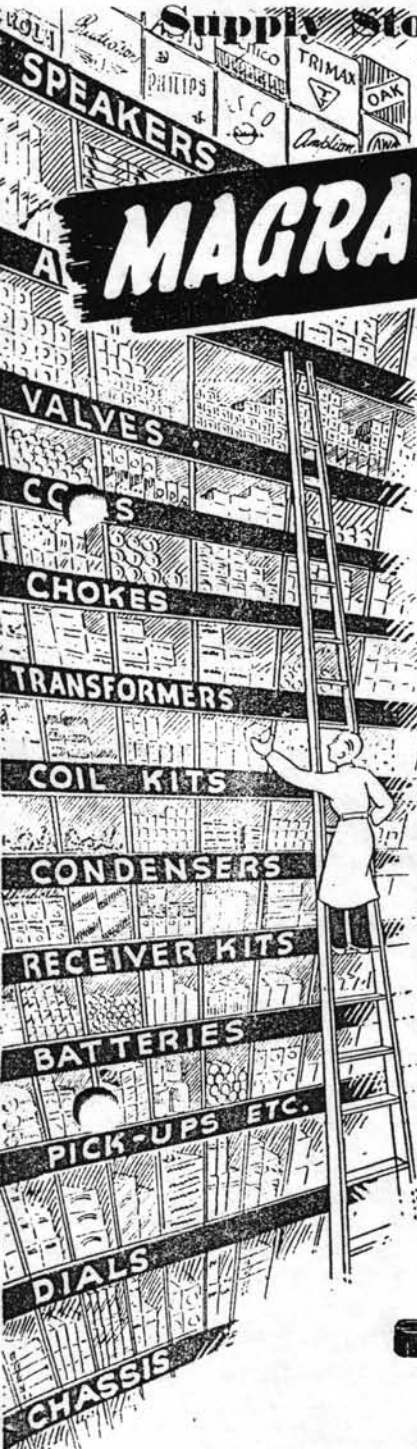
I seem to recall a fairly recent case where the RA was happy to accept paperwork which showed that all reasonable attempts had been made to locate either the former licensee or living relatives, and that they had then reissued the callsign. Maybe this can be checked out and could be the way to go ?

On a related matter I have made the suggestion to Graeme that since the historic Company callsign of G6 SL has been made available to EUG by Chris GO EYO, then maybe it is time that he, Graeme, aired it on the EUGnet. Let us see if GGL takes the bait. Ted.

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* * * HOW ABOUT THIS "S" METER ? WHAT MODEL NUMBER IS IT ? OR MAYBE IT WAS 'local' DESIGN.

The Radio Enthusiasts' Supply Stores!



MAGRATHS HAVE THEM..

Trimming Condensers



A.W.A.	2/3
Philips	2/-
Ceramic Postage Stamp Type	1/1

Dial Lamps

Now available . . . stocks of 6.3 Volt Dial Lamps. Get yours early while they last. Each 9d.

Aegis 10-15 Metre Converter

A huge success! . . . and now available for . . . £14/17/6

Wire Wound Resistors

3 Watt	1/-
5 Watt	1/6
20 Watt	3/6

Car Aerials

Three-piece type and heavily plated. . . . A really well made Car Aerial, priced at . . . 27/6

Connoisseur Pick-up



A new shipment of these famous English Pick-ups is expected this week. . . . Price £7/7/-

Eddystone Condensers

Transmitting type. Split Stator
611 w'th neut. condenser.
25PF/25PF . . . £2/19/9
612-50 PF/50PF . . . £2/15/-
614-100PF/100PF . . . £3/ 3/-

Signal Strength Meter



In an attractive black crackle case, with octal plug for Eddystone 640 Receiver. Adaptable to any Set. Priced at £6/12/-

Aegis R.F. Chokes

There is an Aegis Choke for every purpose in Radio.

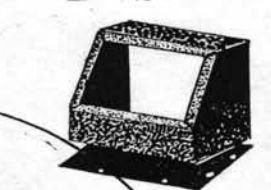


Aegis 4 pye 2.5 millihenries, as illustrated, is priced at 3/- each.

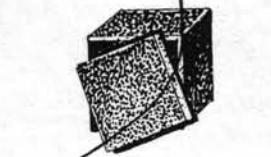


Single pye broadcast, as illustrated. . . . 3/- each.

Metal Instrument or Receiver Cases



We have a splendid variety of these Metal Cases, finished in black or grey crackle. Ask us for a quote on your requirements.



A. & R. Transformer

Our stocks are complete. Ask for a quotation.

I.R.C. Resistors

The stock position is improving. . . . We can supply:—
1 watt plus or minus . . . 13%
1 watt plus or minus . . . 10%
Also plus or minus 10% for meters, etc.

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Save on Transformer replacements! All types available from stock.

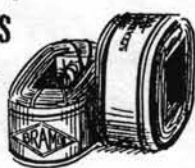


Plate Caps

For 807 valve. Insulated for safety, and priced at each . 2/-

J.H. MAGRATH & Co.

208 LT. LONSDALE ST. MELBOURNE *Phones: CENT. 3688* **CENT. 4414**

The Queen Mary

A letter from Steve who asks about the IMR54 seen perched on the top of the console. He asks whether it would have been an IMR54 or an S.700. Almost certainly it had to be an IMR54. One thing to note is that in the 'old days' when she was at sea the Q.M had a 220 volt DC supply only and no AC supplies. These days she has normal 60 c/s AC supplies to operate all that modern equipment.

Polychromatic 730/4

In a recent issue there was a query about this version of the 730/4 and now we have a further 'brown' version which has been owned by Peter since the mid -70s. He believes that his set came from the Factory and was one of several produced as prototypes.

The 820 VHF Tuner Unit

A version with scale markings from 90 to 104 and another with scale markings from 85 to 101 are both owned by EUGer Sam, both work okay and yet neither one has a serial number plate, nor any number stamped on the chassis. He asks for input from members on these two units.

MEGAHERTZ

Several queries about this company but neither Graeme nor I have much to offer apart what is in the public domain. Feedback will be welcomed by several EUGers.

CV Type Valves

I have been told that several Valve Suppliers have stocks of these available if EUGers want to re-valve their WW II models as original. You should not only order by the CV number but specify that you want this and not e.g a Mullard version.

A Stenode Modded 940

This mod was all the rage several decades ago and the 940 that this EUGer has purchased recently appears to have had the mod incorporated as per the SWM article.

The mod serves no useful purpose and so it is to be removed so that the 940 can be put back to 'original' state. The 940 has always been a favourite with many Amateurs and SWLs and it must go along with the 830 as the epitome of Hollow-State design. I guess that the letter page reproduced in this issue says it all.

This model is still available via the magazine adverts on frequent occasions, well worth getting one now before they all disappear from the market. They rarely have much wrong with them apart from a few resistors or paper condensers suffering from age-related problems.

A WORD IN EDGEWAYS

page 13

Sir

Do you think that Tim Wright is trying to tell me something with his articles on the Eddystone 940? The 940 is my main receiver and I have two of them. The 940 was introduced about 1967 at around £135, and I purchased mine a couple of years later second-hand. It had, apparently, been used by an amateur transmitter, as a pair of wires had been attached to the stand-by switch, obviously to operate a relay. At that time it cost me £145 - a very good bargain indeed.

It is in constant use for around 10 hours a day, some 350 days of the year. In that time, apart from making three or four major valve changes, I have only had about five valves burn out. Other repairs required being a loose grub screw on the vernier scale and a similar adjustment to the grub screw of the heavy balance wheel two or three times.

The second 940 I bought for £25 to provide spare parts, and is actually in better condition than my "number one" set. It had been "out of order," but I found that the tuning coil inserts had been tampered with. However, it has been brought back into partial service again.

I am still switching-on at 0400 UTC, with morning reception up to around 1030 UTC.

G E W HEWLETT

Sir

I have been very interested to read about Tim Wright's attempts to restore an ailing Eddystone 940 receiver. In my introduction to the now well-known G4DTC "Ultimate Hybrid" (Radio Communication, Dec 87 et seq.) I singled out this receiver as one of the all-time greats, capable of exceptional performance despite its age and low intermediate frequency.

A simple test of the sensitivity of a receiver may be performed as follows. Disconnect the antenna and substitute a dummy load, e.g. a small 50-100 ohm resistor between the antenna socket and ground. Turn the a.f. gain to maximum and you should hear only receiver noise. Now reduce the gain of the i.f./r.f. circuits until receiver noise just disappears. Reconnect the antenna, remove the dummy load, and tune the set to an unused frequency. Any noise then emanating from the speaker must be antenna/cosmic noise. The louder it sounds, the better is the signal to noise ratio of the receiver. (The antenna should ideally present a 50-100 ohm impedance to the set). If your receiver has no i.f./r.f. gain control then you should have bought one which has, since without one you cannot achieve an ideal gain distribution.

I only mention this test because the 940 passes it better than any other receiver

I have tried provided one small modification is made: that is to remove the gain control line from the ECC189 r.f. amplifier. Disconnect the gain control line from R4 (150 ohm) and connect the bottom end of R4 to the chassis. The ECC189 produces exceptionally low noise but, unfortunately, the gain control reduces its gain earlier than that of V2, the 6BA6. The result is that the wanted signal, particularly if weak, is reduced more rapidly than receiver noise. This is of consequence in the 940 because it really has too much gain in the r.f. stages and should be operated with the r.f. gain backed well off and the a.f. gain set high. It is this excessive gain which causes frequency-pulling (actually "frequency-locking") which, despite careful design to obviate the problem, can only be expected.

However my suggested modification allows operation at reduced gain and immediately removes the problem. Although I agree that it is not good practice to apply a.g.c. to the mixer since it can alter possibly critical valve working points, its removal appears to have no effect on the pulling on strong signals. This seems to be due to some of the signal arriving at the local oscillator grid and causing it to "lock".

I would also warn 940 owners against diving into the receiver and replacing

everything in sight. The 940 at this station still has all of its original components except for one of the notorious screen-dropping resistors. I have tried valve replacements, with no improvement, but I keep an eye on the general performance, re-aligning the set every few years. The practice of interchanging valves can detune circuits and alter the gain distribution. Extremely critical measurements would be needed, and complete re-alignment to decide which valve was best. It looks, and sounds, as though it were fresh from the factory. No leaky capacitors or faulty resistors have been detected. The low i.f. has caused no problems even at the highest frequencies and I believe that, with careful alignment, Eddystone's figure for image rejection can be bettered. The set is exceptionally stable, and dial accuracy incredibly good (although I, too, have fitted a very lightly-coupled buffer to drive a frequency counter).

Tim's fleeting reference to replacing all carbon resistors with metal film types might plunge the unsuspecting into many hours work. Most of them are totally inaccessible without taking the entire coil-pack to pieces and I wonder if he actually attempted this task of micro-surgery. Also, I would not expect any significant improvement; there are hardly any resistors in the signal path and most of those associated with the offending stages are solidly decoupled at r.f. Any improvement is more likely to result from better thermal stability, but even this is doubtful - and where does one obtain 1W and 2W metal film resistors? It should also be mentioned

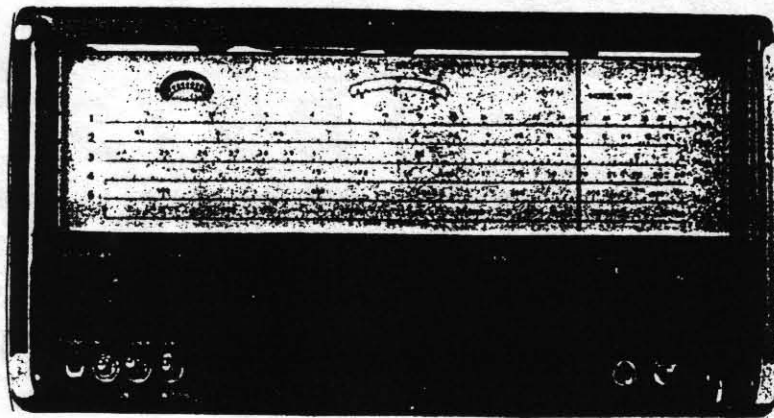
that, as the mains transformer has a 230V tapping, not 240V, all voltages will measure at least 5 per cent high and even 10 per cent in some places.

I would have liked to have seen further qualification of Tim's remarks concerning the tertiary windings on the i.f. transformers. This is an established technique for slightly over-coupling the windings to broaden the response curve and seems to have no undesirable consequences.

