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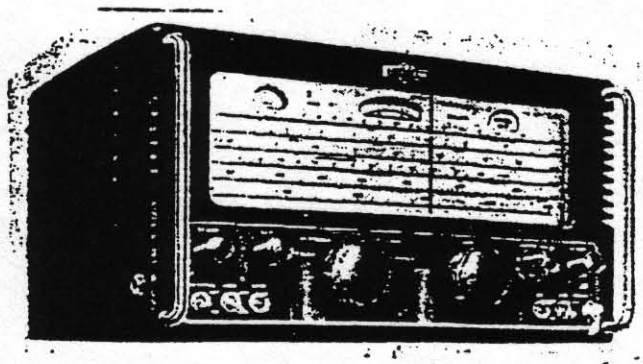
Eddystone Users Group



770R

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SEPTEMBER / OCTOBER. 1991.

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Featured Model this issue - 770R.

A non-profit-making newsletter for Eddystone users.

Address all mail -

W. E. Moore, Moore Cottage, 112 Edgeside Lane,

ISSUE 9

Another issue, another model! This time the 770R and its many variants. Some 27 variations of the original are known but more come up each week it seems. So many Government Departments, branches of the armed forces, or private organisations asked for changes to the original specification that you must have a "lexicon of the 770R" to know just which beast you have hold of. In one, it may be an armoured "mil-spec" bucccaneer mains plug and socket, in another it may be a muting facility or some minor difference in aerial input socket. I believe that no other Eddystone Model was manufactured in so many variants.

One E.U.G. member on being sent to the Gulf took along his EC10 Mark II and reports many happy hours of listening, where a "G" call was DX and news came from B.B.C. World Service or V.O.A.

Membership is continuing to increase, our countries list too is going up. This is good news for all our members since the outlet for our adverts increases. As it is we hear from some members that their ads have been successful.

Some members ask that when we publish comments or extracts from their letters, that we withhold names and addresses. This is I believe usually for security purposes but others do worry about junk mailing lists. The membership list and details will NOT be available to anybody for this last purpose.

Several members query T.V. line timebase interference. Some information on this form of QRM is in this issue. (Your prayer is answered Steve!)

If you write for information on your receiver please quote from plate on or in the radio, we need model number and suffix, if possible, also the serial number. Just to quote a recent letter "for my 830 model" this was not a lot of help and entailed further correspondence. We have manuals for six different 830 models with some quite big differences. If in doubt, check in the model list sent with issue 7. If it is an 830/7 or/9 then say so.

DOUBLET AERIALS & QRM

So many members mention use of a simple random wire aerial, whilst complaining of a QRM problem. QRM, whether it is from T.V. line time-bases or from other varied sources such as car ignition, any kind of electrical appliance producing R.F. from switching transients, or a nearby computer, can often be cured by locating the aerial as far as possible from the source of interference and using a feedline with minimal pick-up between aerial and receiver.

The oldest and simplest of these aerials is the doublet type, since most H.F. Eddystone models have provision for this type of balanced input, why not use it? It is cheap and as easily erected as the so-called random wire aerial.

Try tuning your radio up and down each range with no aerial attached, any QRM still audible will be almost certainly via the mains supply. A good mains filter will cure this, use of a double wound isolation transformer will quite often eliminate a lot of mains borne noise.

The theory behind the "minimum pick-up" feedline is that it consists of two equal length leads twisted together throughout the whole length of the down-lead any signal including QRM picked up by one lead will be picked up by the other, thus the two signals arriving in the tuned input circuits will balance out, only signals picked up by the top arms of the aerial will be fed down the feedline to the receiver input. By getting the top arms of the aerial as far away from the source of QRM and as high up as possible will dramatically improve your reception

SFERICS

Recent mentions of using a 6J5GT in place of the 6V6GT in a 358,640 or 740 bring the following item from a member "Many E.U.G. members will know of the H.R.O. receivers which were built by the American "National" company. They were fine communication models, only marred by the necessity to change coil packs when changing bands. However, the model HRO60 comes to mind when mention is made of necessary A.F. output power for a Comms; receiver. This HRO60 employed push-pull 6L6 valves as Audio output amplifier. Surely an exaggeration since several well-known authoritative writers at that time stated that from 500 mW to 1 watt was sufficient for comfortable listening."

Orders for badges continue to come in at E.U.G. Checking around it would seem that the price of £2.00 including p. & p. is about half of what similar badges are priced at. This is possible for two reasons, E.U.G. is NOT making a profit from them and Eddystone Radio Company, through the kindness of Chris Pettitt, subsidised them.

Recent comparisons by one member concerned various types of aerial systems for general SWL work at his Qth. He had three systems in situ and installed a Datong active antenna system. With the 60 foot random wire to the bottom of the garden, at about 30 foot high, a 33 foot vertical up the side of the house and a loft-mounted random wire in a "Z" shape, some 50 foot of wire - listing the various broadcast bands from 90 metres up to 13 metres and choosing a list of reliable broadcasting signals available at early morning 7-8 a.m. and evening 9.10 p.m. using a Zenith laptop computer - the various signals, strength, noise, QRM, were checked out on both morning and evening listening periods, as each signal was tuned in, reception on each aerial system was checked. "It was soon found that whilst the 940 "sounded" much livelier on the active aerial this was simply due to multiple false signals being produced in the amplifier, an attenuator made little difference whether in the input to the aerial amplfier or between it and the 940. An example was Radio Moscow on the 20 metres amateur band and the adjacent 19 metres broadcast band it was possible to find the same broadcast from Moscow in three places at good strength. On the "long wire" down the garden it was there just once! After a three day period it was clear that for general all band work the long wire came out best except for signals in daylight from U.S.A. S. Africa and N.Zealand. For these there was a slight advantage in using the vertical whilst these figures may not apply with other aerial systems, other receivers or a different Qth I am now happy in knowing that if looking for a particular signal at a certain time I can simply switch to the best aerial for that signal. The loft mounted "Z" wire was found to be particularly useless for U.S. or Canadian signals which were as much as 4-5 points down on the 'S' meter, it seemed best for medium wave general reception. Short wave signals must be cancelled or reduced in some way by its folded over configuration."

The lengths people will go in order to listen to their favourite Eddystone when mains supply is not available! Ben Ellis who lives in a "mobile" (but fixed) home has for many years run his 710B from a 6 volt truck battery which is charged by a small wind driven dynamo originally made for an Austin car shortly after W.W.II This is mounted on a wood frame fixed to take advantage of the prevailing wind. His 710B uses a built in vibrator pack running from 6 volts and providing the H.T. plus supply. The system has failed once in four years, when gale force winds wrecked his "windmill" blades and incidentally blew his heavy window boxes

bought at a rally recently, carefully refurbished and he now has plug-in spares ready for use. The 710/B is similar to a 740 but meant for broadcast use only, hence its name "The All World Six". It does cover long, medium and short wave but in lieu of a B.F.O. it has push-pull audio output using EL42 valves and a magic eye tuning indicator.

A misconception common to several members that the "A" after 670 or 840 indicates AC/DC and that the lack of it means that the 670 and 840 (no "A") are AC only. I can't see where the idea came from - however, let it be put to rest NOW. The 670, 670A and 670C, the 840, 840A and 840C and the 870 and 870A are ALL AC/DC.. Cabinets and circuitry differ since they are later production versions i.e. -

670 : Square face dial ½ round scales, diecast, aluminium front panel

670A Slide rule dial, diecast aluminium front

670C Slide rule dial more linear scales, pressed steel front

The 840 series are similar to the 670.

The 870 and 870A differ in that the exterior design has been improved on the /A and from being a 4 valve and rectifier in the 870, with L.M. and two S.W. ranges the later version 870A is a full 5 valve circuit.

Importing an Eddystone to the U.K. may sound a bit like something from "Alice through the lookingglass" but in fact one member has recently done just that. His 830/5 was bought from an amateur in Stockholm , part exchange for a number of hard to obtain car spares which were taken over on a holiday trip, the 830/5 came back the same way. Apart from tightening of various grub-screws on the various switch mechanisms no work was needed. A valve change is scheduled but does not seem to be an urgent job. It does have a non-standard aerial socket fitted but this has not caused any problem since a mating plug was supplied. According to the manual when compared with an 830/2 this is the only difference. Quite a rare one this.

The item in this issue by former Eddystone and Webbs Radio employee is typical of the kind of thing many members are asking E.U.G. for, just having and using an Eddystone seems not to be enough. Since issue 1 where the history of Eddystone was first mentioned, our members have written asking for more historical information Some interesting facts have surfaced e.g. a prewar (WWII of course!) shipment to Rio de Janeiro of E.R.A. 7 Receivers, whatever became of them? A shipment to Dar es Salam of "All World 4" models! Use of unknown model of radio telephone V.H.F. set on the D.day landing fleet, manufactured by Strattons but a model that the company cannot today trace. If you know anything of this or other Eddystone products let E.U.G. know. Your item will be published in this newsletter and read by E.U.G. members all over the world - well in 16 countries!

5440 ?

New member, what is "Sferics". I did explain it is short for atmospherics and we used it in the RAF wireless school to cover rumour, gossip or general items of info. Talking of the RAF my service was from Padgate Basic Training where I was able to use an HRO MX, to Locking wireless school where I got to use 1132, 1392 and 1475 receivers with 1131 and 1509 transmitters to RAF Bletchley and Stanbridge as controller of world wide R.T.T.Y. circuits using Marconi SWB8 and SWB11 transmitters and AR88 receivers, to Ismaleia in the Canal Zone, Habbaniya and Malta, big RAF communications facilities in those days, the early 1950s. It is not uncommon to meet up with former RAF friends at rallies. Two have become E.U.G. members.

