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AMATEUR RADIO SOCIETY**

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AUTUMN 1974

ROYAL SIGNALS AMATEUR RADIO SOCIETY
(AFFILIATED TO THE RADIO SOCIETY OF GREAT BRITAIN (RSGB))

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HEADQUARTER STATION : Normal call-sign - G4RS. Special call-signs : GB3RCS, GB2AAD, GB3AAD
(Aldershot Army Display) or to suit event. ACF/CCF call-sign : G4CCF. Locations ::
G4RS at Blandford Camp, GB2AAD and GB3AAD at site of Aldershot Army
Display. G4CCF with G4BTW. Blandford Camp : Grid Reference (1" Ordnance
Survey Sheet No.179) 921091. QRA Locator : YK10e. WAB Area - ST 90.

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Note pages 31 to 43 were loose 'Flash' attachments to the AUTUMN 1974 'Mercury'

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G3DPS

'Mercury', like some trains, sugar supplies and OSCAR VII, is a little behind schedule. As it is doubtful if another issue will reach members before Christmas may I take this opportunity, on behalf of the President, Council, HQ Staff, etc., of wishing you and yours the compliments of the Season. If we were allowed only one wish it would doubtless be for good health, for two we would add good luck and if our Fairy Godmother was in a really generous mood and granted three, the third would be, perhaps, for better band conditions!

1974 has been a good year in general for the Society despite Power Cuts, Petrol Prices, Shortages and (closer home) paper shortages, manpower shortages and lack of sufficient hours in a day. However, the RSARS membership list is ever increasing and the list of members call-signs makes impressive reading.

However, nothing is perfect, and, despite some improvements, new ideas, etc., HQ is the first to realise that much more could be done Society-wise. Manpower is our biggest problem at present but things will no doubt improve. For those who only read as far as page 1, I must mention that recent efforts have included the following : The Great Circle Bearing and Distance Charts are now available and many have been produced and sent to members, the Non-licensed members now have their own Section, the Discount List for RSARS members has had a number of Suppliers added, Ray is busy with the new RSARS Awards, and several other improvements are planned. It is hoped that a new membership list will be published in the New Year.

Earlier this year a 'trial run' was completed putting 'Mercury' on tape for our 'White Stick' members. This proved successful but the work-load proved too much for HQ. Since then Dave, DA2PS, has taken on this chore and, if all goes well, the 'spoken word' should soon be circulating again. However, HQ would like help on two points for this project. Firstly, Dave is short of empty 5" reels. If any member has 5" reels to spare for this very worthy cause please send them to :

WO I (F of S) D. SUGDEN, 'H' TROOP, 15 SIGNAL REGT, DANNENBERG, B.F.P.O. 27.

Secondly, HQ would like to compile a "Tape Distribution List" for recorded "Mercury's" and if you know anyone who would like to be included on the list please let HQ know. It is appreciated that other ailments besides "White Stick" may benefit by a tape so all names are welcome. HQ are willing to refund any postage charges on empty reels. Those promised by G3DPS all turned out to be cracked due to bad storage and/or transit.

The recent acquisition by HQ of the 75R Teleprinters has shown that the RSARS has a lively interest in RTTY. Don't forget the RTTY Nets (see back cover) and certainly don't forget the RSARS Le Touquet Trophy on the second full week-end in March. This one is for the RTTY and the CW boys. Details from HQ for an SAE.

Whilst on the subject of Awards and Contests, Members are asked to note that a couple of small amendments have been made to the RSARS VHF Contest rules. Although mentioned elsewhere, a reminder here might not be amiss. In the first line of the rules please delete 144 MHz and insert 70 MHz (i.e. you can now include 4 Metres) and in the second line please add the word "Full" after 'second' and 'week-end' making it read "held on the second full week-end in September", i.e. if September 1st is a Sunday that is NOT a full week-end.

Getting back to 'Mercury', we still have a few items to fill forthcoming issues, but material is always needed. Remember, it doesn't have to be highly technical, but we are interested in such things as personal experiences, member-designed equipment, antennas and the results obtained with your 'Special' shack ancillaries, in fact anything which might be of interest to other members. We have members active from Top Band to 10500 MHz, on all modes AM, SSB, FM, SSTV, CW, etc., so the choice of subject is wide.

Although the Winter months are now upon us, let us not forget the coming Summer. How about a RSARS Get-together, perhaps in the Midlands. Maybe at one of the Rallies or even "on our own". Perhaps a days gathering followed by a Dinner, etc. At present this is only a suggestion and could need a lot of thought. The biggest point, perhaps, is that it would have to be organised by 'volunteers' in the area chosen. Thoughts on this subject would be welcomed at HQ. Please do not leave any thing to the last minute. These things take a lot of organising.

Again, Seasons Greeting

Jack G3DPS

FULL LETTERS.

From: W. BEVAN, G3DBU/RSARS 130, 10 Hilltop Crescent, Harrogate, HG1 3BZ.

".....Just browsed through 'Mercury'. Would like to make a comment or two. Reference the minutes of the A.G.M. and Ken's (G2DX) comment. I agree with his sentiment but must ask a pertinent question "What British equipment?". He has only to listen to the comments on 80 or look a little further on in his 'Mercury' (VQ9HCS's article) to see the adverse comment on the only British (HF SSB) equipment that is obtainable by amateurs in this country. We at G3HKR are only too aware of the deficiencies in British equipment - the Club has a 2 Metre TX which has never worked from the day it was bought in 1973. In fact, it has just been returned by the manufacturer supposedly in working order but it won't put a bleep into the aerial - oops, sorry, antenna. So where does one go from there?

I have a transverter (British built) which is the bees knees, but I cannot put out a signal with it without a primemover and I believe in making sure that the primemover is everything that it should be, hence foreign equipment.

One can go on in this vein ad-infinitum, but I will desist.

G3HKR is still struggling to get out on Two. John (G3FMW) and I pushed out a CW signal on Wednesday last (2nd October) from 1215 to 1245 hours hoping to raise Cyril (GW3ASW) or any other lonely ham! - no joy, but we will keep trying. I am also active on Two from the home QTH, so how about it chaps? - HARROGATE - slap bang in the middle of the country, 205 miles or less (if you are a crow) from the smoke. Both G3DBU and G3HKR willing to have a QSO, with 'DBU on SSB or CW any freq. G3HKR is rock-bound at present on 144.2996 give or take KHz or two on AM or CW.

John, G3FMW, has just finished an Electronic Key and is looking for QRP CW contacts, any speed from 10 to 110 w.p.m.!

Was down at Blandford from 30th Aug to 2nd Sept and went over to G4RS on the Saturday afternoon and Sunday morning but the place was locked up!....." 73 de Bill.

(Sorry we missed you, Bill, unusual for no-one to be 'on parade' on both days. If other visitors find themselves "in the same boat" please contact the Guard House and ask them to ring me on Blandford 4365 - Ed.)



From: Mrs Brenda C. Lomax, Panorama, Ferndale Road. Torquay, TQ2 6JT.

".....It is with a very great sense of loss that I have to report a "Silent Key", my husband, Donald G. Lomax, RSARS 0829, G8AHH. He passed away at his home on 20th August and only 12 days after moving to this QTH. He was not very active at our last QTH due to its location (in a valley) and was hoping so much to achieve good results on SSB at our new home. We have a teenage daughter and a 9 month old baby son - the latter making it even more of a tragedy as he was so looking forward to training the " junior op".

My husband was very proud to have served with Royal Signals and to be a member of your society.

Thanking you sincerely for the pleasure that "Mercury" gave him.

Yours Truly, Brenda C, Lomax.

(A letter of sympathy on behalf of the President, Council and all members of RSARS has been forwarded to Mrs Lomax, together with an offer of whatever help she may feel we may be able to give. 0829 will, in future, be listed as a "Silent Key" No.)



FULL LETTERS - Contd.

From : A.H. Hammett, G3VWK/RSARS 0423, Rosehill, Ladock, Truro. Cornwall. ".....I was very interested to read "Don't read this, It's Top Secret" in the Spring issue of 'Mercury'.

Probably being one of your more insane members, stemming, no doubt, from before the last War, and various bangs on the head but from impecunious school-boy pre-war days, I have always had a deep interest in QRP and telephony working.

This is one reason for G3VWK being heard on 160 Metres, nearly to the exclusion of other bands and sometimes working a few milliwatts and, like yourself, getting a couple of 1,000 miles-per-Watt Awards endorsed 160 Metres SSB, 6,650 and 15,300 miles per Watt respectively.

I must admit that these were arranged contacts to a certain extent but the first was 2-way QRP at 20 milliwatts.

However, what gave me a lot more pleasure recently was a couple of contacts with another RSARS member, VQ9HCS on Astove Island, when we both worked on 21.2 MHz without prior arrangement for a period of over half an hour with 5 Watts PEP, - only 1,056 miles per Watt but a far greater achievement and for which we have both attained a 1,000 Miles-per-Watt Award.

So it can be done and in competition with high powered stations too, with a little more patience and a lot more satisfaction, providing that you have a reasonable aerial (in this last case. a TA-33 at 60 feet at both ends) and also an electrically quiet location in both cases.

I would like to add to the plea for more people to go QRP especially for local contacts where the additional power does not add to the intelligibility but only to the QRM, and what one very ordinary amateur can do so can another.

There is an International QRP Club of which I represent the 'G' stations, and details can be obtained from me or from WA8CNN. Hugh Aeiker, 929 South Park, Charleston. West Virginia, 25304, U.S.A., if anyone is interested.

They call QRP anything under 100 Watts but the big interest seems to be in flea-power CW at the moment with Solar Cell transmitters or even, in one ease a bacteriological cell and a few microwatts!"

73, Yours, Bert. G3VWK

(Several RSARS members are now operating QRP including G2HKU, G3DNF, G3FMW, etc., and RSARS are happy to encourage this type of operation. Ray, G3EKL, has risen to the occasion with the introduction of the QRP Award. If members feel that a RSARS QRP Section would be beneficial (and providing a member or members, is/are forthcoming to organise same) HQ is quite prepared to assist where possible and to allocate space in 'Mercury' for 'News and Views'. - Ed).

From: David M. Hogan, RSARS 800, "SAMOSIR", 7 VALLEY VIEW, LANDKEY, BARNSTAPLE, N. DEVON

".....may I formally record my appreciation for the very warm welcome afforded to me on the occasion of my visit to RSARS HQ on Friday last.

Considering that I am a mere SWL and to the best of my knowledge merely a number on your list. I was more than surprised at the hospitality you showed to me. Sgt Worth (G3ZKA - Ed.) was most helpful in sorting out my teleprinter problems and the conducted tour of HQ left me with plenty to think about. None the least. I might add, the question as to how, with all the Technology surrounding the Mecca of Telecommunications - Blandford Camp - I find a certain individual who shall be nameless searching for below ground cables with two pieces of bent welding rod after the fashion of a water diviner! I cannot help but wonder if, behind the complicated fascias of the gigantic transmitters and receivers you have, there hides a cats whisker and crystal!!

Now armed with my quota of two teleprinters for a Fiver - what value! - and all the many tips and hints passed on to me by you and your able staff I am spurred on to enter the mysteries of RTTY. Once again. many thanks.

FULL LETTERS - Contd.

Now for the Commercial!, Members may be interested in the following facilities that I can offer: (a) Test Meter and Instrument repair and calibration service, and (b) the supply of Surplus Radio and Electronic equipment. The attached sheets indicate the rates charged for meter repair and service, including calibration. The work is carried out by trained technicians who, until recently, were engaged on MoD contracts for the same service. Any member wishing to avail himself of the service should pack the instrument well, and post to me together with Postal Insurance (normally 10p) and address the parcel as follows :

M.S.A., Dept. RSARS, 7 Valley View. Landkey, Barnstaple, North Devon.

Any correspondence concerning the instrument SHOULD NOT be enclosed in the parcel but sent under separate cover to the same address, (THIS POINT IS MOST IMPORTANT), together with his cheque or Postal Order for the requisite sum. Where a particular instrument does not appear on the list a quotation will be given. However, in the case of quotations not being accepted and where instruments are asked to be returned, it will be necessary to ask a small fee to cover handling.

I pay regular visits to the MoD auctions and would be pleased to receive members enquiries for Government Surplus radio and electronic equipment, SAE please or I cannot guarantee an answer.

Finally, a request, I am looking for the following and would be pleased to hear from anyone who can oblige. A terminal unit suitable for the Creed 75R receive-only teleprinter, and a P.S.U. for a Marconi CR-300, any of the following Military Sets C11-R210, C12, C13, R209, A41, B47, B48, C42, C45, 19 Set Mk III (bearing English and Russian markings and manufactured by RCA). All letters answered.

73 David M. Hogan, RSARS 800.

(I feel I must point out that no-one is "a mere SWL" or "merely a number on a list". One is either a member or not a member of RSARS and if a member you "fall in" in the same rank as everyone else. After all most 'hams' started the hobby as an SWL and, although now licensed, spend approximately 50% of their time on the air as a 'SWL' (rather more if you are in QSO with a 'talker!'), Regarding the 'divining' I must admit that the nameless one was your Editor giving a short demonstration of cable divining with two copper rods. All the staff at the HQ location are now Diviners, Cable, Class I although it is not certain whether cables actually exist at the points "divined"!! David's list of prices for meter repair and calibration (as at September 1974) reads :

AVO 40 - £15, AVO 7 - £15, AVO 8 - £15, AVO 9 - £15, AVO Heavy Duty - £15, AVO Multiminor - £10, TAYLOR Type 127A - £10, TAYLOR Type 88B - £15, TAYLOR multiampmeter S/C - £9, GEC Minitest - £10, HOWARD BUTLER 0-300 - £10-50, HOWARD BUTLER 0-750 - £10-50, E&V 500V-1000V Megger (Hand genny) - £12, WEE megger £12, MAJOR Megger - £25, E&V 500-1000V Megger (battery) - £12, E&V Line Earth Loop Tester - £32.

Note - If it is found that the repairs exceed the above prices, the unit will be returned as Beyond Economical Repair (B.E.R.). David will be pleased to quote for instruments not listed. All reconditioned units are covered by guarantees as per the repairers conditions of sale and are insured whilst in transit with the G.P.O. The right is reserved to adjust all prices quoted without prior notification although every endeavour is made to avoid such adjustments Ed.)



From: "BQ", otherwise G2BQ, now at Brockenhurst, Hants. ".....Thank you very much for the plaque ('Best Mercury Article' - Ed.) which I found waiting for me when I arrived back last Thursday. I hope to be able to devote a bit more time to Amateur Radio when I can get the more important parts of the house and furniture settled, to say nothing about getting a proper antenna up. At the moment it is strung out of the window about 12' above the ground....." Sincerely, 'BQ'.

FULL LETTERS - Contd.

From : Peter, DA2ZI/G3PNM, 13th Signal Regiment, B.F.P.O. 40. "..... I was interested in your repeat of Bill Orr's remarks about the relative performance of dipoles, $\frac{1}{4}$ wave Groundplanes and Isotropic radiators. Unless he has discovered the fundamental Laws of the Universe what he says is nonsense. It can certainly be shown that a dipole, in free space, has a gain of 2.15dB relative to isotropic.

Now: For both dipole and monopole (the former in free space and the latter above the extensive perfectly conducting ground plane) it can be shown that:

$$E = \frac{60 I_0}{r} f(Q) \quad \text{where } I_0 \text{ is the maximum antenna current, } r \text{ is the distance from the antenna to the receiver, } E \text{ is the E field, and } Q \text{ describes the direction of radiation.}$$

$$\text{If } E = E_{\max} \quad \text{then } E_{\max} = \frac{60 I_0}{r}$$
$$f(Q) = 1$$

Now $P_{\text{rec}} = E_{\max}^2 K$ where P_{rec} is the power received, and K is a constant (equivalent to a resistance).

$$\text{Thus } P_{\text{rec}} = \left(\frac{60}{r}\right)^2 I_0^2 K \quad \text{-----(1)}$$

Now $P = I_0^2 R_{\text{rad}}$ in a lossless system, where P is the power delivered to the antenna and R_{rad} is the radiation resistance of the antenna.

$$\text{Therefore } I_0^2 = \frac{P}{R_{\text{rad}}} \quad \text{-----(2)}$$

From (2). For a dipole $I_0^2 = \frac{P_{\text{dip}}}{72} R_{\text{rad}}(\text{dipole}) = 72 \text{ Ohms.}$

$$\text{For a monopole } I_0^2 = \frac{P_{\text{mono}}}{36} R_{\text{rad}}(\text{monopole}) = 36 \text{ Ohms.}$$

Substituting in (1) and for the same power received in both cases :

$$\left(\frac{60}{r}\right)^2 \frac{P_{\text{dip}}}{72} K = \left(\frac{60}{r}\right)^2 \frac{P_{\text{mono}}}{36} K \quad \text{i.e. } P_{\text{dip}} = 2 P_{\text{mono}}$$

(In words, in order to produce the same power at a receiver at the same distance from the transmitting antenna, twice as much power must be delivered to a dipole as to a monopole.)

Thus for the same power delivered to the antenna :

$$P_{\text{recmono}} = 2 P_{\text{recdipole}}$$

Thus:

$$\text{Gain} = \frac{P_{\text{recMono}}}{P_{\text{recDipole}}} = 2 \equiv \underline{\underline{3 \text{ dB.}}}$$

Thus the gain of a Monopole with respect to an isotropic Radiator is $3 + 2.15\text{dB} = 5.15\text{dB}$

It should be noted that this is in the direction of maximum radiation. In the case of a Monopole this is omnidirectional at 0° elevation (and approximately true for angles up to 20°), in the case of a horizontal dipole (in free space) bidirectional in the horizontal plane and at all vertical angles.