Without wishing to sound too clever or hypercritical I must add that I have never taken to the "stenode" circuit, although I have yet to see Tim's application of it. Highly-peaked, single crystal filters are useful for c.w. but introduce considerable harmonic distortion into "phone" signals. The stenode circuit attempts to restore tonal balance by removing the lower audio frequencies but, at the same time, seems to emphasise the distortion products. In addition, tuning becomes extremely critical, demanding a much higher tuning ratio than the 940 possesses, and extreme frequency stability. If the receiver drifts into the sidebands the effect is nerve-grinding.

Tim's article is the first that I have ever seen on this receiver, although I have noticed since my original comments in Radio Communication that a few "wanted" adverts have appeared for it. It was my "control sampler" receiver during the development of the G4DTC "Ultimate Hybrid", while in practice both are limited by cosmic noise.

RAY HOWGEGO G4DTC
CATERHAM
SURREY

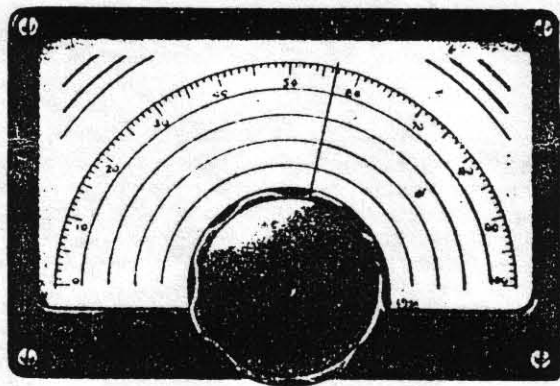


RADIO AND ELECTRONICS

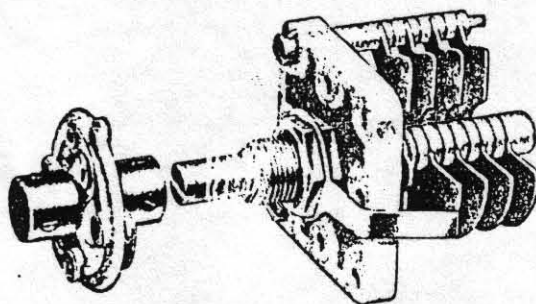
EDDYSTONE

SHORT WAVE COMPONENTS

FULL VISION DIAL CONDENSERS



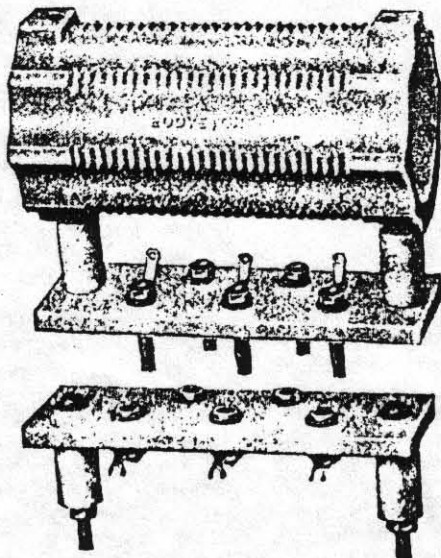
A most useful dial for all types of receivers, test oscillators and similar equipment. The dial escutcheon measures 6 in. long by 4½ in. wide. The scale is 5 in. across. The outer scale is marked 0-100 degrees and three other scale lines are provided for the user to mark in his own calibrations as desired. Two spare printed scales are supplied with each dial. A large fluted instrument knob is fitted. The drive mechanism has a reduction ratio of 10-1, is free from backlash and has a beautifully smooth movement. Cat. No. 598.



Eddystone also manufacture a complete range of variable condensers to suit the requirements of the short-wave experimenter, the professional radio engineer and the specialist trader. The condenser illustrated is an air dielectric condenser of 15 mmfd. capacity and is especially recommended for fine trimming and band-spreading purposes. Cat. No. 580.

FREQUENTITE COIL FORMER

Frequentite ceramic former for transmitting and similar apparatus. The former is 5 in. long by 2½ in. diameter, and may be mounted as illustrated or on Frequentite pillars. Spiral grooves take 26 turns of wire, up to 12 S.W.G. 14 holes are provided for leads and coil taps. The former is designed for coils covering 3 mc/s. upwards. Cat. No. 1090.



FREQUENTITE SUB-BASE

The sub-base is in Frequentite ceramic and is easily attached to the former by the two bolts and Frequentite pillars provided. It can be used separately as a base for self-supporting inductances. Helicly slotted power type plugs give positive electrical contact and even fitting to the ceramic is assured by lead washers. Leads are secured by heavy gauge tinned phosphor bronze self-locking soldering lugs. Cat. No. 1091.

FREQUENTITE BASE

The base is provided with Frequentite pillars for above chassis mounting. Heavy duty power type sockets give sound electrical connection with sub-base and lead washers on each socket ensure even fitting to ceramic. Leads are secured by heavy gauge tinned phosphor bronze self-locking soldering lugs. Cat. No. 1092.

FROM ALL RADIO DEALERS OR

ARNOLD & WRIGHT, LTD. (WHOLESALE ONLY)
AUCKLAND, WELLINGTON, CHRISTCHURCH.

S.358 Range B Coil Pack

A letter from Cliff Hartles, ex Strattons Engineer now resident in Germany to the effect that he has a spare Range B coil pack for the S.358 receiver. This is the coil pack covering the highest band from 9 - 22 Mc/s.

Cliff says that if any EUGer needs this coil pack to complete his receiver then he may have it gratis. I guess you need to pay the cost of postage and packing from Germany to UK though. The address to write to is F.C. Hartles. Waldstr 57. 32105 BAD SALZUFLEN. Germany. His callsign is DJ0 OS nowadays although he was first licensed in the UK in November 1948 as G3 ENH. Thanks Cliff.

Re Issue 53, p 32

This was the reason for Cliff's letter to EUG. He refers to the photo on page 32 of Issue 53 where a view of the test room at the BathTub shows many Rxs on soak test. My guess re the item being a piece of 'in-house' test gear was way off says Cliff. This may be seen by the fact that it has a Test Report Card tucked behind the knobs on the front panel. Cliff says that not all the sets shown in the photo are 940s. He points out that on the top row below the EP17Rs the sets have the S meter cut out on the right hand side of the scale. The two sets immediately below have the S meter on the left hand side of the scale. The chrome handles too are a give away as the latter two sets have the flattened form of chrome handles whilst the set above has the rounded (940) style. Again, Thanks Cliff.

EC10 IIs 'S' meter

Peter has written in re his refurbished EC10 where all is now okay with the exception of the S meter needle which resolutely wants to move the wrong way.

Without seeing the set itself I shall try to come up with some of the possible reasons for this. The fact that it wants to go backwards indicates that the bridge network is unbalanced so what to do is to look at the components in this bridge circuit which have been changed during the refurbishment. Any of the resistors could be out of tolerance, the diode may be either faulty or may have different impedance characteristics, there may be a dry joint which is causing an open circuit in the bridge.

Some measurements made with a good high impedance analogue meter should resolve this problem Peter.

MEMBERS ADVERT

WANTED buy or borrow to copy the manual for the Racal RA 1792 please.
WANTED to buy a good working 958/7, your price paid. Please phone Peter on 0141-649-2328 (Glasgow). Thanks.

Cannibalised IFs - AGAIN !

A letter from a non-EUGer which complains of the state of the IFs in an acquired EC10. The usual thing, the cores chewed up and damage internally to the former and windings.

In this case after desperately trying to get replacements of the correct type he has had to fall back on attempting to use a pair of old Perdio IFTs which are of different style altogether. I wish him luck but must advise him against this as the damage to the pcb will be such as to render it beyond future repair. I would be more inclined to attempt to rewind the IFTs, or have them done by a professional.

EB35 II Volume Control

Alan has been having increasing problems with his EB35 since it was taken on a camping holiday last summer. Nothing catastrophic but he has noticed that any movement of the volume control spindle, either up or down or even a slight tap on the knob from the front will cause crackles and changes in audio signal output.

He has tried squirting a few drops of switch cleaner into the pot itself from underneath the chassis. This had little or no effect but he has now found that by squirting a few drops onto the spindle where it goes into the threaded bush has cured the problem completely.

Whilst the set was open he decided to use the aerosol of switch cleaner on the wave change switch as he was amazed to see the black tarnished state of the switch contacts. No servicing has ever been done to this set in the five years since he bought it, time and enough for some to be done.

Feeding a RTTY Terminal from a 750

James has bought a professional 'black box' type of RTTY terminal unit and has been trying it out with his 750. Operation just taking the audio signal from the phones socket is satisfactory but then he seems to get some feedback from the RTTY terminal into the 750, with the result that the bands are full of birdies.

The problem would appear to be that the feed from the 750 to the input of the RTTY unit is also conducting this QRM back to the Rx. Screened leads with possible RF chokes at the RTTY unit end ought to help. Possible too a simple impedance matching unit and taking the AF signal from the speaker terminals might be a better bet.

Usually the manufacturer of these units includes some info in the directions for use as to elimination of QRM when the unit is fed from a receiver.

Setting the Ratio Arm on the 958 by Simon Robinson G8POO

Roger Sutton of Eddystone Radio gave the following information to me during a recent visit to the factory. Hopefully it will allow those members who are fortunate enough to have a 958 to reset the ratio arm if it becomes loose.

- 1 - Check the tuning gang is fully meshed with the drive fully anti-clockwise. Ensure the end scale mark roughly aligns with the cursor.
- 2 - Set 10 and 20MHz points exactly as described in the manual.
- 3 - Go to 20MHz and then tune down looking at the 16, 17, 18, and 19MHz points.
 - a) If points are on low side of calibrator input use 4a below.
 - b) If points are on high side of calibrator input use 4b below.
- 4
 - a) Loosen gang side of arm. Open gang very slightly. Tighten gang side of arm. Loosen drive side of arm. Close gang. Tighten drive side of arm.
 - b) Loosen drive side of arm. Open gang very slightly. Tighten drive side of arm. Loosen gang side of arm. Close gang. Tighten gang side of arm.

Note: The above procedures should be carried out with the tuning control fully anti-clockwise.

- 5 Reset 10 and 20MHz points exactly and repeat from 3 onwards.

Received via the Internet - [eddystone @ nomis.co.uk](mailto:eddystone@nomis.co.uk)

"To Graeme and Ted

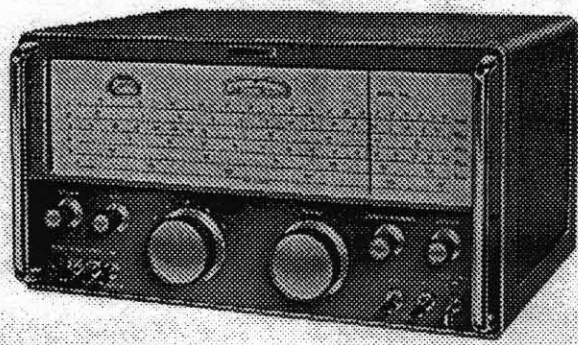
The generosity of EUG members has come out tops.

You will recall that in the 'Wanted' column of the February 1999 Newsletter I advertised for some parts missing from my much modified 640. Well, thanks to the generosity of members in Daventry and Auckland, I have received the needed parts.

The 640 had practically a full rebuild, which took a couple of month's spare time. It is now "original" and much more like the tidily wired set that left the factory. An added satisfaction about the job was that the 640 worked properly at first switching on! The first station I heard was the good old BBC.

Thanks to fellow EUGers I now have a good 640. Thanks fellows.

Peter Lankshear - New Zealand - [peemel @ clear.net.nz](mailto:peemel@clear.net.nz)



MY RESTORATION OF
A NEGLECTED 940
Or
'Don't look a gift horse in the mouth'
by
Jeff King
ZL3TNV

The arrival...

I came into possession of the 940 through a friend who had bought it from a clearing out sale of a Government department. It had sat for several years in his garage-based workshop, gathering dust and moisture. The mains transformer had been removed, but I was given it with the receiver. Externally, the receiver looked in good condition.

On performing a simple off-load test, and measuring winding resistance, it was ascertained that the transformer had shorted turns problems. I opted to have a new transformer wound, as the cost of a re-wind for the original was prohibitive.

With a general clean up of the receiver, the new transformer installed, and the main power electrolytics replaced (originals down to half capacity), the receiver crept into life. Band 5 was dead, and band 1 had a strong spurious signal causing false AGC activation and receiver de-sensing. Also after about 15 minutes, the sensitivity on all bands slowly dropped off, along with the S meter indication, which went backwards and could not be coaxed above zero with the zero-set pot. Longer tests also showed an intermittent but drastic (200uV) drop in sensitivity was also occurring for short periods. All this made me wonder what I was letting myself in for!

The dreaded RED HUNT strikes again...