Do you have a two metre beam? Tune to a quiet frequency, choose morning or early evening when the sun is just above the horizon, rotate your beam to point at the sun and note the increase in noise level. If you can elevate your beam to point at the sun then this can be done at any time of day. This solar noise is taking more than 8 minutes to reach you having covered 93,000,000 miles. If you can attach a noise level recorder you can check noise level the same time each day, periods of above normal noise will coincide with propagation difficulties on the H.F. bands. Colin Diss uses a 770R MKII pen recorder and 4 element beam to record sun noise at 1.00 p.m. each day the receiver is dedicated to just this function. Recordings over 14 months are now available and it is possible to compare them with dates of known ionospheric disturbances.

An early 1930s publication by Strattons gives details of a one valve 5 metre transmitter using Stratton components. It consisted of one valve and socket, one resistor, one fixed condenser and one variable, one R.F. choke and a 3 winding coil. Circuit is later in this issue but do not build it. Operation today would be illegal, and anti-social.

Seemingly, I was wrong when I said in an earlier issue that Strattons/ Eddystone never produced a crystal set. One member has a 1924 Eddystone crystal set in his vast collection.

Correspondence has already produced some new model types to add to the model listing which was sent out with Issue 7, it is hoped to produce a fuller, printed list at the end of year 2. We already can add a 730/2 and 730/3. A model 700, a 760 and a 770M.

Bryan Marsh in New Zealand takes me to task for putting crosswords in the newsletter and several other points. One important, to me, was that of not replying to his letter! Well, I did but it somehow did not reach him - hope the second letter arrived, Bryan. Cross-words or other items which some might consider out of place in a newsletter usually originate as a result of suggestions from members. As a point of interest, readers are now sending in items for inclusion and this means we are able to produce "bumper" size newsletters. Keep it up please.

A list of the manuals or instruction booklets we have available here is being made and will go out with this issue, if E.U.G. can help you we will. Just write and ask.

- Have heard from several members recently that Howard Turner is still running Centre Electronics at 345 Stockfield Rd, Yardley, Birmingham, & that the number to call is 021-706-0261. He usually has something in the shop with an Eddystone label on it.

- Thanks to Mervyn Wicks for all the Stratton & Eddystone related stuff sent this month, as with all such ephemera it will go in the files & be used in future issues.

- Peter Roberts GW6AYM, has sent in a load of original Eddystone stuff, catalogues and other publications, for us to copy and return to him, it is being done now, but what I shall do, if Chris Pettitt of Eddystone agrees is to publish some of the booklets in their entirety as 'add ons' to the newsletters. This will help many of you who are on the look out for catalogue part numbers and/or circuits using Eddystone components.

- S.O.S. Wanted 840A or 840C, contact James M. Thompson. GM8GUX, 2 WILTON Hill, Hawick, Roxburghshire, TD9 8BA.

- Nice to hear from one new member that his ad in issue 8. sold his 770 within three days ! On same subject have been able to put two prospective advertisers directly in touch with members having what they wanted, an external type 'S' meter unit in the one case and battery box for an EC10 in the second case. Of interest to many here is that the one battery box will do for many models, i.e. EC10, EC10 II, EB35 series, and so on.

- S.O.S. Wanted Mains transfo, smoothing choke & volts selector panel for my 640 or will buy scrap 640 for parts including small control knob. Will swop/part ex an 'S' meter in diecast case or complete 870, have also large control knob for 640 if you need one, D W Blanchard, 141 Dunes Rd, Greatstone on Sea, New Romney, Kent. TN28 8SP.

- Have been able to put two of our group members from Glasgow in touch and they have met up, and are doing some 'mutual assistance' repairs. Sounds like a 940 might even change hands as a result of the meeting, how can you bear to part with it Bill ?

- If any members do feel that their know how can be made available to other members in the same area then let EUG know, the anguished requests for help to fix a favourite Eddystone come in quite regularly, sometimes the problems are such that I can help by 'remote control' sort of, other cases need a hands on repair job so come on, share your expertise with other members.

- From Ross Paton in New Zealand has again sent in apack of info on the Eddystone situation 'down under'. Some will go into our files and be used in later issues, the one bit we are going to use immediately is on this page. A photo of the present Eddystone Lighthouse and alongside is the wreck of a former lighthouse on the site. Known as 'Smeaton's Stump' it is the remains of the very first professionally designed lighthouse, in effect the first two were built by mere'amateurs' and not suited to such an exposed site. One point with respect to the photo used here, I have a sneaking suspicion that the negative used was printed reversed ! My own recollection is that the approach to the lighthouse with rocks to the left and the 'stump to the right the door half way up has those two windows in line above to the left not the right , could be mistaken of course, if I am one,of you out there will let me know.

EDDYSTONE LIGHTHOUSE. The man who undertakes to build a lighthouse at sea has no easy task before him. He has to contend with wind and high seas which sometimes ruin his work as soon as it is started; he must be able to stand knocking about in a small boat at all sorts of hours. These and other difficulties had to be overcome by John Smeaton, who built the Eddystone Lighthouse in 1759.

The rocks on which it is built lie in the English Channel some 14 miles from Plymouth, right in the track of ships, therefore the importance of the warning beacon can be imagined. Smeaton's lighthouse, which was 85 feet high, stood from 1759 to 1877, when it was considered to be unsafe. The present lighthouse was built in 1882 by Sir James N. Douglass. It contains 4,688 tons of stone, and has nine rooms, against four in the previous building. It is 133 feet high.

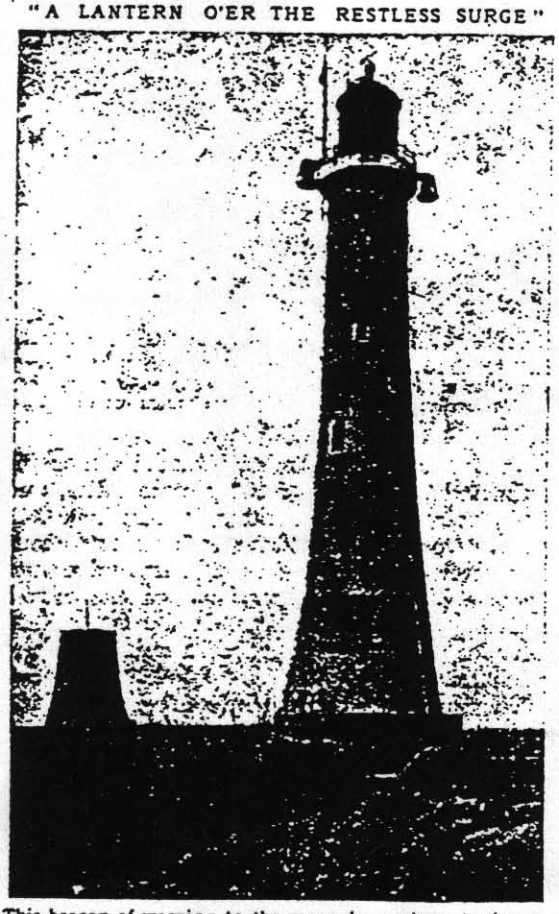
The Eddystone Lighthouse

With regard to the famous Eddystone light, it is interesting to recall that the first two towers built on the rock were the work of amateurs. The first was designed by Henry Winstanley, an eccentric artist who produced a wooden pagoda-like structure with a high roof and numerous ornamental projections, the whole covered with gaudy paintings and gilded inscriptions.

Its unsuitability had been repeatedly pointed out to Winstanley, who, by way of reply, expressed a wish that he might be in the lighthouse in the worst storm that occurred in his time. On a certain gloomy afternoon he put out to the rock to spend the night in his lighthouse. That night the country was swept by a terrible storm—the great storm of 1703. When, on the following morning, the boatmen looked out towards the Eddystone the rock was bare. Winstanley and his lighthouse had vanished together.

The second Eddystone lighthouse was built by a man called Rudyerd, a mercer of Ludgate Hill. Rudyerd's Eddystone, which was described by Thomas Stevenson, the famous lighthouse-builder, as "a true masterpiece of construction," was destroyed by fire. (*See* Eddystone Lighthouse.)

"A LANTERN O'ER THE RESTLESS SURGE"



This beacon of warning to the men who go down to the sea in ships is Eddystone Lighthouse. It was built to take the place of an earlier tower, the base of which is seen on the left.

Some Famous Lights

Among the most famous lights of to-day are the Eddystone, 13 miles off Plymouth, which has been rebuilt three times since 1700;

Re 960, in answer to Stephen, it was the first transistorised model produced, was in fact a solid state version of the 940 with similar ranges and styling. By modern standards it's front end performance is not too good. It cannot compare with a 940 in either sensitivity or signal to noise ratios.

W. Gibson in Glasgow is refurbishing a 940 which has an A.V.C. fault. He is slowly getting there and from his letters enjoying the challenge posed him by the job. His recent purchase of a 30K OHM analogue meter has helped considerably.

New Zealand member has a 670A variant. A M.I.M.C.O. type 2245A - different from 670A in that it covers the tropical bands, a new one for our lists.

In the 1930's an Oxford Unversity Everest expedition used transceivers operating on or around sixty MC/s, with about a five mile radius estimated range. The world's first A.M. modulated, tuned lecher-line transmitter and receiver. Guess who was the manufacturer of these sets? It was Strattons of course! An incidental fact is that during factory production testing on five metres the signals were received in New York!