This, of course, is a theoretical study and the comparison, in practice, between a dipole above the ground and a $\frac{1}{4}$ wavelength monopole above an imperfect reflector will be rather different. In general, however, provided that all the power from the transmitter gets to the antenna (i.e. the system is matched and losses are small), the ground plane is reasonable (i.e. a good number of radials at least a $\frac{1}{4}$ wavelength long), a monopole must have a gain compared with a dipole.

FULL LETTERS - Contd.

However, in practical cases, the vertical angle of maximum radiation for a dipole will almost certainly be greater than that for a monopole - which is either good or bad depending on where you want to work and with which antenna.

I was also interested in the article on vertical dipoles (By G3BID - Ed.). Certainly a vertical dipole with its lower end just above ground will have some gain over a dipole in free space, as (by images) it is equivalent to a broadcast array of two dipoles. Such an arrangement will have a gain of the order of 4 dB relative to a dipole in theory and the radiation resistance would be about 100 Ohms. In practice such an antenna would probably be easier to match than a groundplane and so might well give better results. The polar diagrams are similar.

I consider, however, that hanging antennas from balconies or folding the lower end along the ground is a practice not to be recommended. Such treatment will most certainly modify the radiation resistance and polar diagram and results will be unpredictable. Having said this, the old adage "The right antenna's the one wot works" still holds good!! (and I'm sure you've all seen the above before. Anyway!).

73 Pete Smith. DA2ZI.

From : M. Watson, G3JME/RSARS 532. 38 The Paddock, Boroughbridge Road, York. YO2 6AW.

".....I've been interested in the article by Jack, 5VO, and the various comments on Sporadic E. Jack is an old friend of mine from Scarborough ARS days, and good days they were!.

However, I thought you may be interested to know that I'm involved with our Research Department, and a bit of Bradford University, in propagation experiments above 10 GHz on a working microwave link through one of my radio stations. As the exercise has up till now, been running only a short time there isn't much data available, but after the boffins have come up with some hard facts, if you think it might interest a few, I'll tell the tale (Yes please! - Ed.). The gear we are using ranges from the highly sophisticated to the downright Heath Robinson, and I might add that the Heath part is also in evidence in the Workshop.

Having served my time with 3 Div. - 25 Field Engr Regt., in MELF 26 on 19 sets, 62's, 22's and 53 sets, the mobiles I service now look positively minute! - but that is only part of the job. My main work is microwave which is really fascinating - been at this for 10 years now.

I don't get on the air much from 'JME at the moment, growing family, with one handicapped, plus two cats, I seem to be forever repairing things, screwing things on walls, painting, etc., plus being 'on call' 24 hours a day, keeps me fully occupied. However, a new rig is under way, Top and 80 with facilities for use as a driver for the HF bands BIG (15W!) P.A. later. I have already been building it for 2 years so when it does finally emerge, I'll have a brand-new, out-of-date, rig. In between times I am working on a converter for 1296 MHz, got the mixer cavity bored and the mixer crystal mounted plus some of the LF stuff, and have made a start on the oscillator chain, but can't make up my mind whether to use a varactor multiplier and cavity to 1296 MHz or just keep multiplying through transistors. Still, it keeps me out or mischief!!.

I can't think why I didn't join the RSARS years ago. I was a member or the Club at Catterick and thoroughly enjoyed myself there before I was posted. Things have certainly changed. I was out at a VHF link a few weeks ago and a Royal Signals detachment was parked up alongside. I had a natter but didn't recognise a single piece of equipment!. The mention of 19 sets brought blank looks all round - I must be getting old!!!....."

73 Mike G3JME

(Tnx, Mike. HQ would be interested in hearing from any other members who are active on, or interested in, 1296 MHz etc. - Ed.).

From: J.A. Batchelor, BRS 30484/RSARS 647, 28 Asket Walk, Seacroft, Leeds, LS14 1JE.

".....I very much enjoyed the article "The birth and early life of a ham". As a lad I had a crystal set, in fact, still packed away is a new crystal and cat's whisker, carefully wrapped in cotton wool, and in the tin as purchased all those years ago, and never used.

FULL LETTERS - Contd.

Unlike the author, I did not take up radio as a hobby, but went on to build models, planes, ships, cars, etc., to be followed later by steam engines. By this time I was working and tools were purchased as cash would allow. If I had a Saturday off I would go to Euston Road and would spend hours in "Bonds" wishing that I could make such fine models as were on show. Then across the road to Buck and Ryans, to see the fine tools. On Sundays, it was a trip to the Science Museum in Kensington.

But I needed a lathe, and my pocket money would just not allow such grand things, so - why not make one?. This I did, and built up from 1/16" steel plate all the 'bits'. Today the slides of this lathe are still in use in my workshop. After the War I purchased a Boley Lathe bed and headstock, but no slides, so a base was machined and the old slides put back into use and these are still giving good service.

The return to Radio came after an illness when I was unable to work at the bench. An old PCR RX was obtained and after hearing amateurs on 40 Metres the bug bit. A BFO was fitted and I would stay up until the early hours tuning the tiny segment of the dial marked "14 M/cs" (about 1/4") looking for DX....."

73 for now Jim.

(Having been an apprentice toolmaker, I admire anyone who builds a lathe! Well done. OM. - Ed.).

From : Robin Addie, G8LT/RSARS 290, Wappenham, Towcester, Northants, NN12 8ST.

".....Very nostalgic that reprint of the article by VU2BC. Although I don't go as far back as he did, it reminded me of some memories that I had almost forgotten. Like the first TX (59 C.O., 46 P.A.) built on two upturned knife boxes bought at Woolworths for 6d ('d', not 'p') each. Of how this TX was transported to College and the antenna problem solved by a nice Windom made in 18g enamelled copper stretched, at dead of night, across the hypotenuse of the L-shaped building, the insulators being stout elastic bands. This not only earned me WAC on CW but defied detection by the authorities for two years!.

Of the days of the 56 MHz band and the pack-set containing a superegen transceiver with HT and LT batteries that effectively prevented the wearer from riding a bicycle in the upright position. One of the pioneers in this particular project, being obliged to ride so horizontally as not to see the road properly, one night rode into the river. We were heartbroken at the damage to the gear but, I recall, had no sympathy for the operator or the effect on his bicycle!.

Of the successful experiments on about 60 cms: in about 1937/38 using acorn tubes which gave a QSO from Fairlight, Hastings to somewhere near New Romney.

Some of the old gear turns up from time to time in the occasional clear-outs there are several large inductances carefully wound in 1/4" copper tube and polished (just the thing for 25 Watts input!!). I sometimes wonder if an enthusiast might try and reconstruct some of the monstrosities that were used as I am sure there are many who could supply the parts. They seem to have a good going line with vintage cars by this means.

Nowadays, a large proportion of ones gear will be commercial as there is just not the time to make everything. It is a good discipline however to have made one of everything at some time of ones ham 'life'.

I am trying to twist the arm of my old war-time friend Reg Wigg, G6JF, to become a member - have sent him the form and almost filled it in for him!!....."

Best 73 Robin G8LT



From: VS5MC. ".....The Net seems to be livening up a bit again. HZIKE adds a touch of the exotic. Spratly Island having proved inhospitable I'm hoping to have a go at Amboyna Cay in December or January....." 73 to the gang, Maurice.

FULL LETTERS - Contd.

Not a full letter this time, but in these days of typewriters that cannot spell, ball pens that tend to be 'blobby' and the generally lower standards of handwriting your Editor thought you might like to see the following. It appears to have been done with a ball-pen!!

3rd Dec. 73:

Len Pearson 845
G3JFE
300 Scalby Road,
Newby,
Scarborough
Yorkshire.
YO 12 6EA.

Dear Gen. Sec:

Sorry for delay in sending
my Postal Code.
YO 12 6 EA.

An extract from a letter from G18AYZP about pirating appears elsewhere, but Ian also goes on to mention ".....For information I have worked only /P since 1971 except for a few local QSOs. I work ONLY AM on 145-6, 145-8 or 145-91 MHz and also on 433-45 MHz with the exception of one SSB outing in August 1973 and I have been totally silent since that trip. So any QSOs with G18AYZ since June 1971 or G18AYZP since August 73 are spurious, though my unmistakable "whisky throat" tones can occasionally be heard from G13FFF on various bands and modes. Last year I gave up 2 Metres and 70 cms. and sold up most of the gear following the GB3MKB celebrations during which time we brought the first A/TV to Rathlin Island, an operation which would make a good script for a film on the lines of the "Carry On" series. I have a rough Manuscript of the events written (I call it writing!) and will get it typed up and sent on to you if you think anyone would be interested. (Yes please - Ed.).

It was, as far as I know, the first CCIR Amateur TV in GI and definitely the first from "off-shore". We had great fun pulling the BBCs leg about it when, we got back! They were not amused by our 'handy-fixit' way of doing things.

Very glad to see a VHF Contest, and will beg, borrow or even build new gear to take part, though I should be QRV on 1296 MHz and 10050 MHz by then anyway.

By the way the new North Ulster RSGB Group has RSARS at the helm with little me as A.R. and Dave, G13KVD as Deputy/Secretary/Treasurer. I haven't seen Walter, G12DZG for a long time now, though I see Ron, G13HXV, at Group Meetings and G13ALT every flaming day at the work QTH. The rest of the RSARS GI's seem to spend their time avoiding each other!!....."

73 Ian, J. Kyle, G18AYZ/RSARS 0058.

FULL LETTERS - Contd.

From: Cpl. Hall C.J., 'J' Tp. 21st Signal Regiment (AS), B.F.P.O. 47. ".....In reply to Jim's (GM3HGA) letter in 'Mercury' Summer '74. As a reasonably active SWL I have come round to the use of files as the easiest way of listing call-signs heard on the bands. I have 15 files 9" X 6". 13 hold approximately 150 pages and 2 hold 300+ pages. Each page is used once only for one call-sign and pages are placed in numerical order in their respective sections. These sections are: 4 sections for G3 plus 3 letters, 2 files for G4 plus 3 letters, 3 files for G2-4-5-6 plus 2 letters and all GI-GM-GW. Also 1 for W's. 1 for U's, 1 for D's and 1 for numerals 1 - 9. The 2 larger files are for the rest of the World. For quick reference to RSARS members I use the Society List.

Obviously, as an SWL I'm interested in all call-signs heard on the Bands, not only RSARS members, and no doubt a lot of licensed members likewise. Cards, as mentioned by Jim are obviously a good thing for licensed members but for SWLs who like to list a call-sign 5+ times before sending a QSL, perhaps not so good.

So it is YES for the card idea. Filing cabinets may not be such a good idea if one is overseas but then I suppose one could always make them!....."

73 Kit.

(Several members have expressed an interest in the Filing Card system mentioned in the last 'Mercury'. We are opening the cupboard to talk to our "friendly Bank Manager" to check on the financial situation at present as, to make it a worthwhile project, we would need to purchase something like 100,000 which means quite an initial outlay. Your Editor has many thousands of QSO's entered on these cards and by visiting that well-known stationers "& Sons Ltd" and getting the alphabetical dividers, covering the letters with small sticky white rectangles (also available from WHS) and entering the prefix, i.e. G2, G3A, G3B, G3C, etc., it is quite easy to pick out a card whilst the other station is giving the initial details. - Ed.)

From: S/Sgt. R.E. MacNaught, B.F.P.O. 801. ".....Thank you for the loan of "RTTY A to Z" from the RSARS Library. All my questions are now answered and I hope to be on RTTY on my return to Germany. Equipment is a Model 15 Pagemwriter Kleinschmidt with matching Perforator....."



HERE AND THERE

From J.A. North, G2KO, "The Elms", Bainton, Driffield, North Humberside, YO25 9NJ.

".....At the end of World War I, I was a cadet in the O.T.C. at Bridlington School. The War Office presented us with a couple of Radio Transmitters and Receivers, and it was on these that I put out my first radio signal. We were fortunate in having a radio enthusiast as our Headmaster (the late Arthur Thornton) and he invited interested boys to his study to listen to time signals from The Eiffel Tower etc. I think my biggest thrill was in 1919 when I built my first receiver and received signals from BVN on Flamborough Head. By 1932 I was the youngest Head Teacher in The East Riding of Yorkshire and at the present time six of my old scholars are active radio transmitters. At the outbreak of World War II, Lord Sandhurst wasted no time in signing me on R.S.S. as V/N E/20 with Captain Hector G. Mappin (Royal Signals) and CQMS E. Howes as my local officers. I regret to way that I have lost touch with them. I retired from teaching ten years ago. G5VO and G3XYF were connected with the same Bridlington School....."

RSARS 1017/ZL3VJ writes to say that he has just taken delivery of a FT DX 401B and has overhauled his antennas, etc., and is looking for R.S.A.R.S. contacts. If you would like to make a sked, drop a line to ALEX A.G. MACGEORGE. ZL3VJ. 10 MANURERE STREET, CHIRISTCHURCH, NEW ZEALAND.

HZ1KE is very active on 20 but mentions that he will be unable to QSL until his return to the U.K. at the end of this year. He expects to be returning to HZ in February '75.

HERE AND THERE - Contd.

A letter from G4CVY/RSARS 966 mentions that he has been, off the air for a while ".....first FT 101B illness and then a couple of my own transistors gave a bit of trouble. However, the doctor seems to have got them correctly biased again and I was able to have a chat with Cyril, GW3ASW.....". Dave is connected with the Sea Cadet Corps and recently purchased a couple of the Creed 75R MkIV T/p's for his Cadet Radio Communications Centre. He should be active on 2 also by now.

From Keith, G3KYF/446 comes his resignation from the Society. His letter reads ".....After a lot of consideration I have finally decided to give up Amateur Radio or at least for a while. I therefore regret to say that in consequence I will have to resign my membership of RSARS, for a while at least, but would like to rejoin again when I do return to the bands. The fact is that I have changed my hobby to another which is equally expensive - Hi. I need the green stuff so if any member is interested in a complete station which will be advertised in Octobers RadCom it consists of the following : FT DX 500 Transceiver, FV 400S VFO, Speaker, Dynamic mic on desk stand, TA 33 Jr 3 Element Beam - all for £255.

I may consider a split but must part with it all. Other items include: 2 Alloy masts 22' each - £2 each, Hansen SWR/FS Meter - £4, Headphones (new Jan 74) - £5.....". Keith's resignation takes effect from 18th October 1974 and we are sorry that we are a bit late with his advert. We look forward to welcoming him back.

Eric, G3RLP/RSARS 1001, has now left Brixham and is just about settled at "Appledown" Lewes Road, Scaynes Hill, Haywards Heath, Sussex. The weather has not yet allowed antennas to be erected but he should be around the bands by the time you read this. Once settled he hopes to take a trip to Paris.

Copied from the VERON transmission on 3600 KHz. ".....This evening (Friday - Ed) at 2130 GMT we again will transmit our proficiency run in Morse with speeds of 15, 20, 25, 30, 35 and 40 w.p.m. One minute correct copy is sufficient to get a Certificate for that speed. Stickers are sent for every higher speed. The original hand-written copy must be sent to The : Certificate Manager VERON, A. SANDERSE, PA0MOD, DASHOUST 18, LEUSDEN, THE NETHERLANDS.....". Here is your chance to get that Certificate for CW proficiency. For the RTTY enthusiast VERON runs their RTTY Bulletin on 3600 KHz on Fridays.

The reason that Ron, G4BKU, hasn't been around the Nets recently has been due to holidays and garage and house painting. He has sent an application form to G4DKU at Weston-super-Mare. Ron adds ".....this should confuse things a bit!!....."

From RSARS 1025, otherwise G3XLJ. ".....On my membership application form I forgot to mention some aspects of my Service. During the period 1943/47 I served with 9th AGRA for a short time and then with 6th Guards Independent Tank Brigade. After VE day I finished my Service with 22 Armoured Brigade. During all this time I was an OWL (Operator Wireless and Line - Ed.).....". If you were with any of these Units why not drop a line to G3XLJ at C.E. GREENWOOD, 18 BERESFORD AVENUE, HORNSEA, NORTH HUMBERSIDE, HU18 1SN.

John, G3YSK, having now handled many hundreds of QSLs for members, is looking for one for himself. He is interested in contacting the licence holder of VE3RCS to extract a card. WHAT ABOUT IT, AFF20???

A letter from Les, G8NY, RSARS 486 mentions ".....My wife, Betty and I are off to VK2 - Sydney, Australia - on 28th November, for three or four months, visiting our son and family. We also hope to meet some of the VKs that we have had QSOs with. I should be grateful if you would find a spot in 'Mercury' to wish members, especially 'SCU' types, and all concerned with 'Mercury', a very Happy Christmas and a DX'y New Year....."

HERE AND THERE - Contd.

The Creed 75 MkIV Teleprinters have sold well and most of the better looking ones have now gone (some as far as Scotland). For any member wondering whether it is worth 'having a go' on the keyboard it might be interesting to know that a recent RTTY Contest showed the following prefixes were active : CE3, DF1, DJ8, EI8, F6, FO8, G, HA5, HB9, HG5, HK3, I, IT9, JA, JH, K1, K2, K4, K6, KH6, KX6, KZ5, LA5, LX1, OK1, ON5, OZ4, PA0, PY2, SL, SM, UA9, VE2, VE4, VE5, VE7, VK3, VP2, VS6, W1, W3, W4, W5, W6, W7, W8, W9, W0, WA4, WA6, WA0, WB4, WB9, XE1 and 9Y4.