Upon later measuring the passive components, it was found that a large proportion of the resistors were well outside tolerance, R6 and R14 being the worst at +400%. All carbon resistors were subsequently replaced, along with the red "Hunts" capacitors and misc. electrolytics in the RF and IF/audio sections. The replacement was not always an easy task, especially in the RF module, where the 2 band-change wafers and adjacent coils had to be temporarily removed above V1, in order to allow soldering iron (and pliers) access.

With the components changed, the receiver was much more lively.... The slowly sagging sensitivity and S meter problem was now fixed, and with subsequent replacement of the mixer valve, the band 1 instability problem was gone. The death of Band 5 was traced to the feedback winding (connecting to S1g) of local oscillator coil L20 which was open circuit, preventing oscillation. This solidly epoxied winding was filed (very carefully) off, and a new coil wound on. The (guessed) amount of initial coil turns was subsequently adjusted (before gluing) to give the correct mixer input injection voltage. The intermittent sensitivity loss fault was eventually traced to a faulty C70 inside T2. This was the most frustrating fault to locate and fix, as it was not evident for long periods, and would usually restore itself before any serious measurements could be made.

The last fault to remedy was that all the IF slugs were very loose in their threaded formers, which made accurate setting of the slugs difficult. I decided that wax or lock-tite was not an option, but with a return trip to the bathroom cupboard, all slugs were removed and 4 lengths of waxed dental floss were placed down the inside of each of the formers. When the slugs were replaced back, the result was very smooth (but tight-ish) fitting slug travel - excellent.

With all obvious faults fixed, and the receiver now in a stable operating condition, measurement of static DC voltages showed all were within 10 - 15% of spec. A full alignment of IF and RF sections was conducted per the manual. Signal injection measurements showed that stage (and front-end) sensitivities were mostly better than original spec, and (thank God) stayed constant after many hours of monitored soak testing.

Subsequent on-air use showed the true magnificence of the Eddystone design, being a very satisfying gift for the many (sometimes grueling) hours of refurbishing work undertaken.

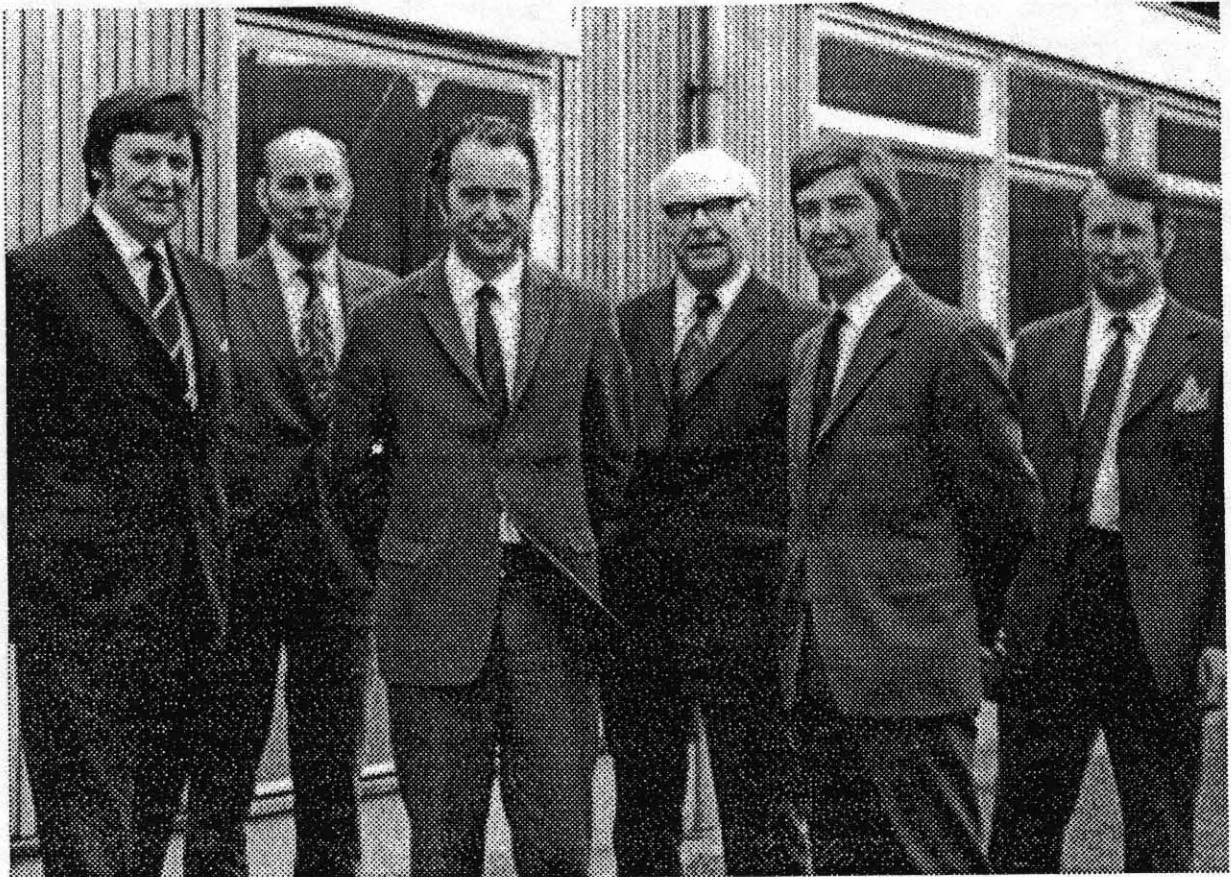
Jeff King ZL3TNV

DON'T FORGET THE NEW CONTACT FOR EDDYSTONE HANDBOOKS AND SPARE PARTS

Now that Christine has retired from being the Archivist at the Factory EUGer Dave Simmons has taken over her stock of historical documents and back numbers of the Newsletter. He has also acquired the stock of vintage Eddystone parts from Howard Turner at Centre Electronics (B'ham). Contact Dave for a quote on anything you need, hardware or paperwork.

**Windana House
North Aston
Bicester
Oxon OX6 4HX**

Tel: 01869 347504 E-mail: eddyspare@onet.co.uk.



THE EDDYSTONE MANAGEMENT TEAM IN THE 'SEVENTIES
*Left to Right: Jack Stanley, Accountant; Ken Wilkins, Sales Manager;
Dick Carroll, Managing Director; Bill Cooke, Chief Engineer;
Dave Travess, Works Manager and Ken Mills, Personnel Officer.*

THE COOKE REPORT

Episode Nine

Bill Cooke, now GW0ION, worked for more than fifty years under the Eddystone banner, from 1935 to 1986. First as part of Stratton & Co, then as a division of Marconi Communications (from 1965). For most of that time he was the Company's Chief Engineer.

His experience stretched from the 'All World Two' short wave listeners' set to the 'Model 1650' microprocessor controlled LF/HF professional spycatcher. For the past 18 months he has been recalling for us some of his life and times with the 'Rolls Royce' of radio. In this, the final episode of his Report, Bill describes how the Company met the challenge of changing times.

THE TEAM AT EDDYSTONE RADIO



Eddystone's skilled workforce of 250 in the 'seventies.

GOODBYE TO THE THERMIONIC VALVE . . .

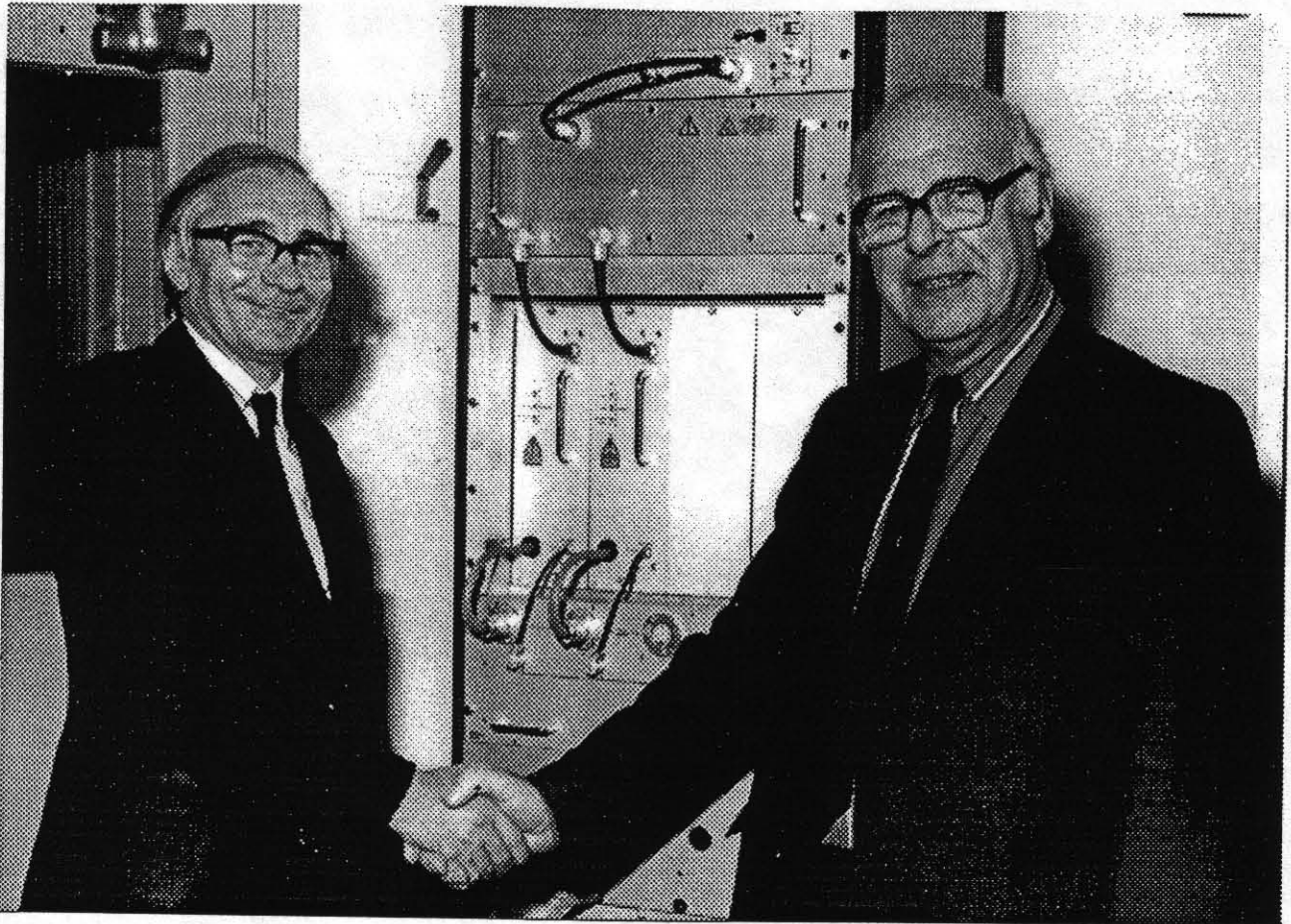
"By the early nineteen-seventies all our receivers were solid state. Our last valved set, the 830-series, had been discontinued in 1973; not because of falling demand but due to increasing lack of suitable components. We were producing a wide range of receivers covering the spectrum from 10 KHz to almost 1 GHz, and for users varying from broadcast listeners to GCHQ.

"But the writing was on the wall. Already supertankers and giant containerships were beginning to dominate the world's merchant navies. The demand for professional receivers was falling. The Swedish mercantile service was using satellite control of its fleet (the first in the world to do so). Orders from GCHQ and the Diplomatic Wireless Service were slowing down. Cheap products from the Far East were challenging the domestic market. It was time to review our future.

THEY ALWAYS NEED BOXES . . .

"The Eddystone die-cast box business had been a reliable 'low tech' earner for many decades. It had developed from the need to tropicalise our early shortwave export receivers. By 1931 it was a well-established technique and we were world leaders.

"In the 'seventies we re-tooled and brought out a new range, including waterproof and plastic boxes. They were very successful and continue to be so today.