I cannot believe that the Bard of Stratford was an Eddystone employee, in the Quality Control Department! My EA12 receiver when opened up disgorged a three by two inch Roneo-copied "QC" slip which is signed by one W. Shakespeare". Fact not fiction!

During the Gulf conflict (it was never a declared war) both Iraqui T.V. and Radio continued broadcasting, why? It would seem that history has proved these media to be potent propaganda forces. Surely a priority should have been to silence both? As it is within weeks of the end of the conflict both T.V., radio and news agency teletype are being broadcast at fullstrength.

Being fortunate in having a quiet rural Qth, where even the nearest pylons are over a mile distant, I am always supprised at the high level QRM some people have to put up with, especially in town or city areas. Comments of"S5 to S7 normal" occur in letters and yet these same correspondents persevere in their listening, many weird and wonderful devices are made and used in attempts to combat this R.F.pollution, mains filters, screened shacks, loops - even screened loops, al battery operation. One member claims to have reduced QRM considerably on his battery run EC10 by reversing earth and aerial connections.

Not many members will have this problem but Tony who lives just 45 miles from the Droitwich Radio 4 transmitter was getting radio 4 breakthrough on his 670A radio. This occurred at several points on M.W. An attempt to cure this with an attenuator was a complete failure. As a desperate measure a MW/LW tranny was cannibalised, this yielded a four inch ferrite rod with a medium wave coil. This coil was shunted with a 1200 pF ceramic condenser, the filter was fitted in series the aerial lead-in to the 670A. Tuning to the loudest of the R4 signals, which occurred just below 600 KC/S, the rod was slid in and out slowly until a position was found where R4 was completely inaudible. This was marked temporarily. The whole filter was now fitted into a number 6908 Eddystone die-cast box on a bed of foam plastic, suitable inlet and outlet holes had been drilled and fitted with

grommets. The filter was once more re-tuned and the rod sealed in position with a dab of adhesive. The box was screwed up and re-tested. R4 was gone and normal listening could be resumed. Funnily enough this problem never occurs on the two domestic radios using built-in aerials, pick-up on Tony's 80 foot long-wire must be to blame. This cure will be effective on other stations, on other frequencies, the formula to tune a filter to another frequency will be

$$F = 160/\sqrt{L \times C}$$

Where F is in kilocycles, L is in microhenries and C is in picofarads. A common value for the medium wave aerial coil on most trannies would appear to be 540 microhenries.

Global warming or new ice age? One E.U.G. member who noted my comments re excess heat from several (many) Eddystones operating at once. (I sometimes have 15 or 20 on at one time!) Anyway, Don fitted a five inch muffin fan to the rear of each of his 840C and 670A receivers using 6 B.A.nuts and screws through the small vent holes on the rear of the cabinet, the fan being on the outside, mounted as close as possible to the position of the dropper resistor/rectifier valve. Operation is virtually noiseless. He mentions that last winter this was the only "heating" in his shack, yet in present summer weather the receivers stay cool and stable.

Do you live in a modern house, or a rewired one maybe? The P.M.E. earth system is useless for a transmitting earth of course, but do you realise it is useless and can be even dangerous for receiving purposes!? It can carry into your receiving system a vast amount of QRM from other houses nearby. For this reason we are all told to install a good radio earth, either an earth rod or ground mat in the garden. If now you have both the P.M.E. earth and your earth connected together at your receiver, then any ground seeking currents on the P.M.E. will take the shortest, quickest path to earth. This will most likely be via your radio earth instead of going all the way to the sub-station!!! If your cable cannot handle the fault current there is a risk of fire. All because of a fault condition on one of your neighbours home appliance!

990R receivers are being sold at £195 and £15 carriage. See advert in Radcom for August. This is a slimline model which covers 27-230 MC/S in 4 bands (not 27 to 130 MC/S as in listing, issue 7). They are all solid-state and can be called an updated version of the 770R.

Some of the models for which we have manuals or instruction sheets here at EUG, 358,400,504,556,640,659,670,670A,680,680X,710B,730/4,740,750, 770R,770RII,770S,770U,820,830/5/7/8/9,840,840A,850/4,870,870A,880/2,940, 960,958,EA12,EC10,EC10II,EB35,II,III,888,888A,990R,990S,40A,EP17,EP20, if yours is not there let us know and we will try to find out what you need to know.

QUERIES FROM THE MAIL

What does the "A" or "C" suffix mean as in 670A, 840A, 849C? Well, it does not mean that "A" is amateur and "C" is commercial, as suggested by one member. It would seem that this suffix indicates a level in production model refining and upgrading as for the 840 series we have the original 840 - cast front panel rectangular dial with semicircular scales. The 840A had another cast front panel but with slide rule dial. The 840C was last of the series and had a pressed steel front, slide rule dial with "linearised" scales to obtiate cramping at the H.F. end. Each succeeding version had minor circuit improvements incorporated and all three are AC/DC.

The resistor to pin 8 of the 6V6 on my 640 is burnt black. All valves light up but I get no audio output. What is the value of this resistor and why did it go? This should be a 270 OHM, 1 watt resistor. A good replacement would be a metallic oxide 270 OHM, 2 watt modern type. Why did it go? It could be the 6V6 is dud, but more likely since you say that you always used phones and never a speaker. If C63 is dried out, then the 270 OHM can overheat - I'm quoting another member here since his letter mentions a similar fault and replacing C63 and R33 over a year ago has cured his problems.

If, as you and others say, the 940 is so good, why has it no crystal calibrator? As a general coverage model with a quoted accuracy of 0.5% over long periods and in severe climatic conditions, it would seem that the designers thought a calibrator to be unnecessary. You can fit one if you wish, see elsewhere in this issue.

GREMLINS IN THE WORKS!

Many of the older members, possibly with W.W.II experience, will know all about gremlins. Younger E.U.G. members may not have this personal knowledge or rather may not relise that gremlins unfortunately enter into everybody's daily routine! Nobody ever sees a gremlin, possibly you sense the presence, maybe even a glimpse out of the corner of one eye. Despite this, they're there - always waiting.

How come when the truck in front throws up mud or dust on to your windscreen, you operate the wash-wipe and wilst the wipers flash back and forth, making your windscreen completely opaque and the washer spurts just a few drops, before giving up, empty and useless? The gremlins, of course!

How come that last evening all your equipment was in top working order, this evening you enter the shack, turn on the light and the bulb goes pop. You change the bulb, only then realising the only spare one in the house is a 40 watt. Finally, you switch on your trusty old faithful 940 and as it warms up "fizz and splutter" the 32 and 32mF, C108, smoothing electro-lytic goes? It's them again!

This did actually happen to me, from light-bulb to C108, and it happened at the end of a perfectly normal day. It could be that "they" took a look at my face, thought I looked a little too happy or contented and decided to put me in my place.

It was "they" again who decided that my purchase of an outwardly nice-looking 670A on the B. & B. stall at a recent rally was too much of a good thing. At £40 it was priced right, looked right and felt right. Getting it home I resisted the temptation to slap 240 volts A.C. on it, having been caught out too often in the past.

Opening up the 670A on the bench I began to wish my £40 was still in the Bank. No valves in the sockets and no wiring to the series dropper, was enough to worry me. Upending the set I discovered much worse. Almost all the original wiring had been chopped out, excepting that in the coil pack and wave-change area. Most resistors were missing as were most condensers. Seemingly all the larger items such as I.F. transformers, tuning gang, coil pack and A.F.transformer were untouched. The apparent reason for this almost complete cannibalisation was to be found in the presence of several 3 legged black blobs soldered across pins under the valve bases. A close look at these identified them as 2N3819 F.E.T.s The "mod" had not been completed since only 4 were insitu, whether the cannibal had lost faith in his ability or simply been smitten by Zeus for his sacrilegeous act, I do not know. The 4 offending items were quickly removed and a list of resistors and condensers was made up from the 670A manual. At no time was any consideration given to scrapping the receiver.

A final total of 21 resistors and 17 condensers was arrived at and plans were made to obtain these either from my stock or at the next rally in the case of a non-preferred value i.e. a 50K or a .05µF then the nearest preferred value of 47K or .047 was fitted. Since modern resistors of a given physical size are usually of a higher wattage, advantage was taken to fit 1 watt in lieu of ½watt and 2 watt in lieu of 1 watt. Either 5% or 2% were used for all resistors tolerances. The paper decoupling condensers were replaced with polyestor types with one exception - I always like to use a mica type for coupling between the triode A.F. amplifier and the output valve grid.

Writing this does not take so long, the actual rebuilding once all components were obtained took some 3 weekends, fitting a full set of valves, re-checking and correcting one or two gremlin-induced clangers occupied another weekend. When powered up the 670A was a "worker". Some hum on station was cured by a 500pF condenser across the heater pins on the frequency changer valve.

After a thorough running-in period, the 670A was left on all day Saturday with volume down to minimum, a voltage check was made with reference to the manual voltage table. All were within the specified limits as measured on an AVO7.

Checking the I.F. transformers with my B.C. 221 showed that they were both spot-on, so checks were made on the coil pack. Only minor discrepancies could be found at the H.F. end near 30 MC/S, this was corrected and the final touch was to carefully clean the scale-glass - total cost of valves and components was less than £20, so that my "as new" 670A finally cost some £60. Not over-expensive for this model and against that is the expectation of a good few years of,hopefully, gremlin-free use. The actual pleasure gained from the restoration project can also be offset against that £60.