AFF 12, otherwise Kelly College Amateur radio and Electronics Society in Tavistock, Devon, now has a 2 Metre home brew transverter for use with the 101 and a 14 element Para-beam at 80 feet (!). Robin, G3ZYE, is now looking around for some 2 Metre contacts. By the way, the President of AFF 12 is none other than Stew Perry, W1BB.

A Change-of-Address card from RSARS 075, V.C. Brown who is now at 135 Markfield, Courtwood Lane, Addington, Surrey, CR0 9HQ.

Bill Begg, RSARS 624, writes requesting an up-to-date membership list ".....so that I can get down to claiming my 300+.....". Well done, Bill, now we know why we haven't heard too much from you recently.

WANTED URGENTLY BY VE3DDR/RSARS 0319. A MANUAL (OR PHOTOCOPY OF SAME) AND/OR FORMULAS FOR THE I.F. MIXER AND R.F. MIXER CRYSTALS FOR A REDIFON GR 319 BASE STATION. THE R.F. UNIT IS A PC 804/1 AND THE A.C. UNIT A PC 803/1. PLEASE DROP A LINE, WITH ANY INFO, TO: D. RATCLIFFE ESQ., VE3DDR/ROYAL SIGNALS ARS 0319, 2496 GLENGARRY ROAD, ERINDALE, ONTARIO, CANADA.

Dave Beare, Ex-DA2YK/611, recently paid a visit to Mike Taylor, VP1MT. On return he writes "..... The interesting thing, though, is that Amateur Radio proved its usefulness once again. Hurricane Carmen was coming straight for us across the Caribbean and, by getting reports from K4RLH, Ellie, (who had a direct land-line teleprinter to the Miami Hurricane Control) we were able to get the latest info 2 hours before it came through official channels. At the time Mike was very busy and I operated for about 30 hours keeping track of the thing. I eventually chickened out and lowered the antenna and dived for shelter" ... It was rather an anti-climax, Carmen turned North about 50 miles from us!. So, we hardly got a breeze. Still, it's nice to feel wanted!"

G18AYZ/P, Ian Kyle writes (rather a long time ago - sri - Ed.) that "some light comedian has been pirating my call, certainly during 1973, even down to my /P QTH and RSARS Number. It could be the same gent who is currently pirating our Club call G13FFF on 145.8 MHz. I think all cards I have received for such contacts have been answered personally, but if any member is still awaiting a promised card, this may well be the reason, so a mention in 'Mercury' may not be amiss.....".

Another belated entry, this time from Dick, G3NVK who wishes to thank all those members who helped him gain enough points to win the 1973/74 '5-59' Trophy. Dick says "I am sure it must have been pleasing to Cyril to see more activity this year. I hope it continues....."

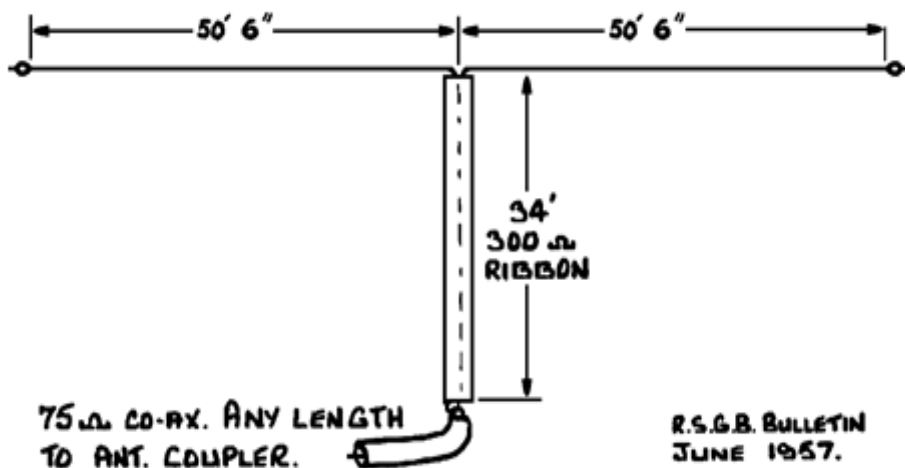
G3BID/RSARS 381 tells us that The Amateur Radio Mobile Society plan to hold their Rally on May 18th 1975 at Northwick Park Hospital, Watford Road, Harrow, Middlesex, HA1 3UJ. A cordial invitation is extended to all R.S.A.R.S. members.



HOW DOES IT WORK?

Browsing through some loose pages of an old "RSGB Bulletin" your editor came across a short article under the above heading. It is not known if anyone did explain how this antenna works, but in view of the "outstanding success" claimed it is reproduced here (with acknowledgements to "The RSGB Bulletin" and the RSGB) for the benefit of those members whose back garden will not quite accommodate 132' end fed but will manage 101' dipole. HQ would be interested in hearing from any member who tries this sky-wire with details of results obtained.

"For the past few months a well-known member (of the RSGB - Ed) living in Bedfordshire has been using the aerial illustrated below with outstanding success on the DX bands. In a note to (RSGB) HQ he asks "How does it work and who invented it?" Who knows the answer?"



CAN YOU HELP???

G3JJW (a 'light-blue' member of RAFARS) is urgently looking for details of the Marconi TF 1099. If you have any info please drop a line to:

J.B. JOHNSON, G3JJW, 44 Castle Avenue, Duston, Northampton.

Ron Ham, charged with the difficult task of re-writing "The World at their Fingertips" has asked HQ for any snippets of information regarding the Society or its members which would make interesting reading. Any information, even if already held by HQ would be appreciated AS SOON AS POSSIBLE. Have YOU taken part in a DX-pedition, managed a 'World-First' on any frequency/mode/method, received signals from Outer Space, etc. etc.? All info to HQ please where it will be collated and passed on to Ron.

Keith Allen, G3ZVD, has moved to a new QTH with a "housing estate size garden". He is thinking of getting a vertical and would like members opinions on current vertical antennas, etc. Write: K. Allen, G3ZVD, 17 Aireton Close, Wickersley, Rotherham. S66 0HP, Yorkshire, or ring Wickersley 3619.



TRANSMITTING SATELLITE PREDICTIONS

(Once again our thanks, and acknowledgements, are extended to The Director of The Appleton Laboratory for the following information on current satellites - Ed.)

Satellite	Tracking	Telemetry (1)	Frequency (MHz) Telemetry (2)	RevChange (Minutes)	Daily Change (Minutes)
<u>68 114A</u>	136-77	136-77	137-62	115	+50
<u>69 9A</u>	136-08	136-58	136-41	128	-28
<u>71 18A</u>		19-995		101	-21
<u>71 24A</u>	136-41	136-08	136-59	114	+38
<u>71 58A</u>	137-71	137-71	136-38	95	-19
<u>72 58A</u>	137-86	2229-50	2265-50	103	+6
<u>72 82A</u>	136-77	136-77	1697-50	115	+54
<u>72 82B</u>	29-45 - 29-55	145-9 - 146-0		115	+54
<u>72 97A</u>	136-50	136-50	1702-76	107	-44
<u>73 86A</u>	136-77	136-77	137-41	116	-44

TIME OF NEAREST APPROACH TO 55°N, 2°E (Times for other dates can be calculated from the above table)

Satellite Name	Number	Dirn.	20 Nov	27 Nov	4 Dec	11 Dec	18 Dec	25 Dec
ESSA 8	68 114A	SN	2003	2016	2030	2044	2058	2111
		NS	1052	1106	1119	1133	0954	1008
ISIS A	69 9A	SN	0033	2255	2354	2244	2134	2232
		NS	1153	1042	1140	1029	0916	1012
CHINA 2	71 18A	SN	1232	1157	0936	0857	0631	0548
		NS	2122	1903	1825	1601	1519	1251
ISIS B	71 24A	SN	0114	0151	0034	2355	2238	2315
		NS	1300	1337	1220	1103	1140	1024
SOL-RAD 10	71 58A	EQ	2203	1954	1745	1535	1147	0937
		EQ	2342	2133	1606	1356	1326	1116
ERTS A	72 58A	SN	2113	2012	2052	1951	2032	2114
		NS	1933	1013	1054	0953	1034	0934
NOAA 2	72 82A	SN	2030	1916	1956	1843	1923	2003
		NS	0925	1004	0851	0931	1011	0858
OSCAR 6	72 82B	SN	2027	1915	1956	1845	1927	2009
		NS	0922	1003	0851	0933	1014	0904
NIMBUS 5	72 97A	SN	1036	1040	1043	1047	1051	1054
		NS	0015	0019	0022	0026	0030	2349
NOAA 3	73 86A	SN	1953	2021	1855	1923	1951	2019
		NS	0842	0910	0937	1005	0839	0907

SN = Northbound, NS = Southbound, EQ = West to East. Times = GMT.



"IT'S' RUDDY LONELY UP HERE"

G8PG/GW8PG.

(But they took 3rd and 6th places for RSARS!)

FLASH! At last the Continental stranglehold on the top ten places in the DL AGCW QRP Contest has been broken and by RSARS members. The results for the Summer 1974 Contest are out, and they show Gordon. G3DNF, in 3rd place and Gus, G8PG, in 6th place. And just to show willing Gordon also turned in the highest band score for 21 MHz. All this was done with powers between 2 and 9 Watts (all under 3 watts as far as Gus was concerned), and simple back garden aerials. And don't think that the opposition was soft!!. When you get the cream of the QRP operators from 14 different countries in 3 Continents chasing the honours you have a real Contest on your hands. Apart from a lot of solid-state transmitter construction and various aerial improvements, our lads spent a lot of their time prior to the Contest doing detailed propagation surveys the hard way - actually listening to, and working the stuff to determine exactly what the peak times were for the various bands. On the day it certainly paid off!. However, do you remember the famous RT signal from a Yeomanry patrol who had just captured the most important observation post in Normandy - and were watching half the German army milling around at the bottom of it?. It read "We've got here, but it isn't half ruddy lonely up here". Our two lads are feeling very much the same. Surely in a Society the size of ours there are a few other blokes who can use a key and build a 3W TX?. If they had a go, maybe by this time next year we could turn in 1st, 2nd and 3rd places for RSARS - If they had a go!!.

The next Contest is on 11th and 12th January 1975. The rules are the same as published previously, except that the power limit for the QRP equipment handicap bonus has been raised to 3.4 Watts to allow HW7 equipments to qualify for it.

Should anyone have difficulty in scoring his log, he can send it unscored and the organisers will sort it out. UK logs to G8PG, who can also supply copies of the rules and deal with queries.

Submitted by A Good-Pynt, Foreign Affairs Correspondent of the Tarrant Gunville "Bugle", otherwise :

Gus Taylor, G8PG/GW8PG, 31 Pickerill Road. Greasby, Wirral, Merseyside.



LOST A RESISTOR???

HQ is holding a receipt headed "ALL SERVICES" LIST OF STORES PLANT TOOLS INSTRUMENTS, ETC. issued by "F of S Office" (location not known) for 1 Resistor Anode Bulgin 20W 25,000 Ohms, and 1 Valveholder Benjamin anti-microphonic 4-pin. The receipt is signed by "K. COOK" and is dated 20th November 1936. If you are still waiting for the return of a resistor and a valveholder, HQ will, for a small consideration, forward the present location of the aforementioned "K. COOK"



P.S.

That big-headed OWL has just dropped in again and said he THINKS that the "F of S Office" was located at a place called SARAFAND. At least there is one thing that he is not sure of!



P.P.S.

Another Issue Voucher has turned up at HQ. This time it is for 1 Irons Soldering Tinmans Small, and 1 Lamps Blow Brazing 1¾ pint. This time it is signed by "K. COOK" and dated 9th December 1936. The OWL merely remarked that it appears to have taken the aforementioned "K. COOK" a long time to decide to solder that resistor in!!!

THE OWL - AGAIN!



I looked up from the typewriter and there he was, perched on top of the filing cabinet. He blinked, but said nothing. Adopting the "Ignore it and it will probably go away" technique I continued typing. In a short while I heard "Oi!". "Are you addressing me, my good man - er, Owl?" I asked. "Yes, seeing that there is only you and me here". "What do you want?" I asked with a sigh. "Call yourself a Secretary?" he asked "You know nothing at all about your members". Such a statement (although true) could not go unchallenged. "Such as?" I queried. "Well, who contracted frostbite in February 1945?". "No idea" I had to admit. "Well, ask Walter, GI2DZG, and who wrote the following in 1947? He than reeled off parrot-fashion (or should it be Owl-fashion) the following: "Dear Sir, I am sure I am voicing the heartfelt thanks of many XYL's to Mr Shinwell for the power cuts. Never before have the hams been so willing to assist with the washing up, dusting, etc. My sympathy goes out to the unfortunate XYL whose husband uses a battery set. Quite a number of these about lately!". I looked blank (or more blank than usual) and he just said "Try G2DRT" He went on "You have at least a dozen or more members with a G8 plus 2 call-sign - when was this series first issued?". I shook my head. "As far as I remember it was the last week of May 1936" he said. I quickly counted on my fingers - "That makes him at least 40" I thought. "And why" he went on "would it have been most unlikely that you would have heard any potential R.S.A.R.S. members on the air, either at home or throughout the Empire on Sunday January 26th 1936?". I didn't know and he wouldn't tell me. "Perhaps some of your members know, why not offer them an R.S.A.R.S. voucher for the first correct answer opened on March 1st '75?". "OK, I'll do that" I said more to appease him than anything and as DOZ(E) had not contacted HQ recently I thought it would fill a gap. "No doubt you know that G2MI has a lot to do with the RSGB QSL Bureau, but who was QSL Section Manager in 1935?" I didn't know and had to admit it. "Well, he is still a member of R.S.A.R.S." he said as if by way of a prompt. "It couldn't have been G3ONU" I thought and again shook my head. "He kept bees" he added. "Where was G5GH during the Spanish Civil War?" was the next question. "Finmere?" I ventured. "Rubbish" was his only reply. We looked at each other for a while until it became obvious to him that I hadn't a clue. "OK, I'll tell you". ("Thanks" I thought). "He was at His Majesty's Consulate in Valencia, Spain". "Is that so" I said as it was all I could think of to say. "Yes" and he added by way of a bonus "His work there earned him the MBE and it's about time you did that member justice and entered it on your membership list". "Sorry" I said. "In August, 1935 the "Malines" was sailing alongside Antwerp Cathedral". He stopped. I waited. "So what?" I queried. "Who went on to the bridge and sent 'GB' in Morse to the ships' siren?". I thought (This couldn't have been G3ONU either I decided). "Don't know" I at last admitted. "You're not trying" he said "So I won't tell you, except to say that he should have sent 'G2MI'". "Although not a R.S.A.R.S. member when did GM8AHP come fourth in the 7 Mc/s entry in NFD?". "Never" I said with a smirk (knowing all about Class 'B' licences, etc!). "Wrong" he said in a very firm voice "According to the RSGB it was 1938". He looked around. "On your desk you have a copy of an article from 'WW' about a RTTY Tuning Unit by G8LT. I'll bet you didn't know that Bob was writing articles before the War, in August 1938, in fact". "No, I didn't" I had to admit. "Yes" he went on "He had an article on a Frequency Meter published in the T & R Bulletin (the forerunner of 'RadCom') in August 1938". "Oh!" was all I could think of to say. "And if it is any consolation to you, the proof readers bug existed in those days - the article had a couple of printers errors in it!". "By the way" he said, as if changing the subject, which he wasn't "which RSARS member got his HBE Certificate on 1st March 1939?". I got up and went to the other filing cabinet to give the impression, at least, that I would find the answer in the maze of paper therein. I didn't and I couldn't. I turned round. He had gone on silent wings. But written on the top of the filing cabinet in chalk (I think it was chalk) was G5FA.



ALL SQUARE ON TWO.

G3NUI/RSARS 140

Being somewhat disenchanted with the HF bands of late, the author decided to see how the new "G8's" were making out on Two Metres and accordingly dug out his trusty Bendix R19 set (a sort of glorified Command receiver). which had previously been peaked on the 144 - 146 MHz section of the tuning range. The few signals that were heard were barely audible, and it was realised that a better aerial was needed. Preferably something cheap and easily constructed, and with a degree of apparent gain. Intrigued by the idea of a VHF Quad - much lighter and more compact than its HF counterpart - work started.

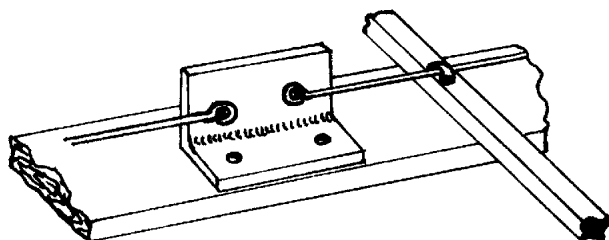
Untwisted coathangers would provide the elements and 1" X 1/2" laths the necessary timber. Dimensions were obtained from the "Handbook", and pieces of reclaimed coathanger were soldered together to form useful lengths, using a gas poker and liquid flux. It was decided to make all the elements in the form of squares as the resultant tapering can easily be accommodated by the simplicity of the woodwork entailed. If desired the element height may be kept constant and only the width altered to suit the overall sizes shown in the sketch. This perhaps, results in a more elegant design. Elements "A" and "C" are unbroken and are made respectively 93" and 78". The driven element "B" is another square loop, this time measuring 83" overall and must be broken at the bottom centre to permit connection of the 75 Ohms co-axial cable. This gap need not be more than 2" or so and a perspex bracket is bolted across it as shown in the second sketch.