1979/80 EDDYSTONE ENTER THE BROADCAST BUSINESS

*Gordon Parker (Head of Design, B.B.C.) shakes on it
with Bill Cooke (Managing Director, Eddystone Radio).*

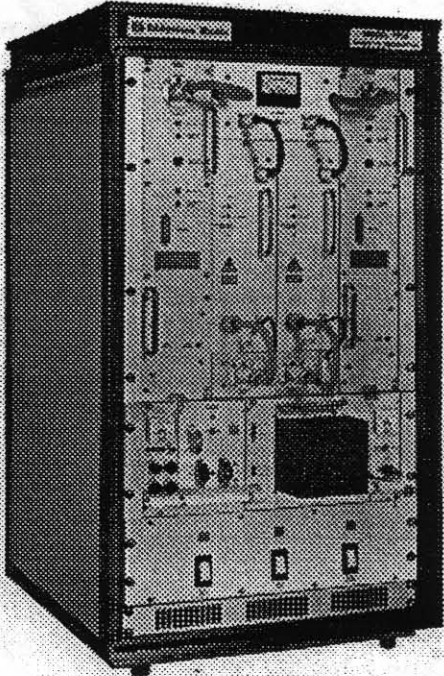
The die-cast box business was sold to the Canadian company Hammond last year, who still market them world-wide as 'Eddystone'. I keep in regular touch with them.

WE JOIN UP WITH AUNTY . . .

"Back to the 'seventies. For many years we had enjoyed a good business relationship with the B.B.C., both through its monitoring services at Tatsfield and Caversham, and through developing receivers for the 'walking mike'. One day I was invited, along with Ken Wilkins, our Sales Manager, to a meeting at Broadcasting House (BH as those involved call it). I waited patiently, munching my way through endless sausages on sticks, while Ken followed his usual technique of making as many contacts as possible, naturally picking out the important ones.

" Finally we came to the business. It seemed the B.B.C. research and development department had designed an F.M. stereo transmitter, running a few hundred watts, up to a kilowatt. The sort needed by the hundred to fill all the black-spots in the Welsh valleys, the Highlands and the Islands.

"They had approached Marconi's, who had been making transmitters for them since 2LO. Marconi's declined to accept the proposal so the Beeb had come to us. A little embarrassing; remember that by this time Marconi's (G.E.C.) had owned Eddystone



THE B.B.C. DESIGNED AN FM STEREO TRANSMITTER WHICH WAS BUILT BY EDDYSTONE AND LICENCED FOR WORLD-WIDE SALE. MODEL 1706 SHOWN HERE HAS AN OUTPUT OF 1000 WATTS.

It is completely solid state with broadband RF power amplifier. Built to meet high standards of performance and reliability at an economical price, it is just over one metre high (40") and weighs in at 210 kilos (470 lbs). Available in Stereo, Mono and RBR versions.

for more than a decade! However, the idea appealed to us very much. In fact, you could almost say it was the break we had been waiting for. Handed to us on a plate. Gift wrapped, even!

BUT WERE SOME FACES RED . . .

"We reported to our owners at Chelmsford who poured cold water on it at once. The reason they'd turned down the B.B.C. was that they had just about finished their OWN design, which would be much more profitable (they thought). Another month and it would be ready.

"After six weeks I made polite enquiries and went to inspect the final product. It looked very smart. But there was nothing inside it; it was just a mock-up! A lot of explaining had to be done at Marconi's and I went back to the B.B.C. with a proposition. We'd make the transmitters if they'd license us for world-wide sales. Done!

NORMAL SERVICE WILL BE RESUMED . . .

"It would be nice to say that we all lived happily ever after; but there was one snag. The Beeb's power supply unit proved to be very unreliable. It used transistors capable of standing 100-volt peaks in a circuit which could produce 170-volt spikes. Not exactly the stuff of reliability. We sorted it out in the end, but they had to pay; the power supply was eventually redesigned.

"It was during this period that we formed a close association with the department of technology at Aston University (one of Birmingham's newer seats of learning). Students worked with our design department and eventually several of them became valuable members of staff.

JUST A LITTLE SLIP . . .

"We had been manufacturing a range of panoramic adaptors since the valve era, and continued with solid state versions. These were devices which, in association with the appropriate receiver, displayed a received signal (including its sidebands) on a cathode ray tube. A specialised form of oscilloscope, in fact. One day we received a report from Salford Electrical who were manufacturers of Quartz Crystals. We were one of their biggest customers. Using the panoramic adaptors together with our receivers they could assure us of first class filter and oscillator crystals.

"Anyway, this report revealed that they had problems with a new instrument which we had just supplied. The scanning line on the tube was tilted and couldn't be adjusted. I went to visit the unfortunate company as we had such a close relationship. (We were, of course, both subsidiaries of G.E.C.) On seeing the 'fault' I removed the cover from the unit, grasped the C.R.T. and twisted it back

OPEN DAY AT THE BATH TUB



Bill shows off the 990R solid state VHF receiver to friends and family at Open Day in the West Heath factory

to its correct register. For some reason which is difficult to explain I acquired the instant reputation of a magician. I was as embarrassed as they were!

"I hope you've all enjoyed reading these memories as much as I've enjoyed writing them. I also realise that a full version of them would run to several hundred pages and the time has now come to wind down! But I hope I've been able to pass on to members some of the atmosphere of Eddystone Radio in its heyday."

THANK YOU, BILL, for a fascinating glimpse through the windows of Bromsgrove Street before the war and the Bath Tub after it. The E.U.G. has indeed been privileged to share them. We shall keep in touch and be grateful for any little gems you may recall.



FEATURED MODEL

"THE SET WITH NO NAME"

By

Graeme Wormald G3GGL

The Mother of Invention...

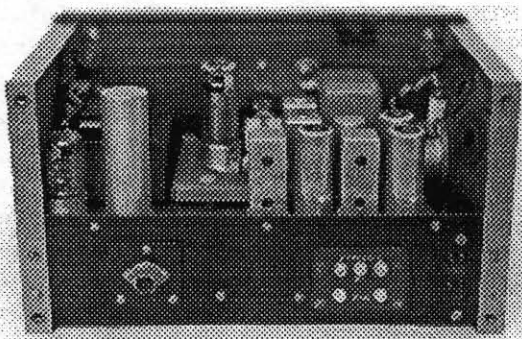
When the Royal Air Force started to carry the first Empire AirMails in the 1920's they had few navigational aids and even fewer sources of meteorological information. Flying the desert route from Cairo to Baghdad was like playing blind man's buff. A good side-wind could blow a plane hundreds of miles offcourse in this featureless terrain.

The answer to the problem was ingenious in its simplicity. An aircraft tractor was hitched to a plough and a furrow cut through six hundred miles of desert. This worked fine as long as the pilot could see it...or until the next sandstorm blew it away.

The Met Man comes into his own...

The study of weather patterns had been a rather academic affair before the First World War. After 1920 the rapid increase of civil aviation prompted it to become a growth industry. The strength and direction of winds was of paramount importance to the aviator.

By the late thirties, technology had advanced to the point where unmanned weather balloons carried small radio transmitters, which gave details of temperature, pressure and humidity by means of varying tones. The balloons were tracked by D/F, thus giving wind speed and direction. It was called 'Radiosonde'.

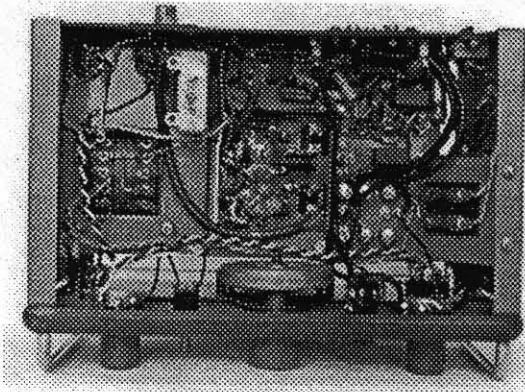


At the outbreak of war these balloons were grounded for fear of giving Göring's Luftwaffe free information. But in 1945 they flew again and that's where we start to get to the point.

Left - Rear view of set - notice similarity to 870 series.

Eddystone gets in on the act...

Radiosonde transmitters used the 27MHz 'Cinderella' band - so called because nobody else really wanted it. They shared it with radio control model buffs (and CB later on). Most general coverage communications receivers would tune to it, as would the Eddystone 770R VHF model, which started tuning at 19MHz. But such sets were expensive, one or two hundred pounds at a time when you could get ten gallons of petrol for only a pound.

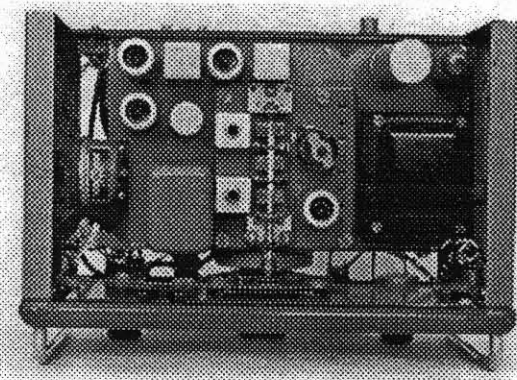


The team at Strattons was always ready to latch on to a niche market and Radiosonde was no exception. The Model 870 compact cabin receiver was launched in 1956. The case and chassis made a perfect basis for further experiment and one result was our Featured Model.

Left - Underside of Radiosonde

It was a mono-band AM only set tuning 27.0 to 28.8MHz (I wonder why it covered a slice of the ten-metre ham band?). It used minimal controls: LF gain, RF gain and tuning. Unlike the 870 it was AC only and had an RF stage. The valve line up was:

6BA6(RF) - ECH81(FC) - 6BA6(IF) - 6AT6(DET) - EF91(O/P) - EZ41(RECT)



There was one prototype in the Eddystone collection, the waif and stray of the family. No labels except for the headline 'Eddystone', no type number, no serial number, no anything. Just a slip of paper pushed under the chassis with the words 'Radio Sonde' pencilled on it.

Left - Top View of Receiver

Why did such a little beauty fail? Well, if you were a Civil Servant responsible for setting a up a Radiosonde station what would you specify? A 680X or a 770R of course! The bigger the set the bigger the empire... ●

RADIO RAMBLINGS

Gottings from my Notebook



By

Graeme Wormald

G3GGL

MOST SECRET WAR . . .

Members will recall that in Newsletter #50 I saluted the life of Professor R V Jones, the Air Ministry scientist who, at the age of 29, won the 'Battle of the Beams' in the 1940 Blitzkrieg, and was involved in many more wartime boffins' adventures. In 1978 he published his account of British Scientific Intelligence between 1939 and 1949, entitled 'Most Secret War'.

BACK IN PRINT . . .

It graced my library for many years until it went walkabout. But good news! It's back in print and I already have my new copy. A book of spellbinding attraction for those with enquiring minds, it's re-published by 'Wordsworth Editions Limited' in their Military Library series. Containing 556 pages it sells at the remarkably reasonable price of £4.95. I ordered it in my little local bookshop and it arrived the next day. (ISBN 1 85326 699 X). Highly recommended.

CAN IT REALLY BE . . .? YES IT IS!

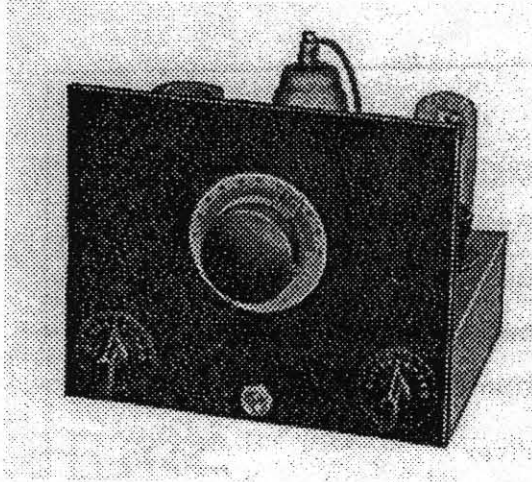
Do you ever watch the 'Antiques Road Show' and smile when the hero finally comes out with: "Actually I paid 50 pence for it at a jumble sale."? For what? you may say. Well, for anything really, does it matter . . . It made the final of the programme, didn't it?

I've always tended to take a sharp intake of breath when our members report exotic finds, like the brand new (?) 358 complete with coils for a fiver. The 730/4 found crated in a municipal storeroom . . . The IMR 54 which everybody except me saw at Dunstable!

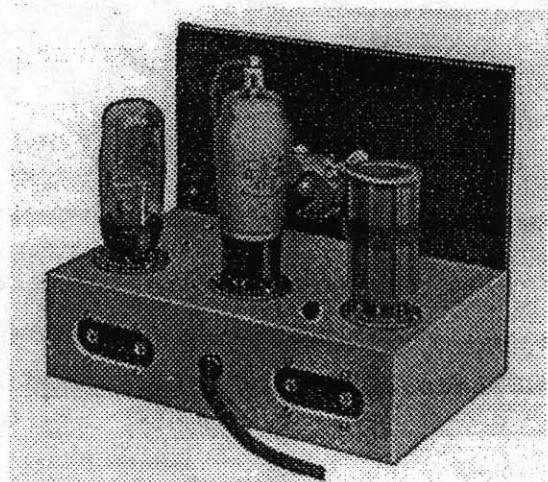
Regular readers will know I frequently exort them to keep their eyes open in bric-a-brac shops and at car boot sales. Well, *last month it happened to me!* At a car boot sale which attracts 'dealer-collectors' from all over the West Midlands, I saw the 'All World Two' at the back of a table. It sat amidst a load of house-clearance stuff: poker-work pipe rack; art-deco tea-set; fretwork firescreen. The usual sort of stuff from the 'thirties, not worth a second glance. Unless, of course, you are a collector of pipe-racks, art-deco, or Eddystones . . .