However, the moral must be "Beware Gremlins"

- A Noise Limiter Fault.-

- This member was puzzled and stymied for some time by 'a funny one' as he called it. Whenever the noise limiter was switched on a fairly high level of hum was produced in the output. After much sweat and many nasty words the fault was traced to an open circuit resistor, a 100 Kilohm in the HT.2 circuit , across the stabiliser valve. It was now reading over 600 Kilohm. This was on a 680X and replacement was the cure, something he will not forget for a long time.

- H I N T S -

A member has touched up some slight blemishes on his 750 case. The chipped black crackle was touched up with white tippex, when hard this was blacked with an indelible laundry marker. The whole black painted case was then polished using wax boot polish and soft clothes. Result, an unblemished mint-looking 750.

If your Eddystone has no built in calibrator but you have a BC221 or similar Sig; Gen; with crystal standard, leave this "on" switched to crystal, normally a 6 inch piece of wire connected to the BC221 aerial terminal will provide sufficient signal for you to pick up the 1 Meg. pips on your Eddystone.

So many members mention Birkett's as a source for components that it is only fair to give them a mention. Whether at the Lincoln shop or at a rally th are always very helpful and John's knowledge of components is such that he can usually help out. At Rallies if the item is not there, you can pay then and they will send it on to you by post.

On a 960 model if you change TR3 the local oscillator, it is an OC171, then you must re-trim all six ranges at the H.F. end of the range. Internal capacity differences between individual transistors is so great that quite large frequency differences are possible.

Some transistor sets use electrolytics as coupling in R.C. coupling, but this is a definite NO-NO in hollow state circuits. Be safe and use mica or polyester high-voltage types.

With modern electrolytics being somewhat smaller than those used in the older valved Eddystones it has been possible in some restorations to retain the empty can of a failed mains smoothing condenser and to insert the new component inside the empty can. I was able to do this on an 840C and more recently on an 880/2.

For D.F. work on his "beacon" collecting one member used a 12 inch ferrite rod wound over its full length with plastic insulated wire, resonated by a 1000 PF variable condenser. This whole tuned aerial is mounted on a cake icing turntable which stands on a nearby window ledge.

Listen on 5.680, 3.023 or 5.420 KC/S for helicopter air-sea rescue services by R.A.F. from "Plymouth Rescue" or "Edinburgh Rescue". I find 5.680 to be most common used.

The A.V.C. circuits can become either partly or completely inoperative when an associated paper decoupling or hang-time consenser becomes leaky. I have measured as being from several hundred OHMs to several Kilohms. Replacement makes a remarkable improvement.

- - — — —

INEFFICIENT A.V.C. ON A 670A

A 670A which was being checked over before purchase showed one apparent fault immediately, distortion on medium-strong signals. Some checks on valve anode voltages showed that the A.F. triode was about 15 volts high, no other discrepancies on the H.T. circuits so a check was made on the A.V.C. voltage. This being 2.5 volts out of spec. a test was done on the A.V.O. valve tester. An emission check showed that this valve was low-emission, only two thirds up in the red! Since no new valve was immediately to hand, a good used valve was fitted and the set fired up again. No distortion and the H.T. was in spec., A.V.C. was checked and found to be okay. If used solely for speech, the distortion was tolerable and only became annoying on music. More importantly, the inefficient A.V.C. was a nuisance on M.W. after dark, comparison on a German station tuned in on two 670A models side by side showed up the lack of A.V.C. using the original valve.

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NON-OSCILLATION, LOCAL OSCILLATOR OR B.F.O.

In the case of the L.O. this is usually noticeable when tuning up the higher end of the H.F. bands. A symptom is where signals inexplicable disappear after, say, 12 M/CS. This is caused by a low emission frequency-changer valve and substitution is the only answer. If substituting a known good valve does not effect a cure, do some voltage checks on the F.C. valve. The critical value is the triode anode volts, if low check the value of the triode anode resistor. If both triode and hexode anode volts are incorrect check the value of the kathode resistor, common to both sections of the valve.

The B.F.O. when switched on or off will show if this stage is oscillating by presence of absence of a Heterodyne, again checks on the valve, by substitution, and by anode voltage, can be made, not forgetting the resistance of the anode resistor.

For both B.F.O. and L.O. it is possible to check for oscillation by putting a meter across the kathode resistor or anode resistor. Tuning from L.F. to H.F. on the highest frequency range, a flick of the needle will show when oscillation stops or starts in the L.O. stage. Tuning of the B.F.O. control will also in some cases produce the same effect.

Summarising - Incorrect voltages, faulty valve, high-value resistors are the most common causes. Less likely are short circuit condensers, dry soldered joints, open circuit coils are possible causes.

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METALLISED OCTAL VALVES

Valves such as EF39, ECH35, EB34 which are coated with a red or grey metallic coatin can be the cause of instability, microphony, clicks or "Fizzing" on loud signals. With age this normally earthed coating can become disconnected, partly or completely from earth. In some cases the coating can peel away altogether allowing feedback to previous stages. This is where our hollow-state technology can benefit from the service products marketed for modern equipment. Both Cirkit and R.S. market an aerosol for use on computer "plastic" cases, to provide an R.F. screening layer. This aerosol containing nickel particles in suspension can be used to repair or renew the metallic coating on a valve. Do mask off a clear surrounding area around the top cap before spraying!

på 50—60 km., avhengig av sendereffekten og antennens høyde. Det vil lett forstås at det skal en god del slike sendere til for å dekke et land som vårt. Når dertil kommer at fjernsynsapparatene, både for sending og mottaking, er mange ganger så dyre som radioapparater og at et fjernsynsnett, foruten å kreve langt mere materiell, også vil kreve et langt større teknisk personale enn et tilsvarende kringkastingsnett, vil en skjønne at det, iallfall på det nåværende trinn i den tekniske utvikling, ikke er lyse utsikter for fjernsyn i Norge. En fjernsynsmottaker koster i dag ca. 2000 kroner, en sender ca. 100—150 000 kroner, avhengig av størrelsen, og et kamera for fjernsynsopptak ca. 100 000 kroner.

— *Vil det ikke kunne tenkes at det kunne bli aktuelt å drive fjernsyn iallfall i de tettest bebygde områdene av landet, f. eks. omkring Oslo, Bergen og Trondheim?*

— Selv i disse områdene er det vel tvilsomt om driften kunne bli «økonomisk forsvarlig». Dessuten ville det vel neppe være særlig populært i resten av landet. Imidlertid er det nok mulig at det før eller seinere vil bli bygd en sender for prøvedrift. Ellers blir komitéens oppgave foreløpig å utarbeide et overslag over hva det vil koste å bygge ut et fjernsynsnett som dekker hele landet. Og så blir det myndighetenes sak å avgjøre om det skal bygges eller ikke. En ting er sikkert. Det skal en mengde materiell til, og dyrt blir det. Både byggeomkostninger og driftsomkostninger blir store. Og hvem skal betale det hele? Fjernsynsabonnentene?

Nei, vi kan vel ikke gjøre oss noe håp om regulær fjernsynssending i Norge med det aller første. Men kunne det bare bli satt i gang prøvedrift, ville jo dette straks være noe for radioamatørene!!

M. V.

Radio-avkjøling av hus

En kunde klaget over at hver gang han slo på radioen, ble huset kaldt innen en time var gått. Huset ble ikke oppvarmet med elektrisitet, men med oljefyring.

Årsaken ble funnet. Oljebrenneranlegget ble regulert av en termostat. Denne termostaten var plasert i et hjørne like bak radioen. Radioen ble flyttet litt vekk, og problemet var løst. *(Radio-Electronics.)*

SEPTEMBER 1950.
EDDYSTONES IN
NORWAY! TUNES TO TOR!

- Hollow State versus Solid State.-

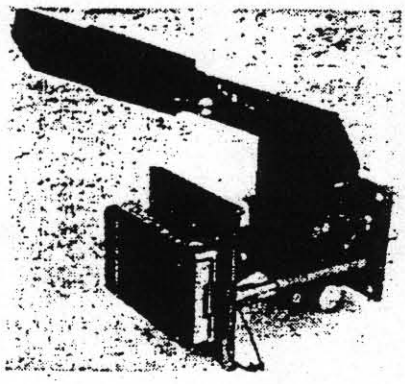
- Last winter I used my 830/7 to compare the performance with an FRG7700, the so called 'frog'. This was at a time when I was chasing some M.W DX across the 'pond'. Using an ATU to couple a 66 foot long wire, through a change over switch so that I could go from one receiver to the other instantly. These days the MW band is so crowded with both low power local radio stations and the QRO european and middle east stations that both time and patience are important in any attempt to winkle out those desperately wanted DX signals. Starting at 11.00 pm my local Red Rose Radio and Radio Trent both on 999 Kc/s, were still causing sideband splatter on 1010 Kc/s with the FRG7700, since this eliminated any chance of my hearing the wanted station 'WINS' from the USA , I swopped over to my 830/7. This was much better , using the slectivity switch I was able to tune to 1010 Kc/s with no QRM from the adjacent channels, there was something there but too weak to resolve, after some minutes and some tweaking of both ATU and 830/7 it was now possible to recognise the accents of the announcer as being 'transatlantic' but no more. By 11.30 signal strength had improved so that despite some slow and deep fading I could identify the break signal between records as that of 'WINS'. A recording of this was made over a ten minute period where the ID was given clearly twice. Back to the 'frog' and no matter how much I tweaked RX and ATU the splatter from the local station was such that I could not resolve an identifiable signal from the stateside station. I did make a recording however as a comparison. Next on my list was 'CJYQ' in Canada, an old favourite of MW DXers. This one is unfortunately sandwiched between two high power europeans. Transmitting on 930 Kc/s it has BRT on 927 Kc/s on the lower side and Bremen on 936 Kc/s just above it. The first is listed as 300 Kw and the second as 100 Kw so I was not too hopeful. Starting with the 'frog' I soon gave up in disgust as the 927 Kc/s signal was really bad , spreading up to the point where with 931 on the readout I could still decipher some ofthe speech ! Of my wanted DX nothing at all . Going over to the 830/7 and doing my tweaking with the ATU it was possible to locate a quiet spot just off the top end of 'BRT' , the signal there was quite strong enough to identify but for some ten minutes no ID was heard. Talk about frust--ration ! What with the fading it was almost midnight before I got the station callsign just before the signal went down into a deep fade. Still it was there and I had got it on tape , when the signal came back up out of the noise I went back over to the FRG7700 but apart the two QRO stations there was nothing . Possibly a directional loop would help in a case like this. Sensitivity on the 'frog' is certainly better than the 830/7 but what good is sensitivity without selectivity ? The way that solid state models overload in the front end is a definite handicap to

DXing. I prefer to quantify the combination of sensitivity and selectivity required as 'hearability' and in this comparison the 830/7 comes out on top . That one late evening produced for me ;- WINS - 930, CJYQ - 1010, WFBL - 1390, and WQXR - 1560 Kc/s. Ken Ricard.