Start assembly by laying two pieces of lath cut to a length of 33" on the work room floor, and spaced 14" apart. The reflector is fastened to the ends of these with two insulated staples and then lashed in place with either strong cotton thread or else insulated thin wire. The driven element is secured 19" away in the same manner. The smallest element, the director "C", is pinned in place 12" in front of "B". If you are expecting the addition of the top stringer to solidify the structure you are in for a severe disappointment. Rigidity comes later. After the top lath is fastened in place, raise the three elements to an upright position, and balance the structure on the palm of your hand, also squint along it to make sure that everything is as it should be. The base is now screwed in place, its centre corresponding to the point of balance, where it is held by four wood screws.

This sloppy mess of wood and wire can be transformed to a rigid cage by the simple addition of the two uprights "D" and "E", one each side of the top lath and spaced 4" apart. Both run from the base where they are secured by 3/16" wood-screws up to the top stringer where they are nailed in position with a couple of panel pins, guided by pre-drilled holes (a "printed circuit" drill is useful here). The transformed Quad is again balanced in the hand and at the critical point a mop ferrule is screwed (obtainable at most ironmongers, price approx. 5p). This makes a convenient point of attachment for the broomstick handle utilised as a pole.

At a height of only 15' this directive aerial has "perked up" all signals on Two, and what was an erstwhile deserted band has been found to be choc-a-bloc with potent RF. It must be stressed that, so far, it has only been used for reception and is at present giving excellent results with the Bendix receiver at this QTH. It should be just as potent when coupled to a transmitter, using 72 Ohms co-axial cable. The author would be pleased to hear from any licensed amateurs who have tried the "Box" for this purpose, perhaps using a gamma match.

(The QTH is : A.T. Dobson Esq., 156 Oswald Road, Charlton-cum-Hardy, Manchester, M21 1GJ - Ed).



A.T. Dobson
G3NUI

GERMAN ARMY WIRELESS EQUIPMENT.

A critical survey of the mechanical and electrical features.

(Reprinted from The Royal Signals Quarterly Journal, Volume 1 (New Series) Nos 2 & 3, April 1947 pp 62 - 66 with permission. This article was written by W. Farrar, B.Sc., of The Signals Research and Development Establishment, Ministry of Supply. It is hoped that it will be interesting reading to those who maintained and operated equipment "on the other side of the fence". Thanks are extended to Lieut. Colonel E.G. Day OBE TD, Secretary, Royal Signals Institution, for permission to reprint. - Ed.)

The remarks and conclusions presented in this article are based on the results of the examination of German wireless equipment captured by the Allied Forces during the war, and on reports issued by British and American authorities in the European theatres of operations.

The nomenclature employed for German army wireless equipment gave some idea of the use for which it was intended. Transmitters were labelled with the nominal radio frequency power output and, in some cases, a distinguishing letter "I KW.S.bi" indicated "1-kilowatt sender, type b, mark 1". Receivers had an indication of the waveband covered, being classified into long, medium, short and ultra-short wave types, with type letters and number as for transmitter. Tuning scales, however, were marked in frequency or channel numbers, and never in wavelength. Special equipment, such as direction finders and intercept receivers were described, (in abbreviated form) on the name-plate, as were ultra-high frequency (decimetre wave) equipment. The system of nomenclature, which applied to valves, vibrators, power units and the like, would appear to be better than the British number method.

Some of the German army frequency bands were different from the functionally corresponding bands used in the British army. For long-range working, with both fixed and mobile stations, low and medium frequencies up to about 7 Mc/s were used. Artillery units used 3 - 7.5 Mc/s for communication and 25-27 Mc/s for gun sound ranging. Tank-to-tank communications were carried out between 27 and 33 Mc/s while equipment in armoured cars and self-propelled guns varied between 20 and 25 Mc/s. Infantry in support of armoured units used pack sets with corresponding frequencies, but infantry in the front line used frequencies around 100 Mc/s and 150 Mc/s. 42 to 48 Mc/s was used for ground-to-air co-operation. As a general rule frequencies increased as the front line was approached reliance being then placed on the limited ranges at high frequencies to make interception by the enemy difficult. That the Germans were intercept-conscious by the large number of intercept receivers used, covering frequency ranges from 10 Kc/s to 305 Mc/s.

For long-range multi-channel beam working, a chain of decimetre-wave relay stations was employed, these being the only production equipments employing frequency modulation. The capture late in the war of a development model of a small high-frequency transceiver with both amplitude and frequency modulation facilities showed that the Germans were considering the use of frequency-modulation for normal short-range communication purposes.

The outstanding feature of German army wireless sets was the almost universal use of lightweight alloy in their construction. This was Elektron metal, approximately 90% magnesium, 8% aluminium, and 2% of other metals. Main frameworks used thick and often quite intricate castings, while screens and cover plates used sheet alloy cut and pressed as required, the whole assembly being bolted together. This system of construction made the equipment very rigid, rather more so than the pressed steel fabrication used in British sets, although due to the thicker sections used, it was no lighter in weight. Towards the end of the war, probably due to the scarcity of materials, castings of ferrous alloys and steel cover-plates came to be used in some instances. Since these were of the same dimensions as the formerly used Elektron metal pieces, this necessarily resulted in a considerable increase in the weight of the equipment. In the case of the 10-Watt transmitter for tanks, use of the heavier metals increased the weight from 20lbs to 30lbs, while an armoured car "house telephone" had its weight doubled to 30lbs. It is interesting to note that light alloy casting was being introduced into British Military equipment at about the same time as the Germans began to abandon it, probably for reasons of material shortage.

GERMAN ARMY WIRELESS EQUIPMENT - Contd.

Instead of using a single chassis with components mounted above and below, the Germans mainly used a system of unit construction. The various stages or sections of an equipment were assembled separately and these sub-units bolted on to the main cast framework. Final inter-unit wiring connections were made by solder tags, lugs and screws, or plugs and sockets. Thus in the case of serious electrical or mechanical defects arising a whole unit could be replaced and the equipment put back into service with a minimum of delay. While this method of construction simplified maintenance and gave additional mechanical rigidity, it also made the design much less flexible, with the result that very little modification occurred throughout the war. The 10-Watt tank transmitter was for all practical purposes the same in 1945 as in 1937.

Ceramics were used extensively in various ways: moulded plates for mounting components, tubes as coil formers and rods as control spindles, particularly for variable tuning condensers. The latter were mostly made from solid Elektron castings with slots machined in to form the plates. The stator sections of multi-gang units were fashioned from one block, and each rotor section was mounted on a common ceramic spindle which served also to insulate the rotors from each other. While this type of construction produced a larger assembly than the conventional bolted plate system the finished article was very rigid mechanically and sound electrically, due to the reduction in the number of joints.

Components were all of good quality. Although some of them were usable over a wide range of temperature and probably capable of withstanding tropical conditions, complete equipments were made only for operation in temperate zones. Sealing against atmospheric effects was not good, there being merely a rubber gasket around the inside periphery of the cover of the case. These precautions prevented damage only from showers or spray. Equipment captured during the North African campaign had quantities of fine desert sand inside it, in spite of efforts in the field to seal the equipment by painting around meters, dial escutcheons, fixing screws and other joints. White corrosion was formed on the Elektron metal when exposed to wet and left unattended.

In general, components had their values marked on them (relays and chokes had winding data printed on) and were numbered. Wiring, too, was numbered and both these sets of numbers were marked on the circuit diagram. This greatly facilitated servicing. Colour coding as on British condensers and resistors was not used in German equipment. Some ceramic condensers, however, appeared in various colours depending upon the type of ceramic used, to indicate different temperature coefficients.

All multi-band receivers specifically built for the German army had a well constructed turret system for changing the frequency bands, a feature not generally incorporated into British equipment until fairly recently. These German turrets, from which individual tuning units could be easily removed, were driven from a handle on the panel through a train of gears, and in some cases levers also; and were in general very positive in action. In some instances the fixed contacts were lifted off the turret before this rotated and dropped down again only after it had come to rest, thus avoiding rubbing contacts. This is contrary to usual practice, and was probably done to avoid wearing off the contact material which was only very thinly deposited.

Precision gearing was also used in tuning drives. To obviate backlash, conventional spring-loaded split gears were employed. The absence of backlash and the use of large circular tuning scales (the largest examined was 11½ inches in diameter) extending up to 270 degrees of arc made accurate calibration of the equipment possible. The two-position flick mechanisms used on certain equipments were well designed, easy to adjust and positive in action, resulting in an average resetting accuracy of the order of 1 part in 10 thousand, a very satisfactory figure for massed produced equipments.

Where an equipment had more than one frequency band it was customary to paint the sections of the tuning scale or the movable escutcheon with different colours, to correspond with similar colours on the various positions of the band switch or indicator. Colouring was used in certain other instances: for example, H.T. and L.T. points on a voltmeter scale were picked out in blue and

GERMAN ARMY WIRELESS EQUIPMENT - Contd.

red respectively, and on some sets corresponding controls had the same colours marked on them. The idea behind this scheme was to simplify operation. Another form of simplification of operation was found in the range of intercept receivers. Here the tuning control (Co-axial fast and slow motion) was positioned to the left of the centre-line of the panel; near the bottom and adjacent to it on the centre-line, were edgewise controls for bandwidth and volume, and an A.F. tone filter switch. The operator, using only his left hand could, whilst listening to a signal, vary the tuning with his fingers, and the bandwidth, volume and tone filter with his thumb, thus leaving his right hand free to take down the signal on paper.

The circuits employed in German army wireless equipment were, except for old sets, well designed and efficient, but by British wartime standards not up to date. The reason for this is that designs were frozen at or before the outbreak of war, as mentioned above, and subsequent modifications not possible due to the constructional system. New designs of some equipments, mainly man-pack sets, were brought out during the war, but were not outstanding electrically.

Wireless receivers in general use were, with one exception, all conventional superhetrodyne types, containing the usual features associated with a communications set. The exception, which was manufactured at least up to 1942, was an eight-band low and medium frequency straight receiver with two R.F. stages, detector, and A.F. output, which nevertheless performed quite well. Sensitivity of all superhet receivers, even those dating from 1936, was good, being of the order of 1 - 5 μ V R.F. input for 10 mW output, and compared well with similar British equipments. Signal/Noise ratio was also good. A 1945 model of a receiver for tanks (a design dating back to 1937) had so little background noise that, when it was switched on during tests, it was thought to be out of order. Selectivity was adequate, and in the case of most low and medium frequency superhets and in all intercept receivers, bandwidth was adjustable either continuously or, in some cases, in steps; a crystal filter was fitted in some instances.

Except in one or two equipments where suppressor-grid modulation was used, transmitters employed control grid modulation. On old types of transmitters, which used triode amplifiers, R/T performance was poor, the modulation never exceeding 20 percent without severe distortion. In the later types (after 1937) fairly full modulation with reasonable quality was obtained. A feature of all German army transmitters was the complete absence of quartz crystal-controlled oscillator stages. Instead, use of good quality components, including lavish use of temperature compensated condensers, combined with the very rigid construction methods, produced very stable, continuously tuneable, oscillator circuits.

In order that both transmitters and receivers could be set accurately to any required frequency, crystal calibrators were extensively used. These were of two types, quartz crystal oscillators and glow-crystals (Leuchtquartz). The former were of standard pattern, using the fundamental or suitable harmonic of the crystal frequency, and were either incorporated in the equipment or used as external units fed by current from the set under test. The frequency of an equipment could be correctly set up at one or two points in the band and, due to the accurate construction of the tuning drive and scale, the calibration held within close limits over the whole frequency range. The glow-crystal consisted of a small bar of quartz supported between two electrodes in a glass envelope containing neon. This was connected, in series with a blocking capacitor, across the transmitter power amplifier stage (or an earlier stage in high-power equipment). When the transmitter was tuned to the resonant frequency of the quartz bar, a potential difference was developed between the supports which was of sufficient magnitude to strike the neon between the electrodes. The glow could be observed through an aperture in the front panel or screening of the set.

The stability of the sender and receiver oscillators, combined with crystal calibration and the large-sized tuning scales, made netting procedure very simple. The method employed was merely to set the main tuning controls to the frequency or channel numbers specified. Subsequent adjustments comprised matching of the transmitter aerial systems, and perhaps adjusting the receiver fine tuning control, if fitted. Netting was then complete.

GERMAN ARMY WIRELESS EQUIPMENT - Contd.

Valves used in transmitters were triode or pentode types used in a conventional manner. Receivers, however, almost always used general-purpose pentodes and in almost every set the same type of valve served throughout, except at frequencies over 200 Mc/s, where special U.H.F. types were fitted. For use as triodes and diodes the anodes and grids were strapped together and in one medium frequency superhet, a pentode was employed quite successfully as a double diode/triode, the anode and suppressor grid acting as the diode anodes and the screen grid as the triode anode. This system greatly simplified both valve manufacture and provision of spares, and appeared to have no adverse effect on the performance of the receiver.

Power supplies were of various types, depending upon the use to which the equipment was put. Most sets were, however, designed for battery supply, which took the general form of a dry H.T. battery and a 2 or 2.4 Volts non-spillable accumulator for man-pack and portable equipments. Mobile transmitters and receivers worked from the 12 Volts vehicle battery, an external vibrator pack or rotary converter being used to obtain the H.T. voltage. The converters were housed in cast iron cases and were big and heavy compared with equivalent British models. This was somewhat compensated for by their increased reliability in operation. On fixed sites, or with large mobile installations, A.C. rectifier units, working from the mains, or an auxiliary generator was used. An alternative for the 1 and 1.5 Kilowatt transmitters was a large rotary converter. These units delivered well-smoothed L.T. as well as H.T. voltages to avoid modifications to equipment designed for battery operation. Decimetre-wave equipment employed built-in A.C. power packs.

The points of German Army wireless equipment can be briefly summarised as follows. From the mechanical viewpoint, German equipment was very well built, due to the rigid light-alloy castings, anti-backlash gearing and accurate construction methods; Electrically, the equipment was good and efficient, but not modern when judged by British wartime standards, although it was in some cases quite ingenious.



DISCOUNT LISTS.

Members are reminded that a List of Suppliers who are prepared to grant Discount facilities to R.S.A.R.S. members is available from HQ for a SAE. This list is being revised and the new list should contain a number of 'new' suppliers. Items available will include (apart from the normal 'electronics') such things as Furniture, sewing Machines, Jewellery (from Hatton Garden), Kitchen Units, Watches, Bedding, etc. Discounts vary from 2½ to 43%. Due to paper limitations only 300 copies of the new List can be produced. A number will be reserved for Overseas members as some firms listed specialise in Export Orders. SAE to HQ, pse.

Other Lists available from HQ for the asking include Awards Rules, Membership List (with latest amendments), Bankers Order Forms, etc.

NOTE! Re SWL NEWS, November RadCom, page 773. Harry, VQ9RCS, is NOT on the Seychelles and has never been to Chagos. The QSL QTH given is that of the VQ9 QSL Bureau, but it is quicker to QSL to WA1HAA or P.O. BOX 84831, Mombassa. There are 2 boats a year from Mombassa, only 1 from the Seychelles!!!



WANTED - WANTED - WANTED.

Tony Sugdon, G3UNC/RSARS 459 requires any of the following. Have a look around those junk boxes, garden sheds, attics, etc. WS18, Hand type microphone for the WS18, AT22 Vibrator PSU, WS62, Headset for a WS62. Any info, please, to Tony at :

CAPTAIN A. SUGDON, ROYAL SIGNALS. C/O SIGNALS WING, SCHOOL OF INFANTRY, WARMINSTER, WILTSHIRE.

Tanks to Ted, G2AYQ, for sending along a Mic. Hand. No. 4. Tnx.

MALAYAN MEMORIES.

G3VSA/292/VS2DJ 51-55.


Having enjoyed Jimmy's delightful article "A day in the life of a 9M2" in the Autumn 'Mercury' so much, and having had similar enjoyment expressed by the memsahib, I would like to thank Jimmy for bringing back so many memories to us both. It was so real that we could almost smell 'Lavender Bridge' at 0530 hours on the way to the ferry for Butterworth again! - and Jim 'will know what that means!. The smell of fruit down Penang Road drifting from the shops, the superb curry puffs at Whiteway and Laidlaws, the trip into Georgetown on Saturday evening in a Ford Consul taxi from Jades, driven at a pace that suggested that the driver was a qualified pilot!. The Rex Cinema; Chulia Street (where I bought a rare specimen of transformer giving 400-0-400 at 250 mAs, in 1952, which burned out only a few months ago). It all came back, as did some of the less pleasant memories, like the graves in Penang and Taiping Cemeteries, etc. However, it also brought back the memory of a delightful little incident in the old RAF Camp at Butterworth, which we occupied for some time prior to returning to the UK.

One of our families in quarters at Glugor (Minden Barracks) owned several rabbits which were children's pets, and, finding that they had too many of them, kindly gave one to the HQ Signal Section, Being based at Butterworth, the said Section kept their rabbit there too. Each evening, just before 1800 hours they let it out for a run before locking it into its snake-proof cage for the night.