The stall-holder had no idea what it was. A peep into the lift-up lid revealed two valves and a coil. Lots of cobwebs but no rust or green spot. I crossed his palm with silver and raced home. Did it work? No!

The detector had a continuous filament but no emission. I phoned Jim Fish (Wilson Valves - 01484 654650) and a brand new (1936) Mullard SP2 was with me the next



The set has a smart Front appearance---



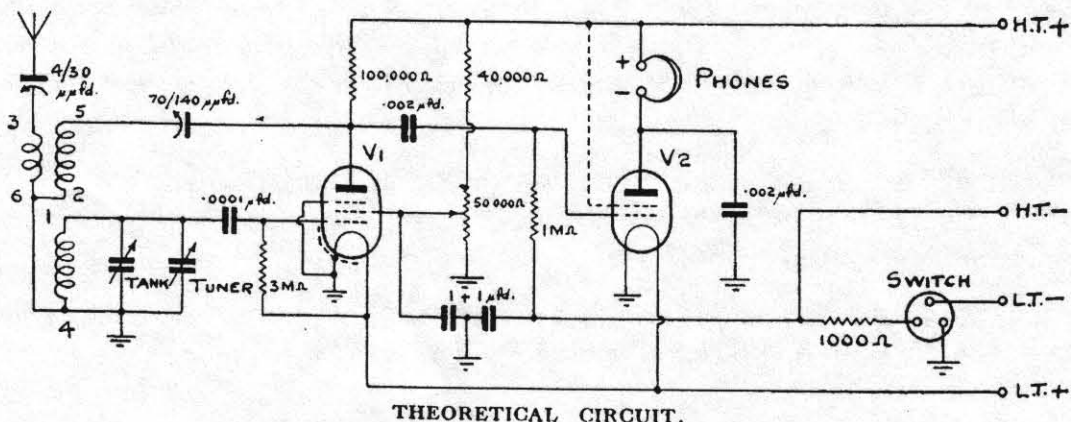
---and a tidy, attractive chassis layout.

day. In the meantime I stripped the panel and applied Kiwi Dark Tan shoe polish to the rather shabby 'brown crystalline' finish of the cabinet and panel. The result was remarkable; nearly new. I extracted the 'one plus one muff' Mansbridge condenser which was showing signs of oil leakage.

I was working out how to open it invisibly and replace the innards. Surprise was genuine when I applied the condenser zapper and found no leakage, and a capacity of 0.9 mfd each half. A non-original looking carbon track reaction control was exchanged for wire-wound (on principle!). Then it was powered up again . . . Life!

An erratic start was tracked down to a dry joint on the aerial trimmer. Then it started to perform. Briefly, these are my comments: Compared with its big brother, the Amateurs' Short Wave Two of 1938 (mains valves), it is less punchy in the audio department. Definitely a headphone job. The pre-set aerial trimmer and reaction controls only hold good for part of the spectrum of the nine available Eddystone coils. Say for three adjacent ranges at best. (Remember the set was originally sold with two coils.) I set it up for the 'middle ranges' around 2-10 mc/s. Above and below these frequencies the screwdriver is needed; this is a bit boring as the aerial trimmer is under the chassis and the case has to come off.

continued . . .



Having said all that it is an excellent performer on the 40 and 80 meter ham-bands (and the 41, 49, and 75 meter broadcast bands). Reaction is velvet-smooth, bandwidth is just right, and Morse is readable down to about 1 microvolt. SSB is rock-steady.

It's a sobering thought that this little set was the back-bone of the Voluntary Intercept service in the early years of World War Two, monitoring Hitler's hoards as they swept across Europe. By a remarkable coincidence the June/July 1999 Edition of 'Radio Bygones' features the set in an excellent article by Tony Harwood G4HHZ (not a member, otherwise he would know that his front panel was a bit bogus!).

Megahertz Communications Build 4 wheel drive production truck for Namibia Broadcasting Corporation

Cambridge, England 1/9/98

Cambridge-based Broadcast Systems Integrators, Megahertz Communications Ltd, have secured the contract to build a 3 Camera Production Truck for the Namibian Broadcasting Corporation.

The truck is to be used primarily for the production of educational programs by the Namibia broadcaster, and as such, has been financed by the European Development Fund.

In order to cope with the arduous road and environmental conditions prevalent in Namibia, a 4 x 4 wheel drive Mercedes 7 metre chassis is to be equipped with a custom body constructed entirely in-house by the companies own coachbuilding facility. The contract also includes a 20 kVA diesel generator mounted on a heavy duty trailer.

The truck is equipped with 3 Philips DVS LDK100 cameras equipped with Triax adaptors, while Philips DVS AJ750 DVCPRO recording VTRs are used throughout the vehicle. Production facilities include a Philips DD10 and a Soundcraft 16 channel Audio Mixer.

This represents another significant contract won through the newly formed international sales arm of the Megahertz Group, Megahertz International. Dave MacArthur, Sales Director for Megahertz International said that the contract represented a significant breakthrough for the company in the African market. Of particular importance to the customer was the long-term reliability of the vehicle and equipment. The unique ability of Megahertz to provide a complete solution, from the entire coachbuilding operation and technical design, through to operator training, was a key factor in winning the contract. Also of importance was companies unbiased specification of equipment, reflecting the companies independent nature and commitment to providing the most appropriate solution.

Megahertz were assisted in the contract by their Namibian agents, Heltronix Ltd, who contributed to both contract and technical discussions throughout negotiations.

Several members have enquired about the core business of Eddystone Radio's new owner, Megahertz Communications Ltd (see page 12 of this letter). So each month I will print one of their Press Releases so that members may see the nature of their operation. It would seem to me to be not too far removed from the orbit into which Eddystone has moved in recent decades. Those of you seeking more up-to-date information might like to visit the website on <http://www.megahertz.co.uk>

Well, now; after all that excitement what else has been happening lately?

CALLING ALL 888A OWNERS . . .

One of our members recently acquired an 888A from a nationally advertised source. It had been quite nicely restored but it only worked properly on AM. CW and SSB were hopeless. Which meant that apart from the broadcast stations occupying what used to be Europe's best HF band (40 metres - one of my pet moans), there wasn't much to listen to. When SSB/CW was selected it sounded like feeding time in the bird-house. The more you adjusted the BFO the worse it got! It was brought to me for further investigation.

A BIT OF HISTORY...

The Eddystone 'Triple 8' was introduced around 1956, based on the successful model 750 and was the Company's first ham-bands only set. It was intended for AM and CW, although SSB was starting to emerge as a new DX mode. The following year the model was modified (hence 888A) to incorporate a product detector in place of the original BFO. Instead of using the AM diode detector as a 'mixer' for the BFO (for CW), a pentagrid mixer/oscillator was used as the detector for CW and SSB; a much improved arrangement.

Now most (if not all) Eddystone 'slide-rule' sets have the BFO valve mounted on top of the BFO coil-can, which is good electrical design but makes for difficult servicing. In the case of the 888A the situation is aggravated by doubling the component count inside the can compared with the original 888.

DOWN TO BASICS...

First of all the valve (V9, 6BE6) was removed and the DC continuities checked with the AVO. Everything within 20%, which is good for 40 years old. Then the valve was replaced, the set warmed up, and the 'scope switched on. The trace at the BFO condenser was nice and pure. The knob was turned and the strangest thing happened: another trace appeared. The valve was oscillating at two different frequencies! Oh-Oh. No wonder it sounded like a bird-house.

There was nothing for it but to dismantle the BFO and examine the works. The task seems formidable but, when tackled systematically, becomes easy. Sketch the wires going to the tags coming from the BFO can. Unsolder them (easy) and take out the screws. The assembly may be lifted out and the can removed. All is revealed. In this case two conventional LEMCO type silver micas (C92 & C93) and four strange types which looked like rats' droppings with wires attached. They were about 1/2" long, dark brown with no markings other than colour code rings (using standard resistor colours in picofarads). These were two RF filters in the output (anode) circuit, C113 & 114, 500pf each; a screen decoupler, C95 (.01mfd), and an output coupling condenser C115 (.005mfd).

EASY DOES IT...

One leg of each was carefully unsoldered and the value checked on my newly constructed direct-reading condenser meter. (The BARTG version - worth its weight in Gold; I don't know why I didn't make one years ago). THEY WERE ALL OPEN CIRCUIT except the two micas. All were replaced and the BFO re-fitted. (cont . . .)

Perfect. All circuits were then re-aligned. First-class performance. So beware, all 888A owners, any or all of these ratty condensers in the product detector could be open circuit.

FACTORY CLEARANCE MODELS . . .

Readers will recall that in a recent Newsletter I explained how strange prefixes (DEV; DD; or PP) in front of a serial number (allways very low) meant that the set was not a commercial model, but some form of pre-production or development set. They were never sold to the public but raffled off to employees for charity or sold to them for a nominal sum. Say a fiver.

A model EA12, the ham bands model of the '60s was recently brought to me for the 'once over'. It was more or less working but the biggest complaint was lack of sensitivity on the two top ranges; ten and fifteen metres. As I always do with a 'new' Eddystone I looked at the serial to check its date. It had the serial number 0004 with the prefix 'PP' and a date code eighteen months before the set was put on the market! The owner was unaware of its uniqueness. It did show signs of a lot of work having been done under the chassis. Whether this was during development at the factory or at the hands of a later meddler there is no way of knowing.

After a general check-up and replacement of one or two items the set was re-aligned in the normal manner. All was well until band 5 (fifteen metres) was tackled. The mixer grid coil had a broken-off dust core. When this was replaced with a whole one it was impossible to peak. Replacing the broken (half) core recovered a peak. The rest of the RF stages wouldn't peak on this band nor would any of the ten metre RF coils.

At this point I consulted Bill Cooke, Chief Engineer at Eddystone when the EA12 was developed. I asked him if it was likely that the set would be left with two dud bands on it. 'Oh, yes' said Bill, 'and the presence of the broken core proves it. They had worked on the set so much that it wasn't worth re-winding the out-of-tolerance coils. They just sold it to one of the lads and started on another one.'

Really! The set had by now found its way to Scotland. But please take note: more and more of these 'mis-shapes' are likely to be finding their way onto the market due to silent key sales. Do check every new model you intend to buy. If it has a prototype number be aware that it's not likely to be up to production standards. If you want it purely as a (relatively) unique collectors' item, that's fine. But if you want to use it on air, as many do, don't pay the going rate and be disappointed.

'EDDYSTONE SPECIFIED . . . '

This month's offering is a rather attractive little number taken from ESWM No 4 of circa 1938. It's a complete amateur station in miniature, and if anybody's looking for a winter project it's one of the easier ones, assuming that construction doesn't follow the instructions too slavishly. The wooden table-top rack assembly is only 22" high and a doddle to replicate. There are no impossible-to-get cabinets involved. Interesting, too, to note that the Rx is a perfect mains-valve copy of the A.W.2

One final word; I shall be away for most of September, don't worry if the next issue is a little late. It WILL arrive, trust me!

GRAEME - G3GGL

"EDDYSTONE SPECIFIED"

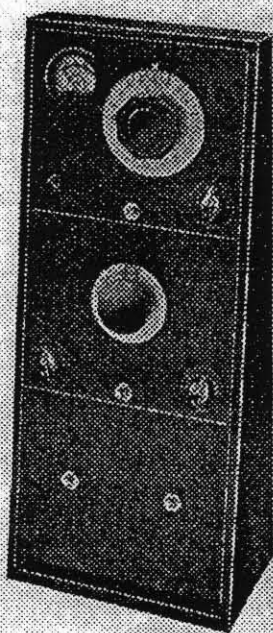
*A Series of Articles featuring Constructional Projects
In which the use of Eddystone Components is specified.*

8

EDDYSTONE SHORT WAVE MANUAL

A MINIATURE AMATEUR STATION

FOR 10 TO 20 WATTS OUTPUT ON 7 AND 14 Mc/s.