- Built in Crystal Calibrator for your Rx.-

- This calibrator was built for fitting inside my 640 receiver, using the receiver power supply. In my case I decided to use , what else, an Eddystone die cast box. This is about 2 x 4 x 1 inches however any kind of container that will hold the circuitry and fit in the 640 will do. It should preferably be of metal. It could be a tin plate tobacco box as so favoured by QRP proponents or a fabricated box from soldered together strips of double sided PCB. A suitable sized hole should be cut out for the B7G valve holder, another smaller hole for the wires carrying the LT and HT supplies, this should have a rubber grommet fitted. A third small hole about 1/8 " is needed for the RF output probe. A 6AU6 valve was chosen since it was available but others such as EF91, EF92, or 6BA6 are possible substitutes. For the 640 it was decided to use a 100 Kc/s crystal maybe some of us would be happy with a 500 Kc/s 'pip' but it is with the 100 Kc/s to set up the lower band edges accurately on the 640and then to rely on the bandspread tuning. If used for a 770 then a 5 Mc/s crystal will be adequate. In this case the coupling condenser can be reduced from 300 pF to 33 pF. The heater wiring should be neatly twisted together as it leaves the valve socket right up to its other end, an 18" length will be enough at the start to be reduced as necessary upon installation. A similar length should be fitted for the HT plus and minus. A 3" length poking out from the box was enough for the probe. Construction begins by the fitting of the valve socket , the two heater wires are next soldered to the socket pins 3 & 4. The negative HT can be next soldered to a tag fitted under one of the securing nuts for the socket. This tag should also be taken to both the kathode and suppressor pins and the central spigot of the socket. A five way tag strip should be mounted so that it forms a convenient point for component mounting. Depending on the type of crystal it may be soldered into the circuit or mounted in a socket, if an Eddystone crystal can be found it may be fitted in another B7G socket. The components are next wired in , check valve pinouts match up, however 3 & 4 are the heaters on all the B7G types. The supply leads are best enclosed in a suitable length of 'heat shrink' and then terminated in an octal plug, to match the 'aux' supply socket on the rear of the 640. The HT plus will go to pin 4 ,one side of the standby switch, pin 3 &1 are then linked , the heater wires going to pins 6 & 8. One mod is needed on the 640 and that is a link wire across the HT contacts on the standby switch which normally cut HT for transmit. Now when the Rx is

cont; p.17



OSCILLOSCOPE CAMERA ACCESSORIES

POLAROID film pack backs are now available at no extra cost as alternatives to the present roll-film backs fitted to Telford Type A oscilloscope cameras. The 3,000 ASA eight-exposure pack film is said to be quicker and easier to load and manipulate. As each exposure is processed away from the camera, it is no longer necessary to await for the 15s processing time between successive shots, and multiple photography is greatly simplified where banks of cameras are used. Owners of Type A cameras with roll-film backs can buy pack backs separately, for £30. The pack back, when it is used with the Telford slide plate permits the taking of up to 13 exposures on one print. Also available is a high-speed f/1.3 lens, whose wide aperature means that rise times in the order of 10-15 nsec/cm can be photographed, using 10,000 ASA film. Telford Products Ltd., 4 Wadsworth Rd., Greenford, Middx.

WW 316 for further details

POWER TRANSISTORS

FOR use in radar pulse circuits as well as in high-power u.h.f. transmitters, the two transistors 2N5177-8 by TRW Semiconductors Inc. have an r.f. power output of 25 and 50 W respectively. Mounted in a grounded emitter stripline package, both devices will produce their outputs at 500 Mc/s with a V_{CE} of 28 V. The following parameters are common to both types: V_{CBO} 55 V; V_{CEO} 35 V; and V_{EBO} 3.5 V. The dissipation, collector current and base current for the 2N5177 are 33 W, 4 A and 1 A respectively, and the same parameters for the 2N5177 have the following figures, 65 W, 8 A, and 2 A respectively. M.C.P. Electronics Ltd., Alperton, Wembley, Middlesex.

WW 317 for further details

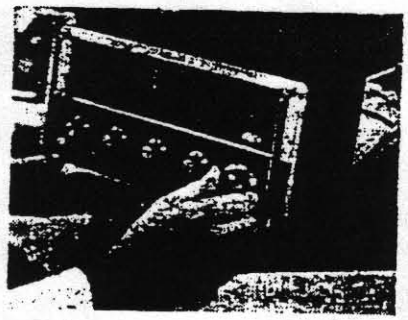
Thermoelectric Generators

A STEADY and reliable electric power output, at working temperatures of up to 300°C, is claimed for the range of thermoelectric generator modules by G. V. Planer Ltd. Exploiting the Seebeck effect, these modules are intended for use in marine and aircraft navigational aids, telecommunications systems and remote weather stations. The generators are constructed from 50 thermo-elements which in turn are produced from *p* and *n* type semiconductor alloys based on bismuth telluride. Although the elements are connected electrically in series, in order to produce the necessary "hot" and "cold" faces, they are placed in parallel thermally. The establishment of a temperature difference between the faces produces a voltage (Seebeck effect), the magnitude of which is determined by the temperature gradient and the matrix configuration. The array is encapsulated to give a monolithic, mechanically strong assembly which is capable of operation at elevated temperature. Both types have a maximum hot sink temperature of 300°C and an open circuit voltage of 3.6 V for a temperature difference of 200°C. Type TPG/205 has a matched load output of 750 to 900 mW, and Type TPG/210 has a matched load output of 400 to 500 mW. G. V. Planer Ltd., Windmill Road, Sunbury-on-Thames, Middlesex.

WW 318 for further details

Broadcast Receiver

COVERAGE of the long- and medium-wave broadcast bands and continuous coverage of the shore-wave bands down to below the popular 16-metre band, is provided by the Eddystone EB36 solid-state broadcast receiver. It is completely self-contained, having its own audio amplifier stages and loudspeaker, but an audio output is available for an external tape recorder of hi-fi amplifier. Battery power supplies are provided within the receiver unit, to make the complete receiver independent of any external supply. In this way, it can be operated in a wide variety of portable roles, including road vehicles, small boats and even light aircraft without any additional facilities apart from an aerial. An a.c. mains power unit is available to replace the battery in the receiver. The EB36 incorporates the well-known Eddystone tuning control, with a high tuning ratio to enable precise frequency settings to be obtained. The tuning control is loaded with a heavy flywheel, which makes it possible to spin the dial to cover large changes in frequency very rapidly. Five frequency scales are provided, covering long-wave, medium-wave and three short-wave bands (from 1.5 to 22 Mc/s). An additional scale, calibrated in arbitrary units, can be used in conjunction with a small vernier dial to provide a very precise definition of points on any of the five frequency scales. The price of the EB36 is £54 5s 7d. Eddystone Radio Ltd., Eddystone Works, Alvechurch Road, Birmingham 31.