Now it so happened that alongside the Camp, separated only by two strands of barbed wire, was a burial ground which extended up to within a couple of yards of the Mess at the back of the Camp. At the gates of the burial ground was a small mosque, wherein dwelt an Iman; and it appeared that one of his tasks was to nip smartly out at regular intervals from sunrise to sunset each day and scare off the demons by beating a large gong!. One evening whilst the rabbit was being exercised it decided to hop into the graveyard. And, coincident with it so doing, out came the Iman, picked up his stick, and was about to beat the demon gong for the final time that day, when the rabbit suddenly hopped into view!. There they were - one white rabbit, foreign to Malaya, hopping into the hallowed ground, and an Iman about to beat a demon gong. The rabbit won! - the Iman dropped the stick, and, with one almighty howl, fled into his mosque, bolting the door as he went convinced that the demons had finally taken over.

It was a nervous and rather pale gentleman who slowly opened his door next morning and issued forth to beat the gong in daylight, but he was much safer than he thought, for the bunny had hopped right through the graveyard, out on to the main road, and had passed to Valhalla under the wheels of a passing wagon.

To Jimmy, many thanks for the memories OM, best of good wishes to you and the XYL from us both, and Salamat Tuan.

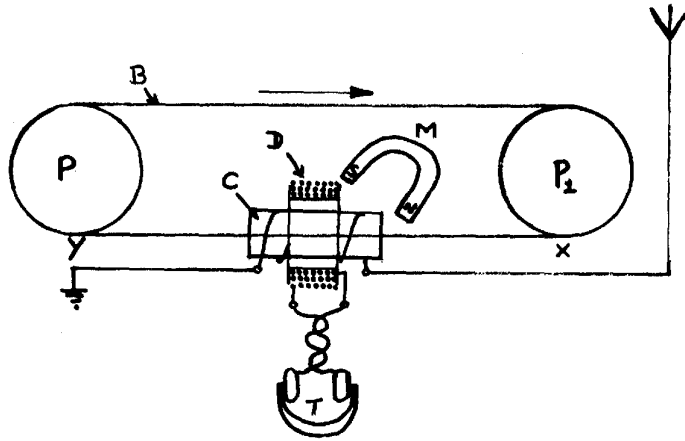


THAT BALANCED MODULATOR!!

Members will, no doubt, have seen the reprint in RadCom of the 'Transistorised' Balanced Modulator which appeared in a 'Flash' Sheet of a previous 'Mercury', and the comments regarding same. It is interesting to note that shortly after the original circuit appeared, a RSARS member took the trouble to ring HQ from the Eastern Counties to inform us that he had built the circuit and "thanks to 'Mercury' I am now successfully on 2 Metres SSB, and the circuit works well". Another local Club (non RSARS) member built a similar circuit into the 'Low-power DSB/AM Transmitter' described in 'TT' in the September 1973 RadCom (page 617) and found that this also worked well (and is still working as far as we know). Modifying DA2ZI's comment elsewhere - "If a circuit works then it is the right one"!!.

THE CLOCKWORK RADIO.

We are indebted to Andy (The Light) Bluer. G3UUZ. who passed to RSARS HQ via Cyril, GW3ASW, a book entitled "The Elementary Principles of Wireless Telegraphy" by H.D. Bangay and published by The Wireless Press Ltd. London, in 1918. This book contained the following article and The Marconi Company, Chelmsford, kindly gave permission to reprint the article in 'Mercury'. Our thanks are extended also to Mrs. Hance, the Historical Officer of The Marconi Company, whose help in getting permission to reprint is much appreciated. - Ed.



(The article starts by giving details of 'Magnetic Induction' and then, goes on to describe how these principles can be applied to 'The Magnetic Detector')

Let us now see how these principles are applied to the magnetic detector. An endless band 'B' consisting of a number of fine strands of iron wire, is passed over two pulleys 'P' and 'P1', one of which is kept slowly revolving by means of clockwork, thus keeping the band moving in the direction indicated by the arrow. The band is made to pass through a small glass tube 'C' around which is wound a single layer of insulated copper wire, the two ends of which are connected, one to the aerial and one to the earth.

A second coil of wire D, consisting of a very much larger number of turns of wire, is also wound around the glass tube, and across this coil is connected a pair of telephones T. A single horse-shoe magnet M is placed in a position similar to that shown in the circuit diagram, with one of its poles (in this case the North pole) close to the band a short distance away from the windings, the other pole a short distance away from the band near the middle of the windings.

Let us now watch the progress of a particular portion of the band while it travels from the point X to the point Y.

It first of all approaches the North pole of magnet, and thereby becomes magnetised as a South pole by magnetic induction. As it proceeds further on its course it gets farther and farther away from the magnetising influence of the North pole of the permanent magnet, but owing to its hysteresis, it will retain a certain amount of magnetism. As it enters the glass tube it commences to come under the weaker influence of the South pole of the magnet, which is tending to make it into a North pole, but unless disturbed it will retain its original residual magnetism as a South pole.

When an oscillating current is induced in the aerial, this current will pass round the single layer winding on the glass tube and allow the magnetism in the iron to be reversed, thus causing a sudden change in the magnetic field, and thereby inducing a momentary current in the secondary coil, to which the telephones are connected.

If, on the other hand, no oscillations are received from the aerial, the iron will pass through the primary tube without having its magnetic polarity suddenly changed, and therefore no sound will be produced in the telephones.

THE CLOCKWORK RADIO - contd.

It will be seen, then, that we have a continuous supply of iron inside the primary tube in such a condition that oscillating currents passing through the coil of wire will cause it to change its polarity suddenly.

Experience has shown that the magnetic detector is quite the most reliable and robust form of receiver which has yet been invented (1918 - Ed.), but although extremely sensitive, it is not as sensitive as the modern crystal detectors. Its reliability, however, makes it a valuable instrument as a stand-by, or in places where experienced operators are not available.

To tune up the magnetic detector to any desired wavelength, an adjustable inductance and an adjustable condenser are joined in series with the demagnetising or primary winding of the detector.

NO TUNING IS REQUIRED FOR THE SECONDARY OR TELEPHONE WINDING, for the currents induced in the secondary are not oscillatory, so that normally the magnetic detector can be regarded as a single-circuit receiver.

(An RSARS Voucher will be given to the first RSARS member who can forward a certificate from two other people, or one other radio amateur, stating that they have heard signals from a home-built circuit as shown in the diagram on the previous page).



?????????

Not long ago a very official looking envelope appeared on the office table. It was marked. "NAVAL INTELLIGENCE". Breaking the seals revealed another envelope, similarly sealed. And another. And another. The final envelope was marked. "TOP SECRET - BURN BEFORE READING". Never able to resist a challenge we closed the office door, put out the light (Security, you know). Withdrawing a piece of paper marked "Submitted by Max and Liz" the following report came to light.

"One cold grey morning our friend Don Ecks crept from his bed and made his way blearily to the shack. He wasn't going to miss the long-awaited XYZ9BF DX-pedition to Blandford Reef. Knobbing quietly but expectantly around 14.080 MHz he heard a weak signal and wrote idly on the scratch pad :-

TO ALL SHIPS = SATURN MERCURY SAIL SATURDAY MORN BEAM BEARING LIMIT 090
E = YEOMAN

Nothing very special about that. It was just the sort of thing that the Yeoman might wish to have sent. Still, odd that such information was not sent in code. He was about to doodle it out of existence when something came to him in a flash. There was more in it than met the eye and it all depended on the Captains name.

Well, what was the captains name AND WHY??

(Your Editor has spent a lot of time looking at this with no result. showing the XYL brought an almost immediate smile of recognition. "Easy" she said (but she always was intelligent - look who she married!). If YOU can sort out the captains name please send it to HQ (it may win you a RSARS voucher if your answer is correct and one of the first three opened on 1st March '75). No guessing, you must say how you managed to find out!)



FROM THE WALLPAPER MAN.

It seems ages since I last scribbled contentedly to you all - quite a few changes have occurred and another of the Society contests have come and gone.

But let's have a look at the last report. Dick, G3NVK, was the winner of the HF Anniversary Contest for this year and he has added yet another plaque to his collection - well done, again, Dick.

The Society VHF Contest was held in September on what must have been, the worst day for weather it was possible to imagine. Some twelve stations are known to have participated and logs mentioned "WX in my location was bleak, with plenty of mist, followed by torrential rain" - G3VYZ/P (near Shaftesbury); "Weather was grim, we were in 8 Oktas of cloud at 1600 feet asl all day and the rain came down like stair rods, virtually non-stop" - G3VSA/P and G3KJW/P (near Leek, how appropriate!) and so on. That members ventured out under such disgusting conditions shows the degree of interest amongst us for VHF. Who won?? - G3KJW/P, Pat Allely. Congratulations, Pat (and Stan, G3VSA); may next year produce better WX, more competitors (and more aurora!!!).

Results: 1st G3KJW/P 46
2nd G3VYZ/P 31
3rd G3YSK 23

(Members will doubtless note that the Society's QSL Bureau Manager is a firm believer in home comforts!!).

It is intended to add Four Metres to subsequent VHF Contests.

Forthcoming events are the 5-59 Contest in November (40 Metre 'phone), in December (80 Metre CW) in January (80 Metre 'phone), and February 40 Metre CW) and then the "Le Touquet Trophy" (CW and RTTY only, all bands) in March. All these Contests are during the second FULL week-end in each month. Rules and timings are available from HQ - just send Jack, G3DPS, a large SAE.

On the Awards Front the following additions have been made between July 1st and 30th September 1974:

SPECIAL AWARD (Europe)	BRONZE CLASP	(300)	<u>GW3XHJ</u>
SPECIAL AWARD (Overseas)	SILVER CLASP	(200)	<u>9H1BX</u>
ANY MODE LADDER		(400/2)	<u>9H1BX</u>
		(350)	<u>G3YSK</u>
CLASS 1 CERTIFICATE		(100)	<u>G3ZOJ</u>
		(100)	<u>G3WXX</u>
			<u>G3ADZ</u>
			<u>G3EFY</u>
			<u>DJ0BU</u>
			<u>G3PJB</u>
VHF LADDER		(40)	<u>G3EKL</u>
CW LADDER		(50)	<u>GW3XHJ</u>
QRP LADDER		(25)	<u>G2HKU</u>
		(12)	<u>G2HKU</u>

It is very gratifying to see a member already on the QRP Ladder - you see it CAN be done!! Well done, Ted, and I hope you get many more contacts with your QRP rig.

A new Society Certificate is on the stocks. It is hoped that it will offer a better visual display than the existing one which was designed (?) and procured when Society funds were extremely low and so expense was kept to a minimum however, details next issue.

And that's it once again - good hunting, good health and CUL

G3EKL

THINGS I HAVE HEARD.

(The following article has, unfortunately, rested in the 'Mercury Pending' far too long. It is included as a little light relief from the more technical aspects of our hobby - Ed.)

Nowadays, four letter words fly around on TV and radio without even the twitch of an eyebrow, but in pre-war days Auntie BBC was very pure and such things were only allowed in down-to-earth plays about WWI. However, I was one of those privileged to hear the Chief Announcer (of all people) drop his famous clanger. In those days they put the records on themselves and, having announced that he was going to play a piece of classical music, there was a moments pause, then the unmistakable sound of a finger impaling itself on a gramophone needle, then in the most perfect Oxford accent, the single word "Damnation"!!.

It wouldn't cause a ripple these days, but in 1934 it kept the newspapers happy for about a week!. It must have been about the same time that I was tuning around Top-Band and suddenly an enormous pre-War Fish -Fone signal complete with carbon mike and generator ripple came up. The message was brief and to the point, delivered in a ripe. Fleetwood accent : "No !+@@" fish, no :£&@X coal, and we're out of &@/X=!** grub. Over and out". The SITREP to end all SITREPS!!.

In the months before the outbreak of WW II German Merchant ships used to show their loyalty to 'The Boss' by sending 'HH' (for Heil Hitler') at the end of their transmissions. We naughty British merchant ship operators used to get them very annoyed by immediately banging on our transmitters and sending the same thing - but with the first character altered slightly!

The Admiralty distinguished itself within a few minutes of WWII starting by sending a P/L message to all merchant ships which read "We are at war with Germany, you are not to go to German ports". Our minds might have been tiny but we were not that stupid!.

November 5th 1940 about 1700 hours - an enormous signal on about 500KHz "RRR de ---- position ---- shelled by enemy battleship". Then a second, and a third.... the realisation that we were less than 10 miles from that position they were giving....., hurried consultation with the bridge..... helm over and get to hell out of it at all of 10 knots...., and I didn't know that my friend Jack Currie was already dead in the shambles that had once been the wireless room of the "Jervis Bay".

Not heard on the air, but too priceless to miss: The scene - US Navy Convoy Conference, Norfolk, Virginia. Actors - United. States Naval Officer and "Yours Truly". UNSO "Say, Bud, I've got a real important job for you and your boys on this convoy". YT "Good, what is it?". UNSO "U-Boat intercept duty, 24 hours a day I want you to tune 500 KHz to 1000 KHz, and when you hear a U-Boat homing call, let the Commodore know". YT "Fine, but what does a U-Boat homing call sound like?". USNO "I dunno, Bud, but if you do hear one let the Commodore know goddam quick". (25 years later I found out what they did sound like and realised that we had heard at least one without knowing what it was!).

Still WWII, but now the Indian Ocean. Time: about 1900 hours. First British ship "Being shadowed by enemy raider disguised as merchant ship. Am turning away and opening fire". About 60 seconds later: Second British merchant ship "Being shelled by enemy raider. Returning fire". And for about 10 minutes they tried to blast the living daylights out of each other. Later on there was a hell of a stink about it!.

Still in the Indian Ocean. Still evening. Message from an American ship "Have sighted periscope. Opening fire". Pass message to bridge. Officer of Watch rings down "Can you come to the chartroom for a minute?". Nip up to chartroom. OOW "The Yanks are building great ships these days. This one is sailing up the main street of Mecca according to the position given".

Not heard over the air but from a Corps source. British Forces have just re-occupied Norway. Red-nosed old OWL Cpl is sending a long message demanding NAAFI supplies. Comes to magic words "Beer, bottles". Gives "AS" and does a quick sum on the back of his Log, dividing ration

THINGS I HAVE HEARD - Contd.

strength of Force by number of bottles requested. Frowns, shakes head, suddenly smiles and carries on sending, but has slight mental black-out and adds an additional zero to the indent amount. It kept the British troops in Norway quite happy.....!

OK, these are some of the things I have heard. But what about you? I am sure that YOUR listening must have been much more interesting, so how about writing it down so that we can all enjoy it?



VHF AERIALS (AND UHF TOO) FOR THE REVISED BAND PLANS.

G3VSA/292.

From 1st February last, the Band Plan for VHF and UHF from 2 Metres up to and including 23 cm were revised in their entirety for the whole of IARU European and Scandinavian areas, including the UK. Thus, in the opinion of your scribe, raising the VHF and UHF bands finally out of the age of the Dinosaur, and into the 20th Century.

For those occasional users of the band who are content to rely on the many available commercial aerials which they have used to date, this article will be of no interest or value. For those who are keen to work the DX by any mode available, and who are chasing elusive contacts for Award purposes; and for those who consider the cost of the commercial article to be prohibitive - read on!

Firstly, dealing with the DX aspects of the VHF/UHF bands, it will be seen that in the revised Band Plan the SSB allocation has been made (note I say "Made" and not "reallocated" - as we only had a calling frequency before) so that it lies just above the CW portions of the band in each case. For the long suffering operator who uses a transverter to get his HF SSB up to VHF this means that he no longer has to sit around 145.41 on 2 Metres, unable to get down to the CW end without retuning his transverter. All that is required, of course, is that he now tunes up for the middle of the combined CW/SSB section of the band, and happily operates on both DX modes at will. There is, however, a snag on the horizon, and this is that the commercially available aerials are generally set up for minimum SWR at the mid-band frequency - in the case of 2 Metres this is 145.00 MHz. and so will not give of their best at the lower end on retuning the gear down there!. With this in mind I offer dimensions for VHF/UHF beams for the home constructor, based upon what I have termed "Centre Frequencies" for the various sections of the bands, so permitting the individual to construct a beam entirely to his own requirements in terms of the operating spectrum to be covered. He can build for maximum efficiency over a limited bandwidth, or for a slightly reduced efficiency over a greater bandwidth; or, if he so desires, he can even build for a full 2MHz coverage of either 2 Metres or 70 cms with a compromise in efficiency and SWR. The main thing to note when deciding on a centre frequency for your own beam, is that they will readily tune HIGHER in frequency without much bother, but object to being tuned very much LOWER (say beyond 200/300 KHz below centre frequency) and will show an SWR to prove the point!.

Matching is no problem whatsoever, and uses a Piston Capacitor type of Gamma Match arm, which is simplicity to construct and adjust for an SWR of 1:1.