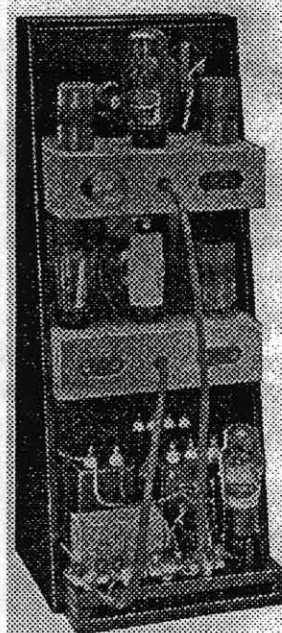


Showing neat front layout.

Here is a complete Amateur experimental station in miniature form for the beginner. It is easy to construct at a cost quite modest for a station designed to a professional layout and built in the conventional rack form of a high power transmitter. The finished job presents an efficient and workmanlike appearance and is worthy of a place in any Amateur station.

With this small scale equipment good two-way communication with other Amateurs in all parts of the World is possible. It also offers full scope for tests in low power transmission, an extremely interesting field of experiment for the beginner and expert alike.

It is ideal for construction by the beginner because even when the time comes for a more advanced station to be built this miniature outfit continues to be useful as it is an excellent medium for "home" contacts. For this purpose the use of high power, quite apart from the interference it causes, is often-times an unnecessary waste of current. Again, the flexibility and performance of both transmitter and receiver make them a valuable "stand-by" in case of breakdown on the part of the higher powered equipment.



Showing the back view.

The miniature station consists of three separate units which are mounted into a simple wooden rack construction. There is the power supply which provides current for operating both Transmitter and Receiver. The Receiver, which is the well-proven Eddystone "All-World Two" modified for all mains A.C. operation. The Transmitter, which is a single valve crystal controlled Unit working on 40 or 20 metres. The valve used is an Osram KT.66, which is the British equivalent of the American 6L6. The change of wavebands on Receiver and Transmitter is the work of a few seconds so that quick and easy operation is obtained.

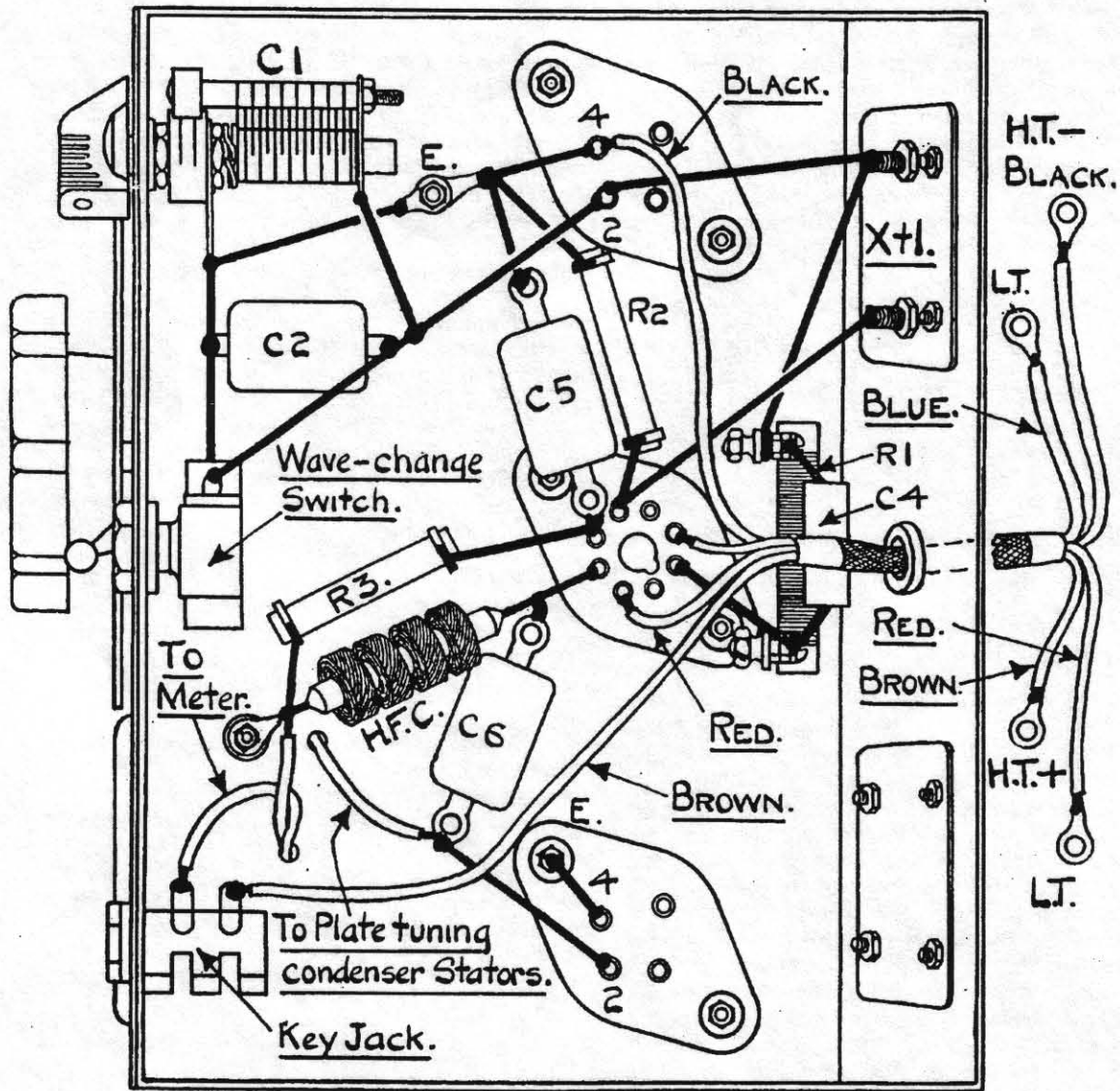
The Rack assembly can be built quite cheaply and makes a compact and presentable unit measuring approximately 9" wide, 22½" high, 8½" deep. A constructional sketch is shown on page 12, but any alternative form of mounting such as steel channel iron could be adapted if preferred.

THE TRANSMITTER SECTION.

The circuit of the Transmitter functions as a Tritet for 20 metres and a straight-through crystal oscillator on 40 metres. The panel layout shows in the centre an instrument type dial for tuning plate circuit with the Tritet cathode tuning condenser below on the right-hand side. The switch when in the right-hand position, short-circuits the Cathode coil for 40 metre working, and when moved to the left-hand side it opens the cathode coil circuit so that the Transmitter can be operated on 20 metres. The keying jack is on the left-hand side of the panel immediately below the anode current milliammeter. The coil holder behind this meter accommodates the 4-pin Yellow spot tank coil for 20 metre operation and the 4-pin Red spot tank coil for 40 metres use. The cathode coil for 20 metres is a 4 pin Yellow Spot from which two turns must be removed from the top of the large winding. This arrangement ensures greater C/L ratio in the cathode circuit which gives a larger harmonic output in the anode circuit.

A MINIATURE AMATEUR STATION,

UNDER CHASSIS WIRING AND LAY-OUT TRANSMITTER SECTION.



EDDYSTONE COMPONENTS.

	Price
1 Diecast Aluminium Chassis with terminal panels No. 1117	5/6
1 Metal panel, black ripple finish, No. 1118	1/9
2 Frequentite Valveholder 4-pin, No. 1073 at 9d. each	1/6
1 Frequentite Valveholder Octal, No. 1120	1/3
1 Precision Dial 4", No. 1098	4/6
1 Pointer Knob and Dial, No. 1044	1/-
2 Microdensors 60 mmfd C1 and C3, No. 1093 at 4/6 each	9/-
1 S.W. H.F. Choke, No. 1022	3/-
1 Insulating Pillar, 1 1/2", No. 1029	4 1/2d.
2 Four-pin Coils, type Y, No. 932 at 2/9 each	5/6
1 Four-pin Coil, type R, No. 932	2/9

MISCELLANEOUS PARTS.

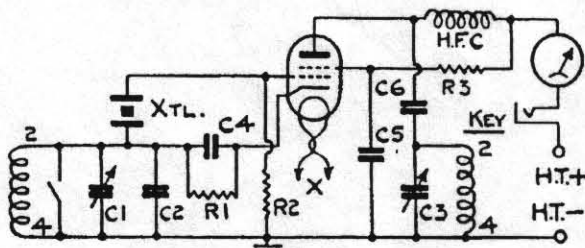
1 Two-point on/off Switch	..	..
1 Jack (Igranic Type P.71)	..	..
1 Plug (Igranic Type P.40)	..	..
1 Fixed Condenser .0001 mfd. C2	..	..
2 Fixed Condensers .001 mfd. C5, C6	..	..
1 Fixed Condenser .01 mfd. C4	..	..
1 Resistor 20,000 ohms 1 watt	..	..
1 Resistance 500 ohm 10 watt (Webb's Radio)	..	..
1 Resistor 50,000 ohm 1 watt	..	..
1 Moving Iron 0-100 milliammeter (Webb's Radio)	..	..
1 Crystal 7 m/c (7005-7197 mc/s) (Webb's Radio)	..	..
2 Clix Sockets	..	..
Length Four-way Lead	..	..
Wire, Screw, Nuts, Tags and Octal Valve Clip, etc.	..	..

1 Valve, type Osram KT66 or equivalent if required.

Approximate cost of miscellaneous parts £1 15 6

A MINATURE AMATEUR STATION (continued).

The power supply is mounted on a plywood baseboard at the bottom of the rack with a front metal panel carrying the control switches. The Receiver and Transmitter sections are built on a standard Eddystone die-cast chassis with coils, condensers and valves mounted on top, and all small components housed underneath. Not only is the construction rigid but the appearance workman-like and impressive. The assembly is completed by neat crystalline finished metal front panels which accommodate the tuning dials and associated controls.



Theoretical Circuit. Transmitter Section.

THE RECEIVER SECTION.

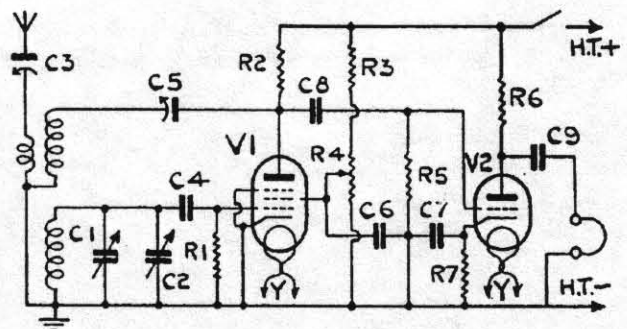
The receiver is equally suitable for amateur band reception or shortwave broadcast since it is fitted with the special Eddystone bandspread tuning unit which allows continuous bandspreading on all wavelengths. The band required is selected by the tank or band-set condenser which is a small air dielectric unit having a capacity of 140 mfd divided into 10 equal steps of 14 mfd — by a patented stop device. Bandspreading is obtained with a Vernier condenser slightly larger in tuning range than the capacity difference between the tank condenser steps. By this means each 14 mfd. section of the tank condenser is spread over the full 180° of the Vernier Condenser scale. Tuning is thus easy with signals well spread out and well apart from each other on the scale. This arrangement has an important advantage over the usual method of bandspreading as the patented stop device in the tank condenser permits its continued re-setting at the same point.

Thus once the receiver is correctly adjusted the calibration for any given station can be readily found at the same condenser settings. The setting of the aerial trimmer condenser affects the calibrations if altered in capacity. Therefore when once set it should not be further adjusted.

The best setting of the aerial trimmer condenser will be found by experiment. With the condenser set at minimum, the selectivity will be greatest and there will be no places where the Receiver will not oscillate due to aerial load. With the trimmer fully "in" the Receiver will have greater sensitivity although increased aerial load may cause one or two dead spots. Once the most suitable position has been found (usually about two-thirds in) this condenser should be left set and the receiver calibrated. Its further variation will necessitate re-calibration of the tuning settings.

The final control of reaction is obtained by varying the S.G. voltage with a variable potentiometer which is operated from the front panel. There is, however, another component which first needs adjustment. This is a small pre-set trimmer condenser located beneath the chassis at the rear of the reaction control potentiometer. It is set by switching on the receiver and turning the reaction control potentiometer approximately three-quarters clockwise. The pre-set trimmer condenser is then adjusted until the set is just oscillating. It is generally found that the trimmer has to be screwed almost fully clockwise to obtain oscillation. After this setting has been decided, variation of the potentiometer will give sufficient control of reaction.