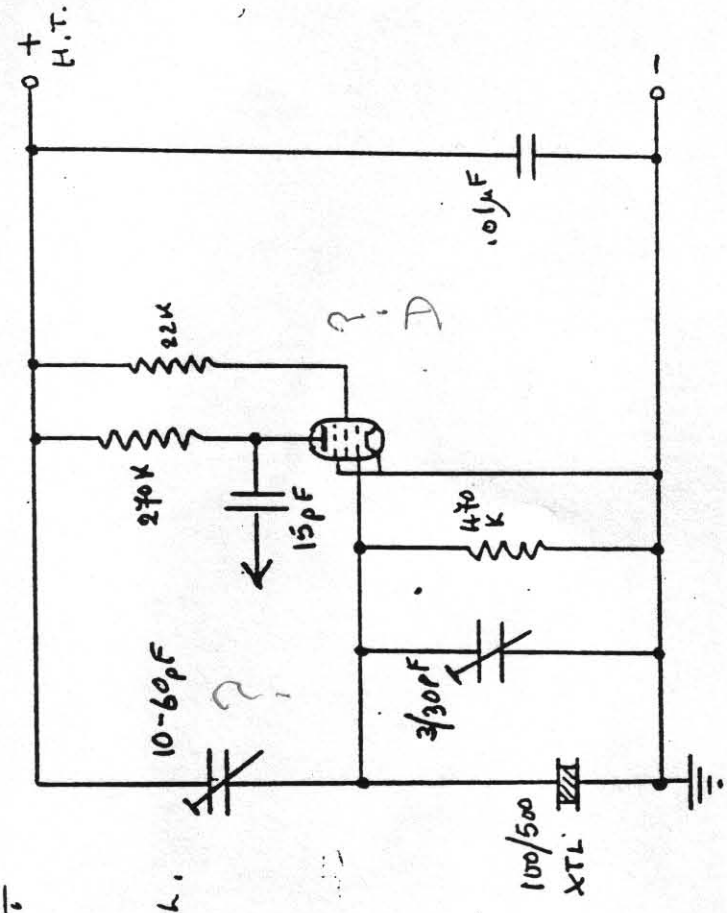
WW 319 for further details

Component Packs

FIRST two in the new range of component packs presented by Peak Sound, designed for use with the "Cir-Kit" system, are available at 15s each. Each pack contains full building and layout instructions. Pack No. 1 contains 15 components to build any one of a range of five different circuits; a high input impedance pre-amplifier with a gain of x 100, a multiple output signal injector, a multimeter high ohms range extender, multimeter low current range extender, and a mono pre-amplifier for moving coil microphones, giving a gain of x 100. Pack two contains components to build various types of pre-amplifier and multimeter range extenders. Other packs contain components for building amplifiers, pre-amplifiers, and power packs. Peak Sound (Harrow) Ltd., 10 Asher Drive, Ascot, Berks.

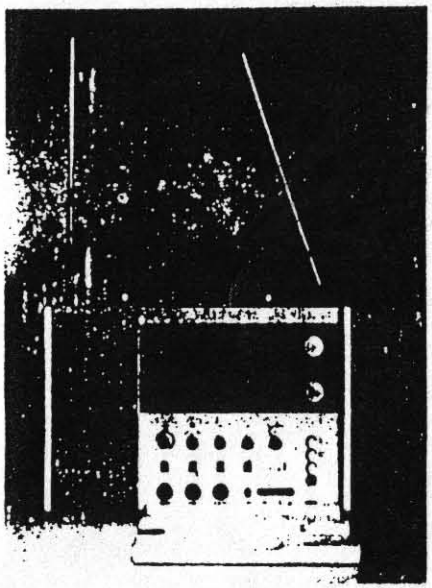
WW 320 for further details

put to standby it will continue to operate but also the calibrator will be switched on giving its 'pips' as required. No irreversible mods have been done which will reduce the resale value of your 640. The unit was mounted on the inside back of the casewith a large dab of epoxy resin, the RF output being quite enough to give 'pips' up to the 30 Mc/s point. (thanks for the above Peter, have not tried it myself though, any member who does build this can write in and let us know . It can be used on most models except the AC/DC types.)

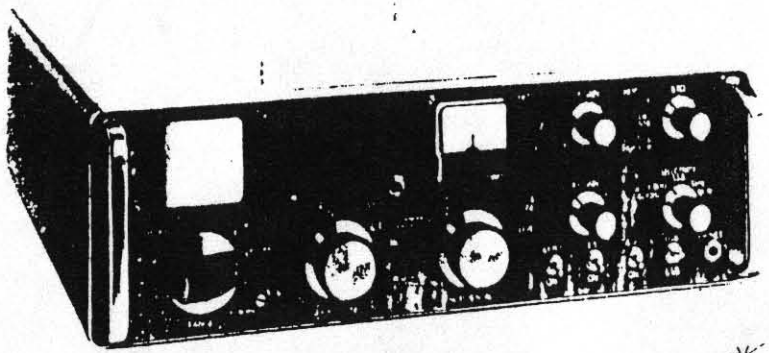


"CHINESE COPY" CALIBRATOR FOR 640
AS BUILT BY PETER MILLS.

1. VALVE TYPE 6AU6
1. B7G VALVE SOCKET + SCREEN CAN.
1. DIECAST BOX.
1. 100 OR 500 Kc/s XTL.
1. 270K 1/2W.
1. 22K 1/2W.
1. 470K 1/2W
1. .01μF 350 V.W.
1. 3/30 pF TRIMMER.
1. 10/60 pF "
1. 15 pF MICA.

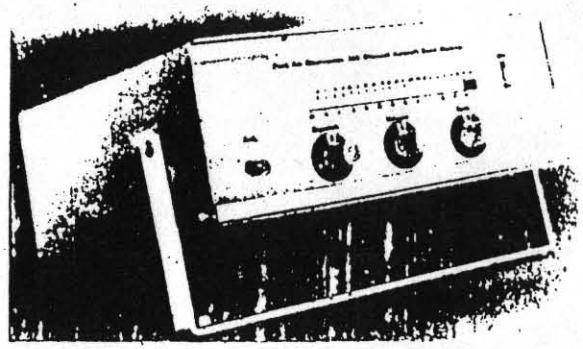


Braun T1000CD (portable)

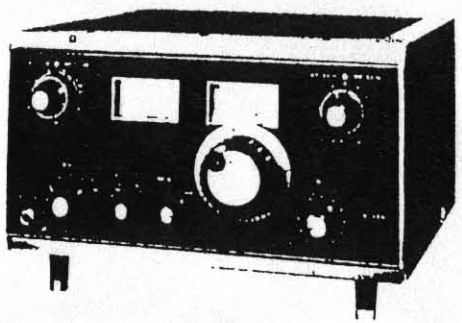


Eddystone EC958

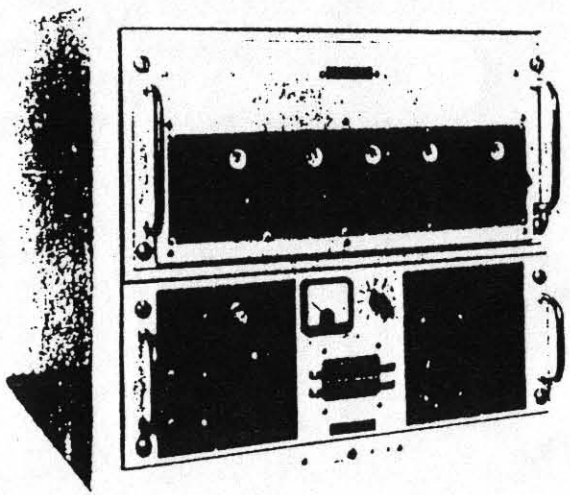
Plessey PR1553



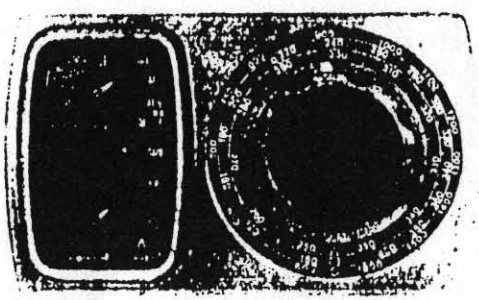
Park Air S Line aircraft monitor



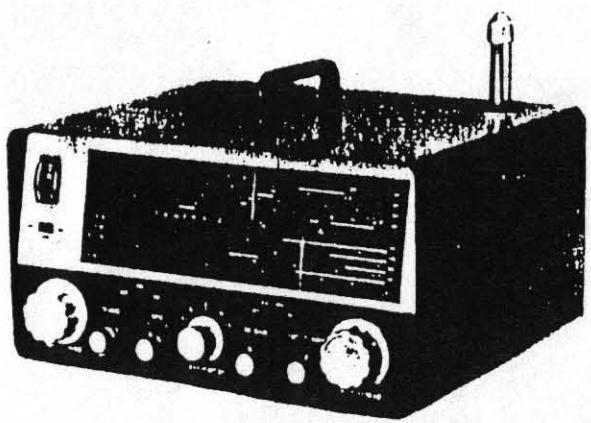
Trio JR-310



Marconi N2020



Brookes & Gatehouse Homer K Mk2



Heathkit GC-1U "Mohican"

- FEATURED RECEIVER THIS ISSUE. -

TECHNICAL DATA

770R Mark I.

GENERAL

Frequency Coverage.

The complete coverage is from 19 Mc/s to 165 Mc/s., the individual ranges being as follows:-

Range 1	114 Mc/s - 165 Mc/s	Range 4	39 Mc/s - 54 Mc/s
Range 2	78 Mc/s - 114 Mc/s	Range 5	27 Mc/s - 39 Mc/s
Range 3	54 Mc/s - 78 Mc/s	Range 6	19 Mc/s - 27 Mc/s

Intermediate Frequency.

The Intermediate Frequency is 5.2 Mc/s with variable selectivity. The BFO is pre-set to give a beat note of 1000 c/s.

Valve Complement.

The valves and germanium diodes used and their functions are as follows:-

TABLE 1.

Circuit Ref	Type	Circuit Function
V1	6AK5 or EF95 (CV850)	RF Amplifier
V2	6AK5 or EF95 (CV850)	Mixer
V3	6AK5 or EF95 (CV850)	Local Oscillator
V4	6BA6 (CV454)	1st IF Amplifier
V5	6BA6 (CV454)	2nd IF Amplifier
V6	6BA6 (CV454)	3rd IF Amplifier
V7	6BA6 (CV454)	4th IF Amplifier
V8	6AU6 (CV2524)	FM Limiter
V9	6AL5 (CV140)	FM Discriminator
D1	GEX34 or CV448	AM Detector
V10A	6AL5 (CV140)	AGC Rectifier
V10B		Noise Limiter
V11	6AU6 (CV2524)	Meter Control
V12	6BA6 (CV454)	Beat Frequency Oscillator
V13	6AU6 (CV2524)	Noise Amplifier
D2 & D3	GEX34 or CV448	Noise Rectifier
V14A	12AU7 (CV491)	Muting Control
V14B		1st AF Amplifier
V15A	12AU7 (CV491)	2nd AF Amplifier
V15B		Phase Splitter
V16	6AM5 (CV136)	Push-pull AF Output
V17	6AM5 (CV136)	
V18	VR150/30 (CV216)	Voltage Stabiliser
V19	5Z4G (CV1863)	HT Rectifier

Input and Output Impedances.