Beam details are given for 6 elements in each case, Dipole, Reflector and four Directors; and in these cases are intended for the DX man who wishes to cover a segment of the band which is somewhat less than the whole band. There is no objection to adding additional directors, in which case all additional elements will be of the same dimensions as the last director, i.e. Director 4. The spacing between Directors should be increased slightly with each succeeding element added, thus increasing the "launch velocity" of the aerial. But a word of warning, a super long 2 Metre beam of 50 feet length approximately will have a launch velocity of about 0.98 of the speed of light, and this length is about the limit to which anyone has gone experimentally; for the normal domestic environments I would suggest that you limit your enthusiasm to a maximum of 5 elements on 4 Metres, ten on 2 Metres, 24 on 70 cms and whatever you can get in on 23 cms - even this can be

huge in boom length, my own 8 element on 2 Metres is 12 feet long, and my old 5 elements on 4 Metres was 10 feet 6 inches long!! Need I say that both were built to the dimensions which follow, and work extremely well, having pulled in 8 Countries and some 75 Counties on 4 Metres and 13 Countries and 79 Counties - despite the presence of the Pennines close to the QTH to the North and East, and also despite the fact that I dwell on the Northern slope of a hill at 200 feet asl whilst the hill rises to 257 feet asl behind me and obscures my RF as far as SE, S and SW are concerned, aided by rows and rows of houses which rise to the top of the hill and probably give an extra 30 feet of obstruction in all, making a total of some 87 feet of rubbish rising above me. The mast is only 30 feet high so I have a 57 feet disadvantage before starting - and; please, don't suggest that I erect a tower as I also live within the dreaded statute half-mile of the boundary of my work QTH Manchester Airport - and. in fact, am almost on the end of the main runway!. However, the aerial designs offered have been tested on 4 Metres and 2 Metres by many of us in the NW of the country, and others have built 70 and 23 cms beams to my dimensions - all work as predicted, all bring in the DX, so are tried and tested.

ELEMENT SPACING: Design spacings are :-

Dipole to Reflector	:	0.2 Lambda
Reflector to Director 1	:	0.18 Lambda
Director 1/Director 2	:	0.25 Lambda
Director 2/Director 3	:	0.28 - 0.32 Lambda

etc., etc., to a maximum of :

Director 7/Director 8	:	0.38 - 0.42 Lambda
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If you wish to reduce the boom length, then, go for the lower spacing given, but note that in the case of the Director 2 spacing of 0.25 Lambda, this does give an appreciable increase in forward gain over any lesser spacing, and is very much to be desired if you can do it.

MATERIALS.

Do NOT go along to your local Ham shop and demand the materials - he will charge you retail price and leave you on the floor to recover!! Check the local "Yellow Pages" for aluminium stockists and manufacturers in your area, decide what you want, then ring them for an estimate. You will be very, very pleasantly surprised at the reply.

Requirements are : 1" to 1½" outside diameter alloy (thin wall) tubing for the boom (usually sold in lengths of 12 or 14 feet).

5/16" or 3/8" aluminium tubing for the elements (usually sold in lengths of 14 feet).

You can use thin-wall 3/8" alloy if you want to have strong but, very light elements - but the aluminium is cheaper. You will also require a short length of 1/2" o/d tube for the Gamma Match arm, and 1/4" o/d for the piston section, but I suggest that you pinch a bit of the 1/2" variety from an old BBC1 TV aerial and scrounge the other bit!. Incidentally, all the elements for a 4 Metre beam can be made from old BBC1 TV arrays quite easily - and some dealers have a stock of them which are unsaleable now due to UHF - draw your own conclusion!.

GAMMA ARMS.

The Gamma arm type of piston capacitor is very easy to manufacture from the two pieces of tubing shown in the sketch, and is in use on 4 Metres and 2 Metres regularly. I have not tried sealing it down for the 70 cms and 23 cms aeriels, but there is no reason why this should not be done successfully. Incidentally, this type of matching at VHF is a dream for setting-up, and, once used, I can assure you, you will never muck about with "Co-axial Baluns".

ELEMENT CLAMPS.

Suitable element clamps for the designs are available from the aerial manufacturers, such as 'J' Beams, etc., and clamps suitable for use with the 5/16" diameter element material are available from "N.W. Electrics" - see advert pages of RadCom for address. (Not in latest RadCom - Ed.)

COMPUTER PROGRAM.

Yon didn't think I did it the hard way, did you? - if anyone is interested in the program, and has access to a PDP 8L or similar computer, drop me a line with SAE and I'll send you a copy. There's not much to it and it isn't particularly complicated.

NOTE.

Under "Element Spacing" I have given the maximum dimension as between Director 7 and Director 8 at 0.38 - 0.42 Lambda. Just in case any intrepid soul decides to go the whole hog and build a 24 element beam, may I add that after Director 8 all element spacings will increase progressively to a maximum of 0.5 Lambda; there is nothing to be gained by going beyond the half-wavelength spacing.

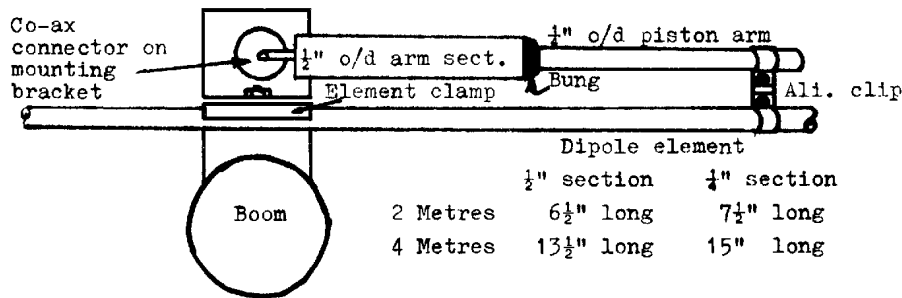
Calculations are based on the ARRL formulae of 5600/f(MHz) for the Dipole, increasing for 5% for the reflectors, decreasing by 5% for Director 1, and progressively by an additional 1% for each succeeding Director element up to the fourth in the case of the narrow bandwidth versions, and up to the final Director in the case of the wide bandwidth variety.

(Editors Note - This article was written by Stan about 1 year ago and due to paper shortages, etc., has been held over until now. It is not known if VSA has made any changes, or developed a MkII version. Members contemplating building this series of antenna might like to contact Stan at : S.E. Aspinall, G3VSA/RSARS 292, 13 Lownorth Road, Manchester, M22 6JY. Don't forget the courtesy of an SAE!)

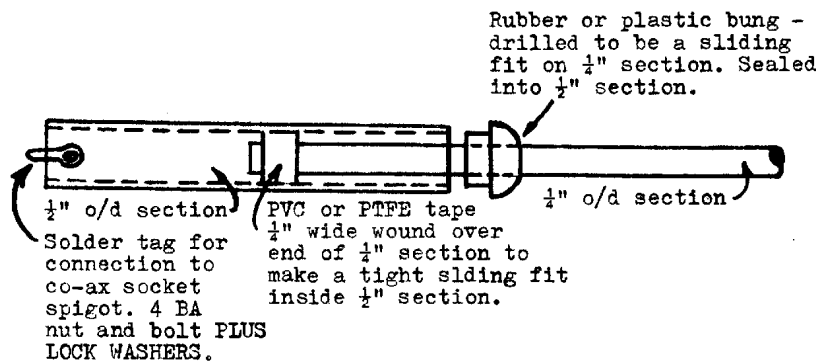
References : Radio Communication December 1973 RSGB
VHF Manual

ARRL

Gamma Match Arms.

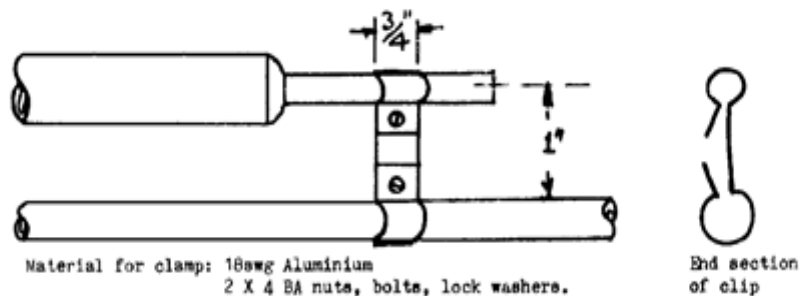
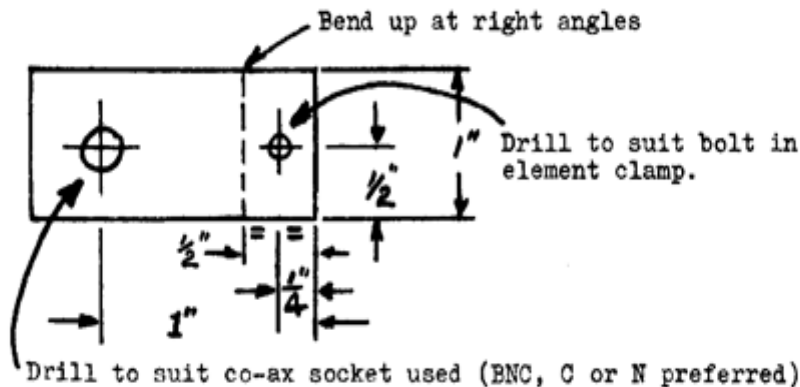


Piston Construction.



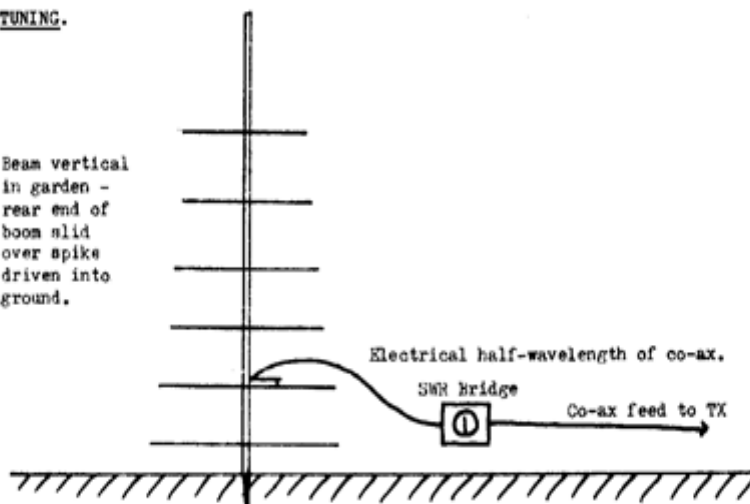
Co-ax. Bracket.

16 SWG Aluminium. 2" X 1".



TUNING.

Beam vertical in garden - rear end of boom slid over spike driven into ground.



1. Adjust TX output for FSD on SWR Bridge in "Forward" position.
2. Alternately adjust 1/4" arm of piston capacitor and clip position for minimum reading on SWR Bridge in "Reflected" position. (This should come down to 1.05:1).
3. Connect co-ax feeder from TX to dipole co-ax socket. Tighten 4 BA screws in clip. Waterproof clip, piston capacitor and co-ax socket/feeder plug with 2 coats of Holts "Dampstart".
4. Hoist into position. Any residual SWR of 1.05:1 will now disappear. (Don't forget to disconnect the SWR Bridge!!).

"FLASH" - SHEET 2.

From GM3MTH, a letter on the subject of WAI (See last 'Mercury'). "...Dear Ed, (A term used by one of your OLDER members). I must, as a RAFARS member come to your defence re letter from that very old member with No.024 (that's going back a bit:). Thanks for all your help re WAI and the reason is very simple and should have been worked out by G3IDG (I Don't Getit), i.e. the name is PADDY!. What could be more logical?,

Again, thanks and keep up the good work, and I hope Hawkeye (I Don't Getit) Herridge will join us in WAI on the new frequency of 3.653 + or - the rubbish, so that I can flog him a Book!. Sincerely, John Paddy Sean McGill GM3MTH/EI2VHA.

Repeaters are very much in the Amateur Radio news these days, but did you know that the first Amateur Radio TELEVISION Repeater was inaugurated on March 1st 1974 under the call-sign WR4AAG. Telecasts are in Black and White and frequencies are 439.25 MHz and 427.25 MHz (latter is the input frequency). The repeater is operational from 8:00 p.m. to Midnight. Further info from WB4JFI. (Tnx CHC Extra).

If you hear call-sign with the prefix ZR you'll be lucky! This is the prefix for the new VHF 'tickets' being issued in South Africa.

For those members contemplating doubling, trebling, etc., up to 144MHz there are a few copies of the "Divide and Print" computer program available from HQ. All frequencies from 144.000 to 146.000 MHz in .001 MHz steps divided by 2, 4, 6, 8, 12, 16, 18. 35p will get you a copy!

CAN YOU HELP?. A letter from G3MIZ/RSARS 801, Major (Rtd) S. Bevan. 1 Coombe Street, Bruton, Somerset. "...Despite my determination to get back on the air and the expenditure of what seems to me vast sums of money I have yet to make my mark on the ether, although I have had a great deal of enjoyment listening on all the Bands.

Like R.L.S. said "It is better to travel hopefully than to arrive"! The trouble is that I live by myself and refuse to live out of tins - I have a small but thriving picture business and I go out a great deal in the evenings. Result?, - absolutely no spare time whatsoever and my ambition to potter along and mess about in boats and with radio gets further and further away.

I have acquired a TC7 and a TC9 and both equipments appear to be working well. But living in a well (almost literally at present, as the whole place is under water) I rarely hear a 2 Metre signal at all - let alone getting a contact. Even the FR400-SDX is very silent on 2 Metres. Portable working is obviously the answer which is why I favoured the Telford gear. But I have no Secondary Frequency Standard which seems to me to be a 'must'.

In the Spring edition of 'Mercury' G3ONU described what seems to me to be the ideal unit for portable use and it seemed so straightforward that I resolved to make it up for myself.

Alas for such optimism. So far I haven't even collected more than half the parts. The two 'Ham' dealers from whom I've ordered the SN 7490's haven't even heard of them (A magazine to hand shows that these are available from Marshall's, 42 Cricklewood Broadway, London, NW2 3HD @ 65p and probably from other suppliers - Ed.). And even if I do get all the bits I can't see myself ever getting down to assembly or making it work. Which brings me to the crunch!. Can you put me in touch with any member who does a bit of assembly as a side line and who would be prepared to make it up, "on repayment" so to speak. Many moons ago I remember in the RSGB 'Bull' there were bods who advertised for work of this nature and presumably they still exist....." 73 G3MIZ. (All offers direct to Tony, please. Here's your chance to help yourself and another member - Ed.)

Barrie, DA2YJ, is hoping to get the BFG Net going again around 3.775 MHz +/- 5 on Wednesday evenings around 1900 GMT from the Club station DA2YV. The Club is also active on 2 Metres with a 'Europea' and a 10 ele. X Yagi up at 60'.

'FLASH' SHEET - Contd.

GIVE THE SHACK A CHRISTMAS PRESENT!

RSARS has been fortunate in obtaining 50 copies only of the Daily Telegraph WORLD ATLAS at the special price of £1-50p to members only. Ideal for the shack or for the junior op. and his homework. This is the new edition and is 210 mm X 260 mm X 10 mm. 10 copies will be reserved for Overseas members (\$4 or £2 Air Mail). The contents include :-

Countries of the World, European Economic Groups, New Local Government Map of the UK, Airline Distances, Milestones in Space, The Moon, Star Charts, Europe Political, British Isles Political, London Region, Southern England, Wales and South-West England, Northern England, Southern Scotland and North-East England, Northern Scotland, Ireland, France, Spain, Italy, The Balkans, Germany and the Alps, The Low Countries, Scandinavia and Iceland, Eastern Europe, The USSR, Asia Political, South-West Asia, South Asia, South-East Asia, China, Japan, Africa Political, North Africa, West Africa, Central and East Africa, Southern Africa, Australia, New Zealand, North America Political, United States of America, Canada, NE USA and South Central Canada, Central America and the Caribbean, South America Political, South-Eastern Brazil and North Argentina, South America, Polar Regions, and 14 World Maps showing :-

International Organisations and Time Zones, Political, Physical, Climate, Vegetation, Soils, Mineral and Fuel resources, Gross National Product and consumption of Energy, School enrolment and Literacy, Races and Religions, Populations and Communications, Infant Mortality and Life Expectancy, Road Density and Passenger Cars, etc.

115 PAGES WITH AN INDEX OF NEARLY 16,000 LOCATIONS.

CANNOT BE REPEATED - FIRST COME - FIRST SERVED!!

MORE NEWS AND VIEWS.

A.G.M. photos are still available as mentioned in the last 'Mercury' at 35p (small) and 45p (large). The response has been somewhat disappointing and it is doubtful if a photographer will be present at the next A.G.M.

G2KO wonders if we have a Philatelic Section. The answer, unfortunately, is no (unless any member cares to organise one!). John is interested in stamps and if any member with similar interests would like to contact him, write :

J.A. NORTH Esq., G2KO, "THE ELMS", BAINTON, DRIFFIELD, N. HUMBERSIDE, YO29 9NJ.

G8VG's junior op is returning to South America shortly and will be operating HC1FOC all bands 160 - 10. Look around 025 and up dependent upon QRM.

Talking about FOC, it is interesting to note that the latest FOC Call-Book shows no less than 47 RSARS members are also members of FOC. Well done!.

AS MOST MEMBERS WILL KNOW BY NOW AN ERROR APPEARED ON THE COMPONENT LAYOUT DIAGRAM OF THE "LATCH-KEY" KEYSER BY G3IBB IN THE WINTER 73/74 EDITION OF 'MECURY'. THE LINE FROM HORIZONTAL 15 SHOULD GO TO VERTICAL 11 AND NOT 12 AS SHOWN. SORRY!!.

For those members who skipped the list of Officials at the front of this 'Mercury', please note that Ray, G3EKL, The Awards Manager, will be moving in February 1975.

A late letter from G. Gallamore, G8BRU, mentions that he is active on 2 Metres SSB with a Liner 2 and an 8 element Yagi at 35'. He was recently surprised to hear a RSARS QSO going on between G3KJW, G3VSA and G2ATM. He joined in and thus made his 2nd, 3rd and 4th RSARS QSOs on 2. His one and only previous QSO had been with G3TLV in Middlewich. So how about pointing those beams in the direction of Manchester, fellahs?, or drop a line for a sked to :-

G. GALLAMORE, G8BRU, "POLDHU", 34 LANGDALE ROAD, PARTINGTON, URMSTON,
MANCHESTER, M31 4NE.

FLASH SHEET - Contd.