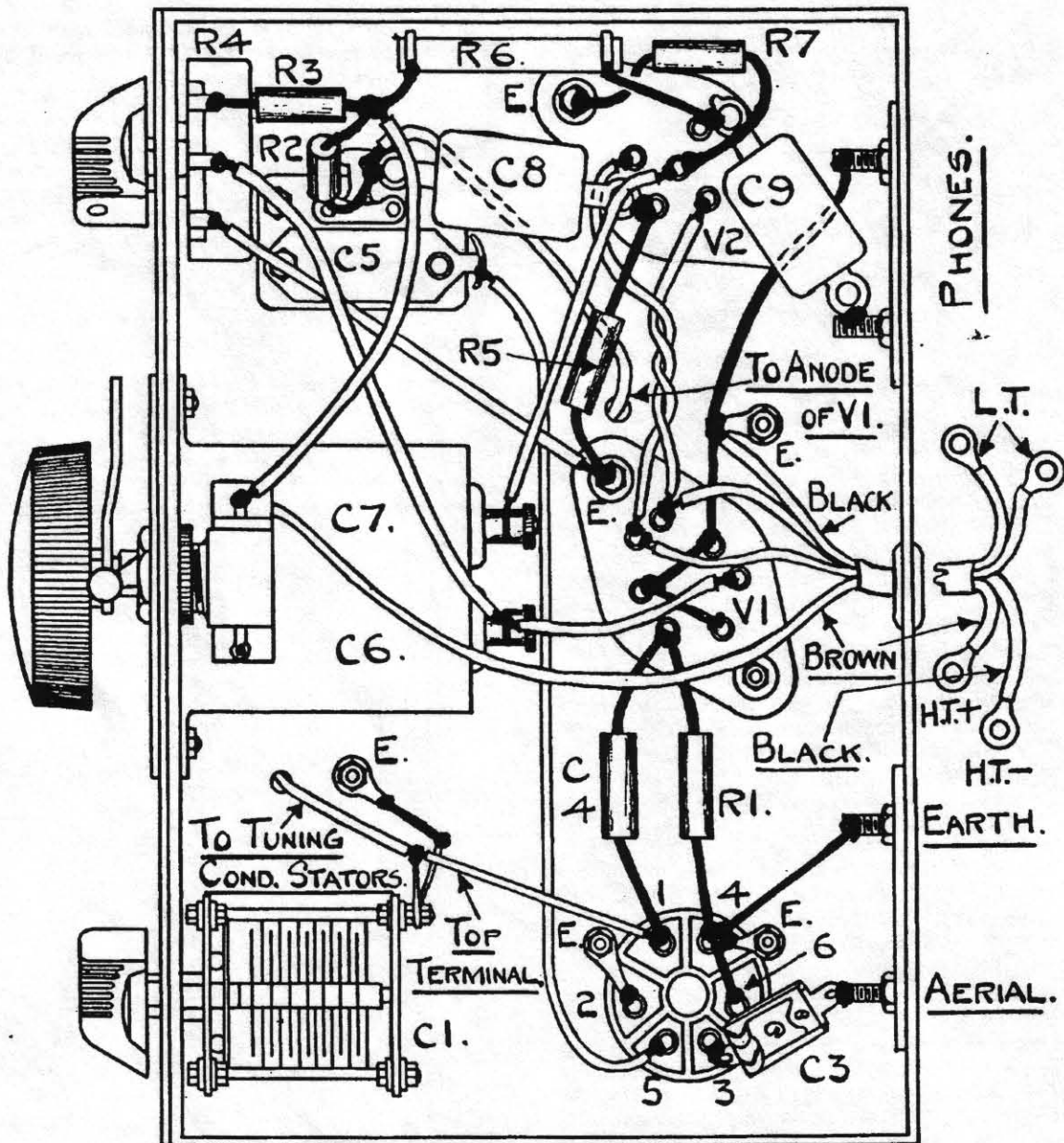
A front view of the panel shows the band-spread tuning dial in the centre with the tank condenser control knob on the left. The reaction potentiometer is on the right-hand side of the panel and the switch is used to break the high tension circuit and render the Receiver inoperative during transmission. The output circuit is isolated by a .002 mfd condenser and thus headphones can be used with complete safety.



Theoretical Circuit. Receiver Section.

A MINIATURE AMATEUR STATION,

UNDER CHASSIS VIEW
RECEIVER SECTION.



EDDYSTONE COMPONENTS.

Component	Price
1 diecast aluminium chassis with terminal panels, No. 1117	5/6
1 Metal Panel, black ripple finish, No. 1118	1/9
1 Tank Unit, C1, No. 1042	6/-
1 Bandsread Unit, C2, No. 1043	6/6
1 Pointer Knob and Dial, No. 1044	1/-
1 6-pin Base, No. 963	1/3
1 Frequentite Valveholder 5-pin, No. 1074	10d.
1 Frequentite Valveholder 7-pin, No. 1075	1/-
1 S.W. Mica Trimmer C3, No. 1023	1/-
1 Condenser 1x1 mfd. C6 and C7, No. 991	4/-
Eddystone 6-pin coils to wave range required No. 959 from each	3/3

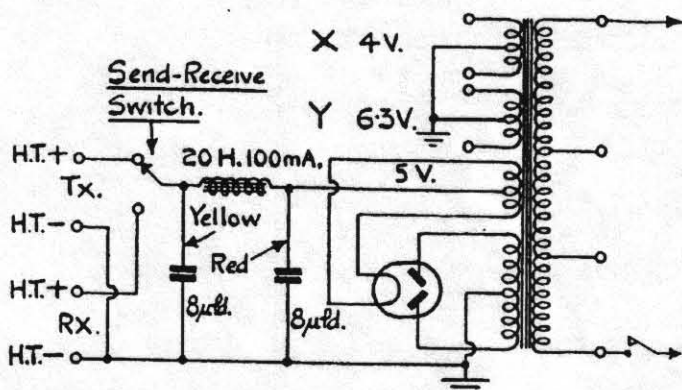
MISCELLANEOUS PARTS.

1 Potentiometer 50,000 ohms R4	..	..	..
1 Capacitor Cyldon 70-140 mmfd. C5	..	..	..
1 Fixed Condenser .0001 mfd. C4	..	..	..
2 .002 mfd. C8 and C9	..	..	..
1 Resistor 1,000 ohm 1 watt, R7	..	..	..
1 10,000 ohm 1 watt, R6	..	..	..
1 40,000 ohm 1 watt, R3	..	..	..
1 100,000 ohm 1 watt, R2	..	..	..
1 1 megohm, R5	..	..	..
1 3 megohm, R1	..	..	..
1 On/Off Switch Two-point	..	..	..
4 Clix Sockets	..	..	..
Assorted 6 B.A. Screws and Nuts, Wire, Tags and Valve Clip, etc.	..	..	..
Length Four-way Lead	..	..	..
Approximate cost of miscellaneous parts	..	..	..

18/9

Mazda Valves, types AC/HL and AC/VPI are required.

A MINATURE AMATEUR STATION (continued).



Theoretical Circuit. Power Supply Section.

OPERATION ON 40 METRES.

With all power switches in the "off" position insert the 7 Mc/s crystal in the sockets at the rear of the chassis. The Red spot plate coil is fitted in the holder immediately behind the milliammeter. A cathode coil is unnecessary on this frequency and the setting of the cathode tuning condenser may be ignored. The centre switch should be in the right-hand position and the keying plug removed until the transmitter is ready for operating. At this point the power is switched on and the centre dial tuned until the circuit is brought into resonance with the crystal frequency. The point of true resonance is indicated by minimum current in the milliammeter. The aerial is then coupled to the plate coil and adjusted for the desired input.

OPERATION ON 20 METRES.

Put power switches in the "off" position, turn centre switch to left-hand side and remove keying plug from socket. Insert Yellow spot cathode coil in corresponding holder and Yellow spot plate coil immediately behind the milliammeter. Switch on and tune cathode circuit condenser to fundamental frequency of the 7 Mc/s crystal, this point again being indicated by minimum current in the meter. Then tune Yellow spot plate coil into resonance which setting is ascertained by a further minimum reading on the milliammeter. Afterwards, aerial load is applied and adjusted for the desired input.

AERIAL.

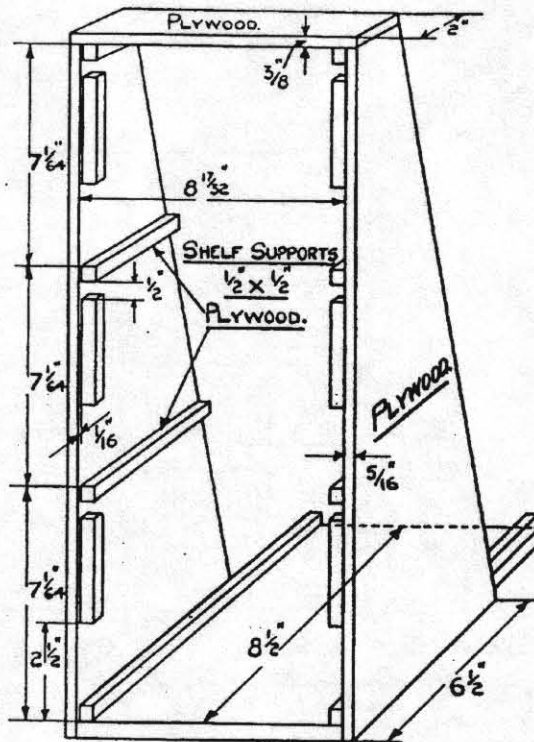
Upon the coupling and tuning of the aerial depends the amount of power dissipated by the valve. This coupling should be varied to draw sufficient current consistent with the characteristic of the valve used. As transmitting aeriels are usually a question of personal taste no special provision has been made but a tuned link coupling is suggested as being the most suitable for general efficiency on the bands covered by the transmitter.

POWER SUPPLY SECTION.

The power unit is at the base of the rack. It is arranged to give sufficient current for an input up to 20 watts on the H.F. stage.

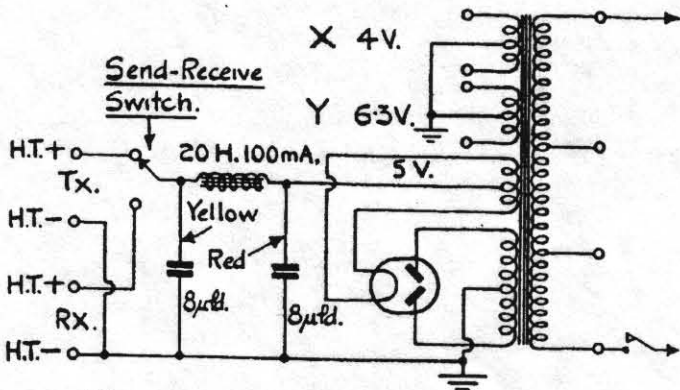
The power supply consists of a 350-0-350 volt 120 m/A Transformer with a 4 volt winding for heating the receiving valves. There is also a 6 volt winding for the transmitter valve heater and a 5 volt winding for the rectifier. A 20 Henry Smoothing Choke is required and should be capable of carrying a current of 100 m/A. The smoothing condenser has a capacity of 8+8 mfd. and is arranged for easy mounting on the base-board.

There are two switches on the front panel. The left-hand switch is the master control for the A.C. mains input and the right-hand one changes high tension from transmitter to receiver. When in its top position high tension is fed to the transmitter and in the bottom position to the receiver.



The above drawing shows the dimensions and construction of the wooden rack for mounting the three units of the station. Wood has been used, since it is easily obtained and worked but an alternative metal construction may be used if desired.

A MINATURE AMATEUR STATION (continued).



Theoretical Circuit. Power Supply Section.

POWER SUPPLY SECTION.

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OPERATION ON 40 METRES.

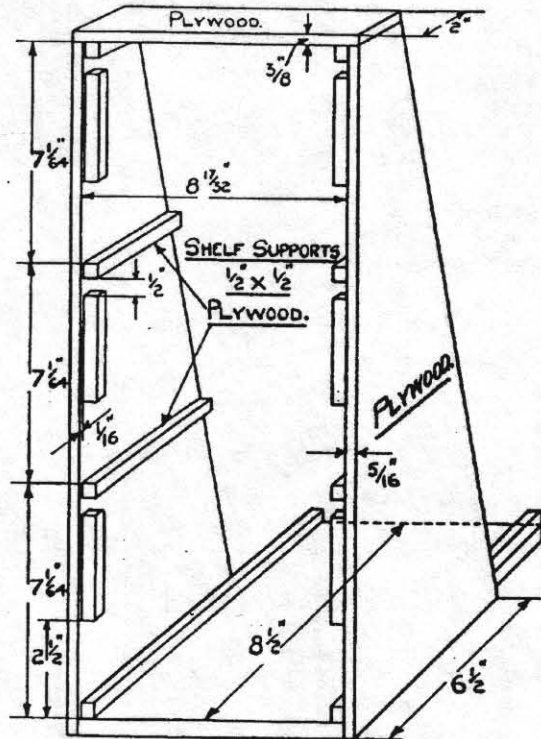
With all power switches in the "off" position insert the 7 Mc/s crystal in the sockets at the rear of the chassis. The Red spot plate coil is fitted in the holder immediately behind the milliammeter. A cathode coil is unnecessary on this frequency and the setting of the cathode tuning condenser may be ignored. The centre switch should be in the right-hand position and the keying plug removed until the transmitter is ready for operating. At this point the power is switched on and the centre dial tuned until the circuit is brought into resonance with the crystal frequency. The point of true resonance is indicated by minimum current in the milliammeter. The aerial is then coupled to the plate coil and adjusted for the desired input.