Aerial Input		75 ohms (nominal) unbalanced.
Audio Input (P.U. Terminals) . .		0.1 Megohm (approx).
Audio Output	Loudspeaker	: 2.5-3 ohms.
	Lines	: 600 ohms balanced or unbalanced.
	Telephones	: Nominally 2000 ohms but lower impedances can be used satisfactorily.

Power Supply.

Mains Input . .	100/120 volts or 195/250 volts AC (40-60 c/s).
	NOTE: Transformers suitable for 25 c/s operation can be supplied to special order.
Consumption . .	90 volt-amperes (approx).
Fuses	Both sides of the mains input are fused with standard cartridge type fuses rated at 1 Amp each.

PERFORMANCE

Sensitivity.

Better than 5uV for an output of 50mW with a signal modulated to a depth of 30% (400 c/s) and a signal-to-noise ratio of 15dB.

Image Rejection.

Of the order 20dB down at 165 Mc/s rising to better than 50dB down at 25 Mc/s.

Selectivity.

The following Table gives typical figures for the overall bandwidth at points 8dB and 40dB down relative to the response at 5.2 Mc/s.

TABLE 2.

Mode Switch Position	Bandwidth	
	8dB down	40dB down
CW & AM	15 kc/s	100 kc/s
NFM	40 kc/s	160 kc/s
FM	150 kc/s	350 kc/s

Frequency Stability.

Local Oscillator Thermal Stability

At all frequencies covered by the receiver, the drift due to temperature changes in the Local Oscillator Stage does not exceed 0.003% per degree Centigrade.

Local Oscillator Voltage Co-efficient.

A 5% change in mains voltage produces a frequency change of less than 0.003% regardless of frequency.

Noise Factor.

The following figures are indicative of the noise factor achieved on each range.

Range 1.	Better than 14dB	Range 4.	Better than 6dB
Range 2.	Better than 10dB	Range 5.	Better than 5dB
Range 3.	Better than 8dB	Range 6.	Better than 5dB

IF Breakthrough.

Of the order -80dB on Range 6 rising to -100dB on Range 1.

AGC Characteristic.

The audio output level does not change by more than 12dB when the input is varied 70dB above 10uV.

Muting Level.

The Muting adjustment can be set so that a signal of 5uV will release the Muting Control circuit.

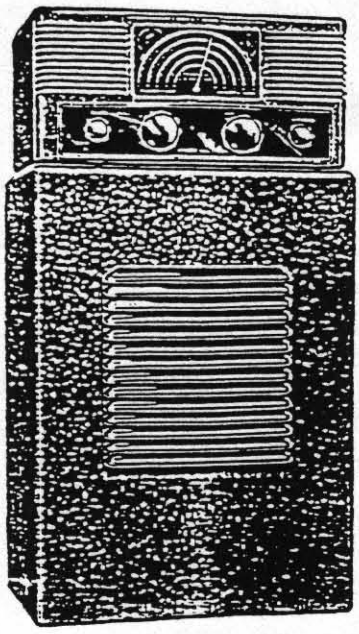
Audio Output and Response.

The push-pull AF Output Stage will deliver up to 3 watts of audio power at the 2.5 ohm terminals. The audio response of an average 'S770R' is level within 2dB from 100 to 10,000 c/s.

AF Sensitivity.

An input of 15mV at the 'P.U.' terminals will produce an output of 50mW.

This model was produced in many variants to suit the dept or Govt agency involved , it is known that many of these sets went abroad. China, the USA, the USSR, India, South Africa are but a few of the countries receiving them. At the time of manufacture the 770 was the only commercially available,fully tunable, VHF receiver in the world. Uses included VHF comms, surveillance monitoring, weather sonde tracking, sputnik tracking, antenna field strength tests, university lab measuring and many others. The number of variants so far traced is 27 of which I have but 9 in my collection.



OTHER EDDYSTONE PRODUCTS

All Eddystone Receivers are sound engineering jobs. They are robustly constructed and built to stand up to hard service. Each receiver is fully tropicalised and can be used with confidence in any part of the world.

You or your friends may be interested to know what other types of Eddystone Receivers are available and below you will find brief details of two current models. We shall be happy to furnish full details upon application. Registered Eddystone Agents exist in many parts of the world and interested parties can be put in touch with one or more of them.

THE EDDYSTONE "659" EXPORT BROADCAST RECEIVER

A high quality broadcast receiver, complete with a specially designed high fidelity Console Speaker. First class performance on short and medium waves. Coverage identical to that of the "670," as also is the finish, colour, size, etc. Six valve (plus Rectifier and Tuning Indicator) superhet circuit.

Available in two models — one for A.C. operation (110 and 200/250 volts), the other for 6 volt battery operation.

EDDYSTONE SPEAKERS

FOR COMMUNICATION AND EXTENSION PURPOSES.

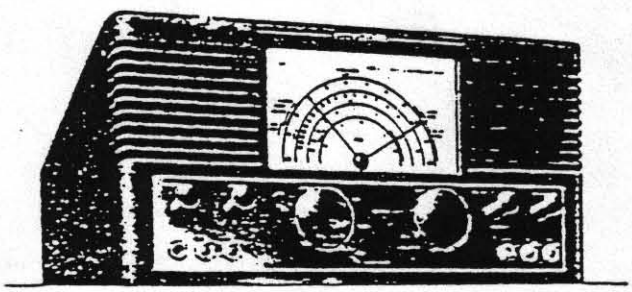
Two sizes of Speaker are available. They are particularly recommended for use with Eddystone Receivers, which they match physically and electrically.

The Cat. No. 652 (Black or Grey) has an overall diameter of 5", the unit being a 3½" one, and is suitable for communication purposes.

The Cat. No. 697 is 7" diameter and is fitted with a 5½" unit. This Speaker is recommended for broadcast reception. Alternative finishes can be supplied (Cat. No. 688 Black ; Cat. No. 698 Grey).

Construction of both Speakers is similar. The housing is an aluminium diecasting, fitted with a special baffle to ensure maximum performance.

THE EDDYSTONE "640" COMMUNICATIONS RECEIVER



A general purpose 8 valve (plus rectifier) communications receiver with continuous coverage from 31 to 1·7 Mc/s. Fitted with R.F. stage, Electrical Bandspread, B.F.O., Crystal Filter, two I.F. Stages, Noise Limiter, etc. Capable of very good performance.

For use with A.C. mains (110 and 200/250 volts). By the addition of the Eddystone Cat. No. 687 Vibrator Unit, the "640" may be operated equally well off a 6 volt battery. Separate matched "S" Meter available.

STRATTON & Co., Ltd., West Heath, Birmingham, 31

Cables : "STRATNOID" Birmingham — Telephone : PRIory 2231-2-3-4

HELP !!! - Can anybody identify the Console type speaker as used with the 659 above ? It is not in my catalogue.

Thanks in advance.

- 659 / 670 models.-

- A letter from Ross Paton in New Zealand telling us about the model he has got hold of out there. The dial scale says model 659, the small plate behind the dial backing plate, bottom left hand corner says 659/670, and the model / serial plate at the rear has simply got the serial number KC 2195, the model space has been left blank. The original mains dropper and rectifier have long since gone and been replaced by a lashed up dropper cum silicon diode affair circa late 50s , early 60s if the RCA diodes are anything to go by. As Ross has access to another 659 he is going to do some detective work and try to sort this mystery out, and hopefully keep us in touch with his 'mystery' model. He does mention the problem of hum when using a transfo to replace burnt out and unobtainable dropper resistors on these AC/DC types. Have you not heard of the trick used in the domestic repair trade Ross ? A one megohm, half watt resistor direct from the anode pin of the out put valve to the anode pin of the audio valve ! Works wonders, in fact if you do it once you will kick yourself for not having tried it before. Ross also mentions his MIMCO type 2245A which is in fact a 670C.

- Ross mentions also his 680/2 , serial number FA0059 saying that he had shorts in the trimming condensers on this model , he used modern ceramic types as replacements. That problem of trimcaps growing 'whiskers' is a common enough one but usually this is a symptom of use or storage in area of high humidity. I had it on a rather nice 504 model once and took months removing each trimmer cleaning it up and replacing each one. Ross also mentions my trick of removing DC from AF gain control by inserting a condenser and half meg resistor. His suggestion of checking the magazine Television for adverts where it may be possible to get steel drive cord to use on our Eddystones, well this idea came in also from a UK member who has got some in that way. There is also the problem of silver mica condensers and their habit of growing internal whiskers. The cure seems to be to replace them with ceramic types.

- Bits on offer ? -

- The recent mail has included a letter offering several items which could be of interest to members, first is a coil unit for the model 750, that is the full Rf coil pack ! also from the same member is the offer of a case for the model 770 in good condition. Contact EUG in first instance.