RSARS 80 METRE NET.

Due to the rather poor conditions prevailing on 80 at the moment, and due to the fact that the Band often "disappears" around 2030 - 2100 Clock time, the LF Net is tending to meet a little earlier than normal and will often be found "falling in" around 1830 GMT onwards. And whilst on the subject of 80 Metres, don't forget that Jimmy, 9M2DQ, frequents the high end of 80 just outside our top end, listening just below 3.8 MHz. Going even lower in frequency, members have reported that they have had several RSARS QSOs on Top Band, and Norman (away from home at the moment) frequents these frequencies from 9H1BX.

MASSIVE SHACK CLEAR-OUT DUE TO QSY/XYL/LACK OF QRK!.

Ray, G3EKL, has for disposal the following items :
G3IMX (Isle of Wight) trapped Quad, 20/15/10. Still in manufacturers wrapping. Brand New. £20.
CODAR Preselector PR-30, 1.5 - 30 MHz with griff sheet. £3.
Jason FM Tuner FMT-2. With Handbook. £3.
FL DX-2000 Chassis/Case/Front Panel/SWR Bridge & Meter/Filaments & HT transformers, (800V @ 1A). £10.
Interested? contact Ray (QTHR or inside front cover "Mercury") before end of January 75.

AWARDS REMINDER.

Speaking of Ray, our stalwart Awards Manager, prompts a reminder that the RSARS VHF Contest rules have been modified slightly as mentioned elsewhere. The rules now read :
"The Contest will consist of two short operating periods on 70 MHz or higher..." and "held on the Sunday of the Second Full week-end in September..."

CONGRATULATIONS.

To L.V Mayhead, G3AQC, on the Award of the Norman Keith Adams Prize by the R.S.G.B.

MORE ODDS AND ENDS.

G2BPC mentions his advert in a recent RadCom re crystals he has available, these being of particular interest to members intending to use the Four Marks Repeater, GB3SN.

Don't forget that Dominic Smith, RSARS 919, is still looking for modification details for a Pye Vanguard AM25T- Details to : D.J.P. Smith, "Brunswick", Cornwall Gardens, Preston Park, Brighton, BN1 6RJ.

A nice letter to HQ from G4DJI thanking members for his election to Honorary Membership of the Society as a White Stick Operator. Glad to have you "on parade", Duncan.

In QSO with G3YIP, DA1EH asked about a membership certificate for members of RSARS. This is a good idea and a draft membership form has been prepared and is awaiting printing. Should be available to all in the New Year.

M.P. Cunningham-. ZL1BMH/G4CUC/RSARS 1043 is taking an FT-101-B back to ZL-land. with him in March '75. (You may have known 1043 as RSM Cunningham, R. Sigs.).

If visiting the Holywood. area of Northern Ireland, don't forget to drop in and see Geron, GI5DX, who has now retired from teaching and extends an invitation to all members, contact him first at Greenloaning, Rockport Road, Craigavad, Holywood, County Down, N. Ireland., BT18 0DE.

ZL3VJ passes greetings to the President, Council and all members. He is hoping to get in touch with Ken ZLIAXM and has already QSO'd ZL4MI, ZL4IJ and ZL2AAV for RSARS contacts.

The new RSARS Discount List is being prepared and contains several new firms who will grant discount to RSARS members. Already up to 8 pages the final list should be available from HQ in the New Year. Large SAE, please. The list covers furniture, carpets, freezers, refrigerators, jewellery, kitchen units as well as electronic equipment and items.

"FLASH" SPECIAL.

G3DPS

On one of those Sunday afternoons when the bands are dead and it is raining (or snowing!) and you can't make up your mind what to do, settle in the nearest armchair and have a go at the following list. Nothing to do with Amateur Radio, so perhaps it will make a nice change! Allow yourself ONE point for each correct answer.

1. Which British Regiments have, or had, the following nicknames?

The Assayes, Baker's Light Bobs, The Bangers, Bill Brown's, Bingham's Dandies, The Biscuit Boys, The Black Half Hundred, The Bleeders, The Brickdusts, The Buttermilks, Calvert's Entire, The Cauliflowers, Cuyler's Shropshire Volunteers, The Dumpies, The Emperors Chambermaids, The Five and Threepennies, The Holy Boys, The Immortals, The Linseed Lancers, The Orange Lillies, The Pump and Tortoise Brigade, The Trades Union, The Ups and Downs, The Vein Openers. There are 24 points, but so that you don't end up with a big fat 'Zero' for question 1, we'll add one more: Redcaps.

2. On the left some more recent names of British Regiments and on the right some older names of the same Regiments. Can you pair them up?

More Recent names

- i) West Yorkshire Regiment
- ii) Scots Greys
- iii) Coldstream Guards
- iv) Kings Royal Rifle Corps
- v) Kings Own, Scottish Borderers

Older names

- a) Royal American Regiment
- b) Sussex Regiment
- c) Clayton's Foot
- d) Hay's Dragoons
- e) Monk's Regiment

3. In the Order of Precedence of Regiments and Corps of the British Army, does The Royal Corps of Signals come before or after the following Regiments and Corps?

- a) Cavalry of the Line
- b) Corps of Royal Engineers
- c) Royal Tank Corps
- d) Royal Army Chaplains' Department
- e) Royal Malta Artillery

4. The following details, taken from a pre-WW II history, describes a British Regiment. Which one?

At one time they were known as the 13th of Foot, or Prince Alberts. They were formed in 1685 when they were known as "Barrymore's Regiment". "Afghanistan" appears twice on their battle honours, but is spelt with two "F's" in the first case. They are (or were) the only Regiment of the Line where Sergeants wore their red sash over the left shoulder and officers wear their waist sashes tied on the right side. One of their nicknames is "The Yellow Banded Robbers". Their Regimental Tune is (or was) "Prince Albert March". Which Regiment?

5. The Royal Scots Greys have the nickname "Pontius Pilates Bodyguard". How did they get it?

6. Again from a pre-WW II history. One Regiment has/had the unique privilege of wearing a "flash" on the back of the uniform collar. Which Regiment and why? (2 points).

7. Another 'mystery' Regiment. Known as "The Bloody Eleventh" and raised in 1685 by King James II when they were known as "The Duke of Beaufort's Musketeers". In WW I the 2nd Battalion was awarded the Croix-de-Guerre with Palm by the French Government for their service at Bois-des-Buttes in May 1918 when only one officer, one sergeant and twenty men remained of the whole Battalion. In 1831 during riots in Bristol, the Regiment was ordered from Cardiff to protect the City. Sailors refused to take them across so the Regiment seized a ship and sailed themselves across. One Regimental Tune (and a good clue) is "Widdicombe Fair". Which Regiment?

"FLASH SPECIAL" - II.

8. In which Regiment did Christian Davies serve and what was so remarkable about this soldier?.
9. It is well-known that The 11th Hussars (Prince Albert's Own) were known as "The Cherry Pickers", but what would you expect to hear in the Regiment just before the Last Post was sounded, and why?.
10. What was the connection between the 12th Royal Lancers (Prince of Wales's) and question 9?
11. "In the Peninsular War the Spaniards mistook this badge for the figure of The Virgin Mary and this accounts for their curious nickname; it caused much amusement to the men as they received considerable veneration from their allies". Part of the history of a Regimental badge. Which badge and which Regiment?.
12. "The only two bars ever awarded to the Victoria Cross were gained by members of this grand Corps". Although written before WW II it is believed that this statement still holds good. Which Corps?
13. Which County Regiment was completely wiped out (with the exception of the Doctor - the only man to live to tell the tale) at Gandamak in the Khyber Pass in 1841?.
14. Which 1st Battalion of a British Regiment were sent abroad in 1707 and spent 50 years in the West Indies, neglected and forgotten, In 1758 it was reported that the men were dressed in rags and had no hats and in 1759 they were using muskets 50 years out of date. In 1788 the officers had had no pay for seven years. Which Regiment?
15. Which English county had the largest percentage of it's male population fighting in World War I ?.
16. Which Regiment's 2nd Battalion was raised at the expense of The East India Company and were known as "The 76th" (being the third Regiment to bear this number), became known as "The Pigs" due to the poorly designed cap badge (an elephant), at one time had the Duke of Wellington serving as an Ensign, is the only Scarlet clad infantry Regiment to have red facings to their tunic, is the only Regiment named after a person not of Blood Royal, had two additional colours presented by The East India Company, were once spoken of by Lord Blake who said "Bring me my boots and the 76th Regiment of Foot and I am ready to do anything and go anywhere", and who once marched 65 miles in 2 days, had one hour's rest and then helped capture 5,000 men and 72 guns.

Now for the answers.

1. The Assayes - Highland Light Infantry, Baker's Light Bobs - 10th Hussars, The Bangers - The Life Guards, Bill Brown's - The Grenadier Guards, Bingham's Dandies - 7th Hussars, The Biscuit Boys - Royal Berkshire, The Black Half Hundred - Royal West Kents, The Bleeders - Somerset Light Infantry, The Brickdusts - King's Shropshire Light Infantry, The Buttermilks - 4th/7th Dragoon Guards, Calvert's Entire - West Yorkshire, The Cauliflowers - Loyal Regt.(North Lancs), Cuylers Shropshire Volunteers - Royal Ulster Rifles, The Dumpies - 13th/19th Hussars, The Emperors Chambermaids - 14th/20th Hussars, The Five and Threepennies - Shropshire Light Infantry, The Holy Boys - Royal Norfolks, The Immortals - The Duke of Wellingtons, The Linseed Lancers - Royal Army Medical Corps, The Orange Lillies - Royal Sussex, The Pump and Tortoise Brigade - The South Staffordshire, The Trades Union - 1st Dragoon Guards, The Ups and Downs - The Welch Regiment, The Vein Openers - The Royal Worcestershire Regiment, and the 'free' one - Royal Military Police.
2. i - c, ii - d, iii - e, iv - a, v - b.
3. a - After, b - After, c - Before, d - Before, e - Before.
4. The Somerset Light Infantry.

"FLASH SPECIAL" - III.

Answers - Contd

5. Here, if you were fully awake, you may award yourself two extra bonus points, for it is not The Royal Scots Greys that have the nickname "Pontius Pilates Body Guard" but The Royal Scots (The Royal Regiment). History records that whilst serving on the Continent "Douglas's Regiment" (as they were then known, after their Colonel at the time) entered into an argument with the French Regiment de Picardie regarding the antiquity of their respective Corps. The Frenchmen claimed to have been on guard at the Crucifixion whereupon the Scotsmen retorted "Well, if we had been we shouldn't have slept at our posts, but that night we were acting as Pontius Pilate's bodyguard". The name stuck.
6. The Royal Welch Fusiliers. They wear a "Flash" consisting of five black ribbons nine inches long, attached to the back of the collar of all ranks and in all dresses. In 1805 the pigtail for the Army was abolished but the Regiment were at sea at the time that the order was promulgated and as they were thus the last Regiment to carry out the order they obtained the distinction of wearing the black ribbons to commemorate for all time the black leather bag which used to sheath the pigtail or queue and so protect the uniform from grease and powder. William IV upheld this unique privilege in the face of much opposition from 'officialdom'.
7. The Devonshire Regiment.
8. The Royal Scots Greys. At the Battle of Ramillies, it was discovered that Trooper Christian Davies was a woman. She had previously lived with an aunt who kept a public house near Dublin. Here she married one of the waiters who left her. She discovered that he had enlisted as a Private and had been sent to Holland. She therefore decided to enlist also and follow him. She first joined Lord Orkneys Regiment but had to leave after fighting a duel with a Sergeant. She then joined The Royal Scots Greys. Her military career ended after being wounded at Ramillies. She then became a vivandiere (female sutler) before returning to England where she was received by Queen Anne and was granted a bounty of £50 plus one shilling a day. She died in Chelsea Hospital in 1793 and was buried with full military honours.
9. Every night it was the custom before the "Last Post" for the band to play a Spanish Chant or Vesper Hymn as a penance for the sacking of a convent during the Peninsular War.
10. With the 12th Royal Lancers it is after the "Last Post" that five hymns are played, it is said, as a penance for some members of the Regiment having been caught sacking a convent, again during the Peninsular War.
11. The cap badge of the Royal Norfolks which is a figure of Britannia.
12. The Royal Army Medical Corps.
13. The Essex Regiment.
14. The South Staffordshire Regiment.
15. Hampshire. It is also said that the village of Meonstoke, Hampshire, lost a larger percentage of it's men killed in WWI than any other village.
16. The Duke of Wellington's Regiment.

Scores.

- 52 - 55 You've been cheating or your maths are bad.
45 - 52 You're in the wrong job. You should be an Historical Adviser at the Min of Def.!.
35 - 45 Not bad. You certainly know your military history.
20 - 35 Fair. A lot of interesting facts haven't come your way.
0 - 20 Just where have you been all these years?

(Most of the details given above are taken with acknowledgements, from "The British Army, It's history, customs, traditions and Uniforms" by Paymaster Lieut.-Cdr. E.C. Booth, R.N.R. published in London by Sampson Low, Marston & Co., Ltd in about 1937 - Ed

"FLASH SPECIAL" - IV.

MEMBERS FACILITIES - R.S.A.R.S. LIBRARY.

DON'T FORGET - the Library held at R.S.A.R.S. HQ. Although not large, it contains several interesting books which are listed below and are available to all members. HQ also has a number of back issues of RadCom/RSGB Bulletin, SWM, etc., available for loan. These are incomplete, and, if any members have surplus copies of ANY radio or electronic periodicals (of any vintage) please don't load the dustman, send them along to HQ. Postage will be refunded where required.

To borrow a book from the RSARS Library just drop a card or letter to HQ stating which book(s) you would like to borrow. The book(s) will be forwarded to you and may be retained for one calendar month (longer by special arrangement). Members should then return the book(s) TOGETHER WITH LOW DENOMINATION POSTAGE STAMPS TO THE VALUE SHOWN ON THE ENVELOPE FROM HQ. Thus, members pay only two-way postage - there is no charge for the loan of the book(s).

At present the library consists of:-

WORLD AT THEIR FINGERTIPS - AMATEUR RADIO CIRCUITS BOOK - RTTY A - Z - ARRL ANTENNA BOOK - ELECTRONIC COMPUTERS - RADIO COMMUNICATION HANDBOOK (4th Ed.) RADIO AMATEURS HANDBOOK (1972) - HINTS AND KINKS FOR THE RADIO AMATEUR - RADIO AMATEURS OPERATING MANUAL - 101 WAYS TO USE YOUR SIGNAL GENERATOR - 101 WAYS TO USE YOUR OSCILLOSCOPE - SINGLE SIDEBAND FOR THE RADIO AMATEUR - A COURSE IN RADIO FUNDAMENTALS - SHOP AND SHACK SHORTCUTS - RADIO DATA REFERENCE BOOK - ELECTRICAL INSTRUMENT MEASURING PRACTICE - APPLICATION OF THE ELECTRONIC VALVE - TRANSMITTING VALVES - FUNDAMENTALS OF RADIO VALVE TECHNIQUE - HANDBOOK OF WIRELESS TELEGRAPHY (VOLS. I & II) 1936 - PHILLIPS SEMICONDUCTOR MANUAL 1964 - COMMUNICATION RECEIVERS - VADEMECUM (1931) - THE ELEMENTARY PRINCIPLES OF WIRELESS TELEGRAPHY (1918) - THE SERVICES TEXTBOOK OF RADIO, VOL. I ELECTRICAL FUNDAMENTALS - VOL. II ELECTRONICS - VOL. V TRANSMISSION AND PROPAGATION - VOL. VII RADIOLOCATION TECHNIQUES - HANDBOOK OF LINE COMMUNICATION (1947) - CR-100 MANUAL - R-107 CIRCUIT AND NOTES - INSTRUCTIONS FOR THE AR-8LF - INSTRUCTION MANUAL FOR THE SOMRSCOPE TYPE CD-814.

GREAT CIRCLE CHART.

DON'T FORGET ALSO - A Great Circle Chart, based on the exact location of YOUR shack, is available for £1-25 including postage and packing, from RSARS HQ. This Chart lists approximately 1,500 world-wide locations and gives the Latitude and Longitude of the distant location, the distance in Nautical Miles, Statute miles and Kilometres, also the bearing to and from your shack. Just give YOUR location in DEGREES and MINUTES. Order from RSARS HQ.



"FLASH EXTRA".

With this copy of "Mercury" you should find a small advertising leaflet from MFJ ENTERPRISES, P.O. BOX 494, MISSISSIPPI STATE, MISSISSIPPI, 39759, U.S.A. giving details of a couple of their products. Enclosed with the covering letter from Martin Jue, K5FLU, were two copies of the MFJ catalogue with a promise of more copies for members, if required. To save you waiting while these are obtained from the U.S.A. it has been decided to extract points of interest from the catalogue together with some details of equipment offered. MFJ have plans for several new items for the amateur radio market including Deluxe 6-Band VFO controlled QRP CW TX or Transceiver, 160 Metre Receiving Converter, Effective, distortion free SSB speech processor for around \$30, a combination super CW/SSB peak-notch filter, an accurate 10 minute ID Timer, a low-cost full feature 512-bit memory keyer, an RF actuated CW Monitor, etc. etc. At the moment, these are ideas but already 'on the shelves' are the following items :



MFJ CW FILTER - CWF-2BX.