OPERATION ON 20 METRES.

Put power switches in the "off" position, turn centre switch to left-hand side and remove keying plug from socket. Insert Yellow spot cathode coil in corresponding holder and Yellow spot plate coil immediately behind the milliammeter. Switch on and tune cathode circuit condenser to fundamental frequency of the 7 Mc/s crystal, this point again being indicated by minimum current in the meter. Then tune Yellow spot plate coil into resonance which setting is ascertained by a further minimum reading on the milliammeter. Afterwards, aerial load is applied and adjusted for the desired input.

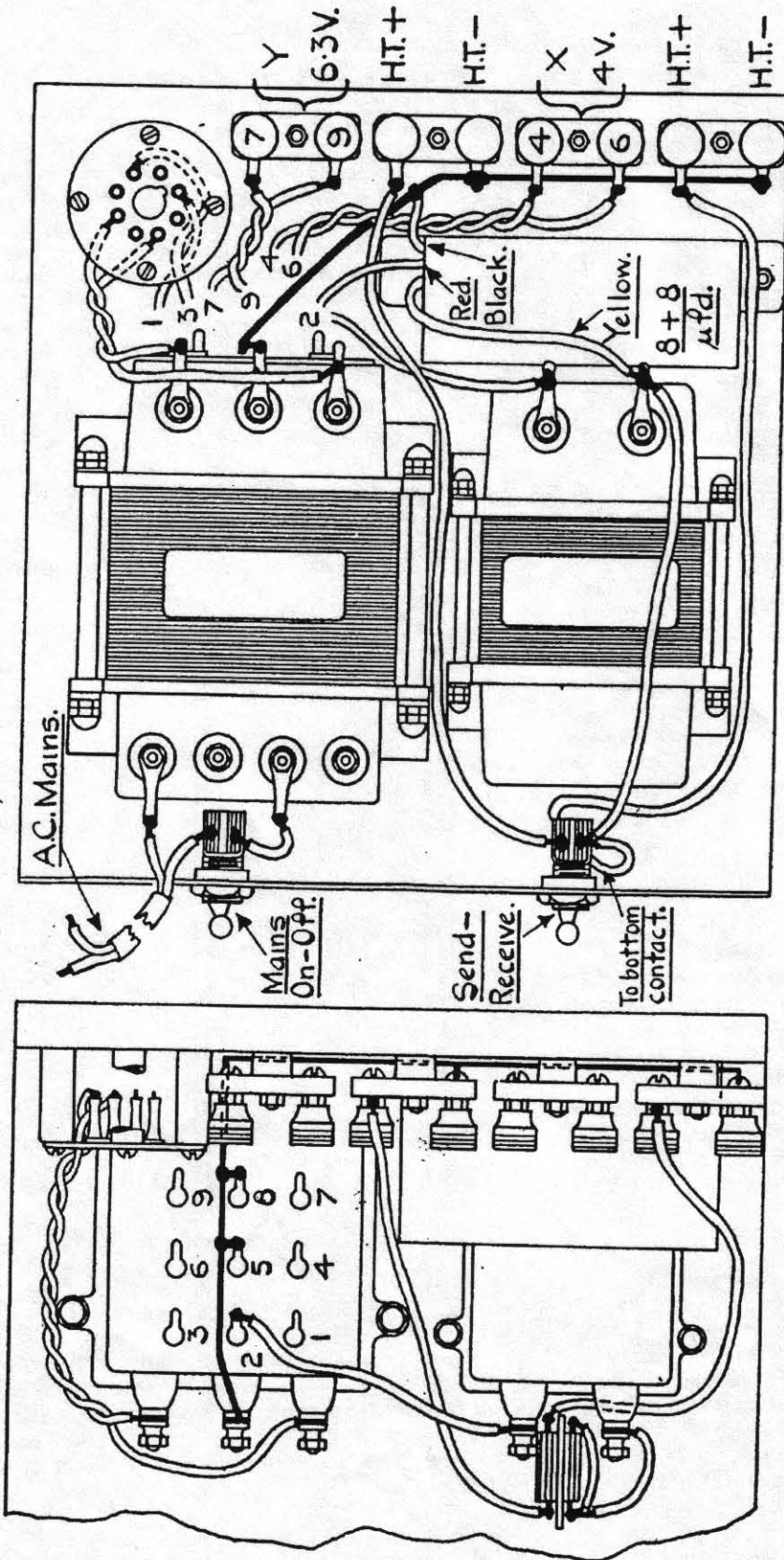
AERIAL.

Upon the coupling and tuning of the aerial depends the amount of power dissipated by the valve. This coupling should be varied to draw sufficient current consistent with the characteristic of the valve used. As transmitting aerials are usually a question of personal taste no special provision has been made but a tuned link coupling is suggested as being the most suitable for general efficiency on the bands covered by the transmitter.



The above drawing shows the dimensions and construction of the wooden rack for mounting the three units of the station. Wood has been used, since it is easily obtained and worked but an alternative metal construction may be used if desired.

A MINATURE AMATEUR STATION (continued).



POWER SUPPLY.

WIRING AND LAYOUT PLANS.

The diagram on the left shows a direct back view of the unit, while on the right is a view from the top of the baseboard. The correct connections to the transformer are shown by the numbers on the wires and on the transformer although in the drawing for the purpose of clarity the actual connections have not been completed

LIST OF PARTS (Power Supply).

EDDYSTONE COMPONENTS.		Price
1	Metal Panel, black ripple finish, No. 1118	1/9
4	Frequentite Terminal Saddles, No. 1046 at 1/- each	4/-
4	Insulating Pillars 1", No. 1029 at 4d. each	1/6
MISCELLANEOUS PARTS		
1	Transformer, Output 350-0-350 V, 120 m/a 5V 2A C.T.	
1	6.3V. CT. 4V. 2A. CT. (Webb's Radio)	
1	Choke 20 hys (Webb's Radio)	
1	On/Off Switch, type S.P.D.T.	
1	Condenser 8 x 8 mfd. T.C.C. type 53039	
1	Clix Octal Base	
1	Assorted Screws, Bolts and Nuts, Wire and Tags, etc.	
1	Baseboard	
1	Approximate cost of miscellaneous parts	£2 9 0
1	Osram Rectifier Valve, Type U50 B required.	

MEMBERS FREE ADVERTS

("In Praise of Eddystone" is held over this month due to lack of space)

FOR SALE: Really Immaculate EA12 with Handbook; £275
Marconi Badged 1831/1; £225. 1837/2 with FSK Board; £275
All in GWO & Nice Condx. *John Price (Surrey) 01883 717484.*

FOR SALE: Eddystone 940, £120. EC10, £80. EB35, £80. O.V.N.O.
All in Working order and nice condx, all with manuals.
Call Jim M1CUC on 01708 340304 (Essex)

FOR SALE: KW Vanguard AM/CW Tx, c.1956, working order, complete with 75-ohm dummy load,
circuit diagrams and notes plus spare 6146 PA valve. £75.
Geloso VFO 4/102 for above, as new in original box. Prefer same goes with Tx & not separately. £25.
(see next)

WANTED: Eddystone 670A in working order for cash or swap for above items. Also Eddystone 870
wanted, in green if possible. *Contact Richard Hall G00GN QTHR,*
Telephone: 01789-293375.

FOR SALE: Large selection of test equipment including Digital Frequency Meters, Spectrum Analyser
and Adapter, Digital Voltmeters, Signal Generators.
Also Microwave Modules 2/70cm transverter, ATV transmitter & converter, small hobby oscilloscope,
Thandar Portable Oscilloscope. Radio equipment includes Collins KWM2A, KW KW204 Tx, a few
duplicate Eddystone receivers from my collection e.g. 730, 770R, 830, 670, EA12, 870, EC10 (Mk. I &
II). I also have a scarce BLUE AR88 for sale. (see next)

WANTED: Anything Interesting! Try me, I'll swap or buy. Also wanted Piccolo filters for 830/9,
Contact: Simon Robinson G8POO QTHR Tel: 01434-633913.

FOR SALE: Eddystone 730/4, perfect condx inside & out; no mods. £160 o.n.o. Also Marconi Sig Gen
TF2002B MF/HF. The actual instrument used at the Bath Tub until the late 1980's. £110 o.n.o. Buyer
inspects and collects.
Call Colin G4HNNH (Birmingham) 0121 472 3845.

WANTED: Eddystone EC958 Table model with cabinet in GWO and Condx. Also Eddystone plug-in
coils - 6P (Pink), 6G (Grey), 4BR (Brown), 4P (Pink), 4G (Grey).
Contact Jim, M1CUC, on 01708 340304 (Essex).

FOR SALE: Clean Xerox copy of AR88D handbook; £5 inc p&p.
Contact Phil G8CYU, on 01242 519866 (Cheltenham).

FOR SALE: Eddystone 840C, GWO & nice condition;
Call Anthony GW4RYK on 01686 630 255 (Montgomery, Mid Wales).

FOR SALE: Eddystone 730/4, *Call Dave G0BSM, 01543 372 958 (West Mids)*

WANTED: Eddystone 1001 in GWO. *Call Martyn 01460 76143.*

WANTED: For 940, wafer for selectivity switch S2A & B. It is a 2-pole 3-way rotary. Many thanks.
Call Bill on 0141-562-4571. (Glasgow)

HELP, HELP: Any details, picture, circuit, anything, of Eddystone 'Atlantic Two' Short Wave receiver of
c.1928. This is a rare and historic set and we need to know more about it. Is it the same as the 'Short
Wave Two' of c.1927 ? It could be! *Contact Graeme G3GGL at the QTH shown on the front cover.*

ENDIT * ENDIT * ENDIT

Another Newsletter but one with a difference. Much more of the work done by Graeme & Simon. Please remember that all members are welcome to send in their contributions, any printed format. If handwritten we will type it up for you, if typewritten do make certain that it is sufficiently legible for photocopying, i.e.- use a new(ish) ribbon.

Graeme has told me about some Alice in Wonderland prices at a recent wireless auction. Apparently James went to this auction and was surprised to find a perfectly clean 640 go for £35 and yet a model 696 absorption meter went for £115, a mysterious telephone bidder dropped out at £110 !!! Wow !!!

Have fun, 73, Ted.

*** That poser, well the book concerned is the Daily Mail '1001 Answers to Correspondents' by Andy Simpson and James Black, at £6.99 from most Booksellers. ***

JUST TO FILL THE PAGE - THE LAST WORD FROM GRAEME!

THIS MONTH WE ARE ENCLOSING a very evocative data sheet from the Bath Tub, probably our most artistic item so far. In fact, some members tell me they would like to frame it for the shack wall! This HF 'fishfone' transceiver is dated 1988 and we all know what's happened to the British Fishing Fleet since then, don't we? A very rare model indeed, we know of none that has been preserved.

I HAVE BEEN SPEAKING RECENTLY to Matt Parkes, who continues as General Manager of Eddystone Radio under its new owners, Megahertz Communications. He tells me that the VHF-FM Broadcast Transmitter market has improved lately, a sizeable order going to a customer in the far east.

HE ALSO TELLS ME that a Sales Team from the Company has been travelling in the Sub-continent. They have found that the Pakistan Broadcasting Corporation still have in daily use several Eddystone Model 1830's (the solid state replacement for the famous valved 830). They have been in continuous use since 1973, which makes 26 years when you count on your fingers! (How many hours?) Not bad for an early transistor set. Will they be able to persuade them to take some new 6200's or will there be a long-distance call to Dave Simmons?

AN APOLOGY - YOU MAY BE GETTING THIS AUGUST NEWSLETTER IN EARLY SEPTEMBER! AS I WAS ABOUT TO TAKE IT TO THE PRINTER I WAS RUSHED TO HOSPITAL WITH A DISINTEGRATING HIATUS HERNIA! BACK HOME NOW AND ALL SETTLING DOWN. - GRAEME.