- Valved Projectes.-

- Revival ? Well most of the large circulation magazines have begun to publish valve projects in recent months. There is far more interest in hollow state stuff than many people imagine. This could well be due in some part to the increasing complexity of modern solid state equipment. One of our members has just recently built a 3 valve convertor for two metres in side his 640. He is now building a similar six metre convertor to fit inside a second 640 which is as yet only partially restored. Dave, another member has a 6V6 - 807, C.O - P.A transmitter used on 80 metre C.W along with his 888A receiver. The Tx was built two years ago from a magazine article dating back to 1952. No other equipment apart these two items is in his shack, he has over 100 countries worked in this time with never more than 25 watts to a dipole. Another member has a 38 set, the Tx part is used with his EA12 , no solid state equipment is owned or used at his station. I know of quite a few members who build add ons from the circuits published in the older copies of the ARRL Handbook. The books are a mine of info on valve theory and practice and can be found at most of the rallies for between £3 to £5 each. by S.Davies.

- Incoming mail ;- Charles Whistlecroft tells us about his 880/3 which is badged as a Marconi H2301/01, and his 830/9 which as with most of this variant has had the Piccolo filters removed , no reason of course why he cant fit a crystal for a normal narrow band CW filter as others have done, problem is in finding one ! If the micro switch has gone too, a long lever type will do the job. In the EUG copy of the /9 manual there is a key to the voltage points mentioned and they are marked on the /9 diagram. Our copy of it is a full size factory blueprint, nobody else seems to have a schematic of this version. As to getting hi-volts electrolytics then I always stock up on them at the various rallies, buy more than you actually need, because you will need them later, Murphy says so ! James Reilly has written to say that his recent listening has included Honolulu & Tokyo ATCC on 11.384 Mc/s. The former was heard at 14.30, the latter between 0700 and 0900 GMT. He laments the passing of famous names of past builders of the hollow state receiver. Don't we all ? If Eddystone could compete then I imagine that they would still build them, but to do so they would need a guaranteed large market. Letter from Tony Duke, G4IOT, saying that as a former radio service engineer he finds the news -and views in the newsletter quite interesting, bringing back many memories. Wonder whether Tony would help out any members in the Folkestone area who need some technical know-how ? EUG members do seem to be helping out now in other parts of the U.K as we have had letters about meetings to cure Eddystone faults in Glasgow, on Merseyside, in Wales, and in Birmingham. Nice to hear this.

- Well that seems to be it for this issue, time for me to start on the next one ! No peace for the wicked ! Have any of you noticed that with this issue we have already had 50 percent more pages than in the six issues of last year ? All due to YOU the members , it took a bit of going but the amount of stuff you are all sending in is phenomenal, and from all over the world , Australia , New Zealand, Norway are the most regular. Thanks to Bob, Ross, Bryan, Tor , Mervyn, and to P.J. Roberts thanks , you will get your stuff back when it is copied. Pat Martindale wants to see the 750 featured, patience Pat coming soon as the cinemas say. Bill Gibson & Pete Chisholm have met to their mutual advantage, as have various other members at the recent rallies, the Logo Badges seem to be the best idea yet. (can't remember whose idea it was , maybe he ought to have got a free one !) James Reilly writes in with his latest listening to ATCC comms, more in later issue. Pat Boone wrote saying thanks for quick sale of his 770 as per ad last issue, went in 3 days. Iain Stevens writes to say that the basic valve theory he learned in the RAF years ago is coming in useful with his 730/2. H. Kemp says he now has an EA12, a 940 and an 830/2 nice start to a collection that. Afew late ads to follow but for now I shall go QRT , just hoping the XYL can cope with her part of the job ! It is a labour of love with Kathy, hard labour I guess.

73,

Kathy & Ted.

...---... S O S. wanted 888 or 940 model by member P. Chisholm. 141 Stanmore Rd. Mount Florida. Glasgow. G42 9AN.

...---... S O S. James M Thompson. GM8GUX. 2 Wilton Hill. Hawick. Roxburghshire. TD9 8BA. wants an 840A or C model.

... ---... S O S. D.W.Blanchard wants spares for his 640 or would be interested in scrap cannibalised 640. write to 141 Dunes Rd. Greatstone on Sea.New Romney .Kent .TN28 8SP.

P.S. By way of a prophecy I guess. I commented in the issue 7 about an increase in queries re the 990R, 7 letters in a few weeks. Then AJH advertised them for sale ! Honest we did not know in advance. It seems that several members were quick enough to get one from AJH in Rugby though. Keep yours eyes on their ads in Radcom in future, I shall too.

HOME RADIO OF MITCHAM

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Phone: MIT 3282
Shop hours 9 a.m. to 6 p.m. Wed. 9 a.m. to 1 p.m.

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Mullard "5-10" 5 valve 10 watt 12/6.
Mullard 3 watt ECL86 amplifier 7/6.
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Can be used in pairs for stereo.
PLEASE ADD 1/- post.

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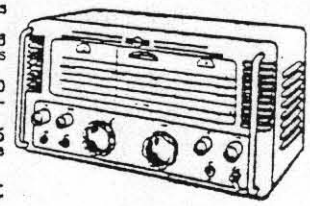
We carry the full range of the famous EDDYSTONE Receivers and Short-wave Components.
670A 5 valves 5 waveband £30.17.6 (Overseas export price £26, plus 30/- carriage).
840C 7 valves 5 wavebands £58.0.0 (Overseas shipping and insurance quoted on request).
940 11 valves 5 wavebands £125 (Overseas shipping insurance quoted on request).
Full Specifications on request. Special attention and priority for overseas orders.



GRUNDIG JACK PLUGS

Brand new Grundig type J2 jack plugs will fit standard jack sockets as well. Normal price 5/-. Our Special Price 1/6 each. Add 6d. post to order. Special terms quoted for quantity.

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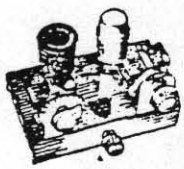
GLOBE KING 100A



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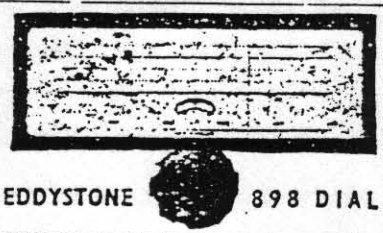

EDDYSTONE 898 DIAL

Without doubt the finest slow-motion dial assembly available. Precision gear drive gives velvet smooth 110 to 1 reduction drive with vernier logging scale. Size 9¼ x 5¼in. Full details and specification on request. PRICE £3.11.4, post 1/6 (Overseas post 7/6).

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This is the most popular of the new GOODMANS high fidelity Loudspeakers. 10in. diameter with rigid die-cast chassis and special high flux Feroba 11 magnet system. Will handle 10 watts and has a frequency response from 40 to 16,000 cycles. Ideal for all domestic high fidelity equipment. Available 15 ohms only. Replace that old speaker with this new space age unit and hear all the notes that you are missing, and thrill to a new realism in audio. PRICE 6 GNS. plus 1/6 post.

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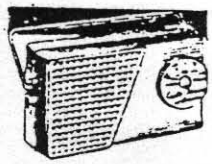
THE NEW "COSTA BRAVA"

42/6



No earth or aerial required. All-transistor Radio. Revolutionary INTERNAL FERRITE AERIAL and moving coil speaker makes this sensational pocket-size radio the best money-saving bargain of all time. Powerful, superb tone and clarity, ensures perfect reception for all your favourite programmes. Completely portable only 5¼ x 3 x 1¼in. Two-tone case. Anyone can assemble with our simple PRINTED CIRCUIT PLAN. Send 42/6, plus 2/6 P. & P. (C.O.D. 2/- extra). Satisfaction Guaranteed. (All parts available separately). FREE HIGH SENSITIVITY HIDE-AWAY EAR-PIECE GIVEN WITH EACH SET.

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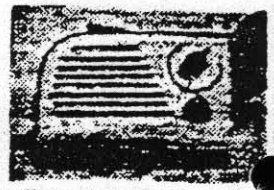
BIG PROFITS FOR YOU IF YOU BUY NOW!

Made to retail at 7 gns. you can now buy this famous Twin-gong Alarm for only 37/6—but only if you act now . . . stocks are strictly limited. Easily installed and operated. Switches on or off at any time. Fantastic FINAL reduction to clear (minimum order of 3). Car. Free. Free literature sent with each alarm. **37/6**

THE NEW 4-STAGE "MINUETTE"

32/6

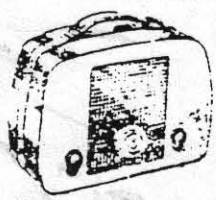


Build this newly-designed "MINUETTE" 4-STAGE transistor set in very strong ready drilled ULTRA-MODERN CASE, size only 6x 3¼ x 1in. Uses three transistors and diode and SELF-CONTAINED LOUDSPEAKER. Very sensitive, ideal for office, bedroom, holidays, etc. Months and months of listening off 1/2 battery. Can be built FOR ONLY 32/6, including PROPER CASE, miniature speaker, etc. SIMPLE AS A.B.C. PICTORIAL STEP-BY-STEP PLANS etc., plus post and packing 1/6 (C.O.D. 2/- extra). Parts sold separately, priced parts list 1/-.

FREE HIGH SENSITIVITY HIDE-AWAY EAR-PIECE GIVEN WITH EACH SET

THE MINUTE TRANSISTOR RADIO MIAMI

ONLY 32/6



Unbelievably small—Outrageously cheap. You will be amazed at the fine quality of tone and volume of this great little radio. Only a fantastic 3¼ x 2¼ x 1¼in. The MIAMI will bring you great entertainment for months on a 1/2 battery. Simple assembly plan with each set. ONLY 32/6. YES 32/6!

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