The IMPROVED CWF-2-BX offers RAZOR-SHARP SELECTIVITY with its 80 Hz bandwidth and extremely steep-sided skirts. Even the weakest signal stands out. No audible ringing. Reduces background noise. No impedance matching. No insertion loss (see below). 8-pole active filter design uses IC's. Bandwidth (selectable) 80 Hz, 110 Hz, 180 Hz. Skirt rejection at least 60 dBs down one octave from centre frequency for 60 Hz bandwidth. Centre frequency - 750 Hz. Uses 9 Volts transistor radio battery (not included), In the 80 Hz position, if we compare two equal amplitude signals, one at centre frequency and one at twice or half centre frequency, then the signal off centre frequency would be 1000 times weaker than the signal at centre frequency. Signal to noise ratio is proportional to the logarithm of the bandwidth ratio, i.e. if your receiver or transceiver has a bandwidth of 2.5 KHz and the filter is switched in at the 60 Hz position the improvement in the Signal to Noise ratio is 15 dBs ($10\log 2500/80 = 15$ dBs). This is equivalent to obtaining an increase of 3 'S' Units (assuming 5 dBs per 'S' Unit) simply by switching in the filter. All background noise is drastically reduced. There is no Insertion Loss IN FACT, THERE IS A GAIN IN EACH SELECTIVITY POSITION!. Typically 160 Hz, 110 Hz and 80 Hz gains are, respectively 1.2, 1.5 and 2.4. The CWF-2 almost totally eliminates ringing by using the technique of 4 LOW 'Q' STAGES. This filter offers a very low output impedance and a very high input impedance. Requires no impedance matching for optimum performance. Loads greater than 500 Ohms produce some distortion which does not affect copying. Centre frequencies of 400 Hz or 1000 Hz available for extra \$3. The CWF-3 is a Mini-Filter, similar to the above, is cheaper but does not have the 80 Hz position.



MFJ SSB FILTER SBF-2BX.

Designed for use with SSB signals, this Filter has a four position selectivity switch which allows selection of : 1) High Pass filtering only (lower 3dBs cut-off is 375 Hz) to remove low frequencies, 2) High Pass plus Low Pass filtering with Low Pass cut-offs at 2.5 KHz, 3) 2.0 KHz and 4) 1.5 KHz (a sharp 120 dBs per decade, i.e. 36 dBs per octave roll-off is available in the 1.5 KHz position) to remove high frequencies. The Power Switch by-passes the Filter in the "OFF/OUT" position. All the above filters can be fitted between the Phones Jack and Phones or Speaker terminals and Speaker or fitted within the Receiver/Transceiver in the audio stages. The SSB filter can also be fitted after the Speech Amplifier in the TX to remove low frequency, high power speech components. Remember, speech components below 500 Hz contain approximately 50% total speech power but contribute only about 10% to intelligibility.(Schultz, "Effective Speech Transmission", "CQ" for January 1970, p.50).

"FLASH EXTRA - II"

MFJ CMOS ELECTRONIC KEYSER.

Uses digital CMOS electronics and NE-555 sidetone. Built-in key with adjustable contact travel. Sidetone and speaker. Adjustable tone and volume. Jack for external key. 4-position switch for TUNE, OFF, ON, SIDETONE OFF. Two output jacks : direct relay and grid block keying (relay models only). Uses 4 penlight cells (not included). Self-completing dots and dashes. Jam proof spacing. Instant start with keyed time base. Perfect 3:1 dash to dot ratio. 6 to 60 words per minute. Relay (30 VA to 250 VDC, 1½ Amps max.) or transistor (0.5 Amps to 40VDC) output. Character duration and spacing are always perfect. Sidetone oscillator uses NE-555 timer IC for plenty of volume. Both tone and volume are fully adjustable using internal trim pots.

QRP TRANSMITTER MFJ-40T.

This is a 40 Metre (7.0 - 7.2 MHz) crystal controlled (3 crystals). Tuning has been eliminated by using a broadband design. A low-pass filter Pi network output produces an exceptionally clean output waveform with low harmonic content. This TX is designed to drive an unbalanced 50 Ohms resistive antenna load. The PA output transistor is protected against burn-out during temporary periods (30 seconds) of no load, dead short or somewhere in between at the antenna output. Can be operated from MFJ-12DC regulated AC power supply or 12 or 6 Volts batteries. Lowering supply to 6 Volts gives 3/4 Watt input or raising voltage to 14 Volts gives 7 Watts input.

MFJ-40V VFO.

Can be used with the above transmitter in place of the crystals. Smooth 8:1 vernier dial covers 7.0 - 7.2 MHz. FET Seiler oscillator is ultra-stable and provides less than 100 Hz drift after warm-up. Output is flat to within 2 dBs over entire tuning range. Requires 12 Volts DC power supply.

Other items shown in the catalogue include :

QRP POWER SUPPLY. Delivers up to 1Amp at 12 VDC. This unit will simultaneously power the QRP TX, VFO, CW Filter, Electronic Keyer and the Frequency Standard.

500mW PROGRAMMABLE AUDIO AMPLIFIER. 500 mW RMS power into 8 Ohms. One resistor programs the voltage gain from 10 to 1000. One capacitor programs the High Frequency response from 500 Hz to 20,000 Hz. Less than 1% harmonic distortion at 500 mW. Operates on 4 Volts to 12 Volts.

1 WATT AUDIO AMPLIFIER. Smooth response from 70 Hz to well beyond 20 KHz. 1% total harmonic distortion at 1 KHz for ¼ Watt into 8 Ohms. 150mV input for 1 Watt output. 500 KOhms input impedance. Short term (10 seconds) short circuit proof. Uses 12 to 20 VDC. Low zero signal.

2 WATT AUDIO AMPLIFIER, 8 POLE LOW PASS FILTER, 8 POLE LOW PASS FILTER WITH DC RESPONSE, TUNABLE NARROW BANDPASS FILTER, 4 POLE HIGH PASS FILTER, 4 POLE LOW PASS FILTER, WIDE BANDPASS FILTER, MODIFICATIONS TO MAKE THE CWF-3 FILTER INTO A VARIABLE FREQUENCY PEAK-NOTCH FILTER.

MFJ offers two package deals : The CWSBF-2BX Filter Twins being the CW and SSB Filters previously mentioned. The UK price is not known at present, the USA price, before shipping, handling charges etc., is \$45.90

THE UK AGENTS FOR MFJ ENTERPRISES ARE : -

WALTERS & STANTON ELECTRONICS, HOCKLEY AUDIO CENTRE, 22 SPA ROAD, HOCKLEY, ESSEX. Telephone : 03704-6835.



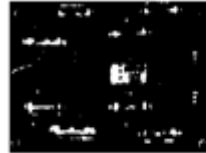
CW TYPE?

Ray, G3EKL, sent along a very interesting advert by MFJ Enterprises, P.O. Box 494, Mississippi State, MS, 39762, U.S.A. giving details of their CW Filter. Bandwidth - 80 Hz, 110 Hz, 180 Hz (switchable), Skirt rejection - At least 60 dB down 1 octave from centre frequency for 80 Hz b/w, Centre freq. - 750 Hz, Insertion Loss - Nil (has a typical gain of 1-2 at 180 Hz, 1-5 at 110 Hz and 2-4 at 80 Hz), Impedance matching - Nil required. More info from above QTH.

CW FILTER



New Model CWF-2BK—\$19.95.
Ready to use. Please include \$1.00 postage.



Model CWF-2—\$12.95, Kit.
\$14.95 Wired, tested, guaranteed.
Please include 55c postage.

- Out Razor Sharp selectivity from any receiver or transceiver.
- Extremely high skirt rejection.
- Dramatically reduces all background noise.
- No outline ringing.
- No impedance matching.
- Ultra modern active filter design uses IC's for super high performance.

We have what we think is the finest CW filter available anywhere. The 80 Hz selectivity with its steep sided skirts will allow you to pick out one signal and eliminate all other QRM and QRN. Simply plug it into the phone jack or connect it to the speaker terminals of any receiver or transceiver and use headphones, small speaker, or speaker amplifier. Better yet, connect it between any audio stages to take advantage of the built in receiver audio amplifier.

Build the 2"x3" CWF-2 PC card into your receiver or get the self contained and ready to use CWF-2BK and plug in!

SPECIFICATIONS

BANDWIDTH: 80 Hz, 110 Hz, 180 Hz (Switch selectable)
 SKIRT REJECTION: At least 60 db down 1 octave from center frequency for 80 Hz bandwidth
 CENTER FREQUENCY: 750 Hz
 INSERTION LOSS: None. Typical gain 1-2 at 180 Hz BW, 1.5 at 110 Hz BW, 2-4 at 80 Hz BW
 INDIVIDUAL STAGE Q: 4 (minimizes ringing)
 IMPEDANCE LEVELS: No impedance matching required
 POWER REQUIRED: CWF-2 . . . 6 volts (2 ma.) to 30 volts (8 ma.); CWF-2BK . . . standard 9 volt transistor radio battery
 DIMENSIONS: CWF-2 . . . 2"x3" PC board; CWF-2BK . . . 4"x3 1/4"x2 3/16" (Black winkle steel top, white aluminum bottom, rubber feet)

TRY this fantastic CW filter. If you don't think it is the best you have ever used, ask for your money back. We will cheerfully refund it. These filters carry a full one year warranty.

Write for FREE brochures and complete test reports. Other IC active filters available: CW and filter (75"47"), low pass, high pass, and wide bandwidth filters. Audio amplifiers: 10, 1, 2 watts. Crystal oscillator.

MFJ ENTERPRISES

P. O. Box 494, Mississippi State, MS 39762

<p>FREQUENCY STANDARD</p> <ul style="list-style-type: none"> • Model MFJ-100BX assembled, tested, guaranteed . . . \$19.95 • Strong, precise, markers every 100, 50, 25KHZ as selected by 4 position switch • Precisely zero beat to WWV • Deluxe 3 1/4 x 2 3/16 x 4 cabinet • FBT oscillator, divide by 4 IC 	NAME _____ CALL _____	
	ADDRESS _____	
	CITY _____	
	STATE _____ ZIP _____	
	<input type="checkbox"/> PLEASE RUSH FREE CATALOG. <input type="checkbox"/> PLEASE RUSH THE FOLLOWING FILTERS:	
	QUANTITY	MODEL NO. TOTAL PRICE
	PLEASE INCLUDE POSTAGE AND HANDLING	
	TOTAL ENCLOSED	

EXTRA BITS AND PIECES.

Further to the QRP details overleaf, whilst browsing through some back copies of "CQ", the following QRP Award details came to light. Acknowledgements are made to "CQ" Magazine for permission to reprint.

QRP DXCC.

This Award requires that an applicant work 25 ARRL DX Countries whilst running not more than 5 Watts OUTPUT for the Basic Certificate, with increments of 25 Countries for endorsements at the 50 and 75 Country level. Upon presentation of QSL proof of contacts with 100 ARRL DX Countries, a handsome trophy will be awarded to the applicant. See "CQ" December 1972, page 61, for a photo (with bikini model included) for the first QRP DXCC Trophy awarded to K4OCE, who now has somewhere around 150 Countries.

MILLIWATT DXCC.

This is the ultimate in QRP Awards!. An applicant is required to work 20 ARRL DX Countries whilst running LESS THAN 1 WATT OUTPUT for the Basic Certificate, with 20 Country increments for endorsement stickers at the 40, 60 and 80 Country levels, and upon presentation of QSL proof of contacts with 100 DX Countries the applicant will be awarded a suitably engraved hand-some trophy. W4VNE is leading the pack for MilliWatt DXCC to date (December, 1973 - Ed.) with 76 Countries. Complete details on these Awards are available from ADE WEISS, "The Milliwatt", 213 Forest Avenue, Vermillion, South Dakota, 57069, United States of America.

The '8' Code.

Many members, particularly the ardent TV fan, will be familiar with such expressions as "10 - 4" used by all good American policemen. "CQ" contributor Jerry Hagen, WA6GLD, offers the following '8' Code in his "DX" column in the December 1973 issue of "CQ".

- 8-3 "He shut down an hour ago - you can stop calling him now!".
- 8-4 "I hear you 5 by 9 - I just don't want to talk to you".
- 8-5 "You're beautiful when you're mad".
- 8-6 "What do you expect - the other chap only got a 3 by 4".
- 8-7 "Use a dummy load, stupid".
- 8-10 "I give up - see you next pile-up".
- 8-19 "Sorry about that, Chief".
- 8-20 "May the Great Kahuna befoul your RF Clipper".
- 8-21 "Great Scott, do you get paid by the word?".
- 8-25 "I hope they catch you".
- 8-30 "What's his call?".
- 8-35 "This has to be the worst-run DX-pedition ever".
- 8-50 "Bug Off".
- 8-51 "He's listening 10 KHz up - so quit calling him on his frequency, idiot!".
- 8-54 "He's working by call areas, so wait your turn, Lid".
- 8-57 "He's working from a list - so shut up, stupid".

The above list came from The Southern Californian DX Club Bulletin. We hope that these codes never have to be used on the RSARS Net, but it is easy to understand how they could be applicable to some DX-pedition pile-ups!.

Rev G.C. Dobbs, G3RJV,
61 Park Street,
Cleethorpes,
South Humberside.

QRP Club.

Dear RSARS Members,

Following the notes in the October S.W. Magazine there has been a modest but enthusiastic response - some 20 would-be members. I think there are still a lot of potential members, who still have to be informed about a possible organisation, so please, spread the word about.

Even with the response so far, I believe that some useful form of Group could be made. I am open to any ideas, but at the moment, I will attempt to get together a list of QRP Ops with their interests, for circulation. I hope that some kind of modest Journal may be attempted and I am in the process of looking into possible cost, etc., at the moment.

A RSARS member has kindly offered to present a Challenge Cup for annual presentation. He suggests not for a contest, but for the best annual QRP contact (barring the help of huge commercial beams, etc.) Once again, ideas are welcome.

Quite clearly, from the letters, many QRP Ops are keen on home construction and modification and probably a Journal could include articles and circuits of QRP interest as well as news. A 'G' contest has been suggested, but I feel that this is well handled, at present, by the DL AGCW Contest.

Finally, the definition of 'QRP'. In the States, there is a QRP club with a journal "The Milliwatt" taken by several people in the U.K. The Stateside QRP ARC has a limit of 200 Watts P.E.P. or 100 Watts CW!! Naturally, this is our QRO. I suggest QRP, for the purpose of a Club, being 5 Watts and under. (The RSARS QRP Award states '11a. Claims submitted for the RSARS QRP Certificate are to include a signed statement that all QSO's claimed were made with a power to the stage energising the antenna NOT EXCEEDING 5 Watts DC or 13.5 Watts PEP or equivalent" - Editor).

Below, I enclose two forms for you to fill in to help me with the future organisation of a Club. Please return them as soon as possible with an SAE (no funds yet!) and I will be grateful for any other ideas.

Please spread the word about.

73's George, G3RJV.

.....please cut.....please cut.....

Assuming you are interested in a QRP Club please tick your possible interests from the list below:

A JOURNAL ()

- Articles on: HOME CONSTRUCTION.... () QRP CONTESTS..... ()
- MODS OF COMM. EQUIPMENT..... () RALLY/CONVENTION.... ()
- REPORTS ON COMM. EQUIPMENT.... () ARRANGING SKEDS..... ()
- QRP DX NEWS..... () SPECIAL BADGE..... ()
- ADS AND SWAPS..... () QRP AWARDS..... ()

Suggested name of Club :

Suggested Power Limit :

.....
CALL-SIGN..... RSARS No...... NAME

FULL QTH

QRP OPERATION (Bands, Power, equipment, etc.)

SPECIAL INTERESTS

ROYAL SIGNALS AMATEUR SOCIETY.

THE LE TOUQUET TROPHY.

1. The Le Touquet Trophy has been presented to the Royal Signals Amateur Radio Society by Ken Cook (RSARS 530) to be used as a perpetual challenge award for members competing in the art of CW and RTTY communication.
2. The Trophy will be competed for annual between members of the Society and will be available for presentation to the winner at the AGM.
3. The Contest will consist of one operating period held over the second full Week-end in March commencing at 1200 GMT Saturday and finishing at 1200 GMT Sunday. The only modes allowed are CW and RTTY.
4. Entrants must adhere strictly to the terms of their licence(s) and observe Band Planning regulations where applicable.
5. A contact will consist of an UNASSISTED exchange of Signal Reports, RSARS Membership Numbers and QTH.
6. Members may contact each other ONCE ONLY.
7. Points can be scored as follows :-
 - a) For contacts between members within Zone 14 (including the Mediterranean Islands) :
Any Band - Each CW QSO = 1 Point.
Each RTTY QSO = 2 Points.
 - b) For contacts between members within Zone 14 (including the Mediterranean Islands) and any other part of the World :
Any Band - Each CW QSO = 3 Points.
Each RTTY QSO = 6 Points.
 - c) For contacts between members outside Zone 14 (excluding the Mediterranean Islands)
Any Band - Each CW QSO = 5 Points.
Each RTTY QSO = 10 Points.

8. Entries will be Submitted as follows :-

Serial No.	Date Time On	Time Off	Freq.	Station Worked Call-sign RST	RSARS QTH No.	Points claimed
------------	-----------------	----------	-------	---------------------------------	------------------	-------------------

The reverse of the last Log Sheet submitted requires a signed declaration that the entrant has adhered to the rules of the Contest and their own licence regulations.

9. The winner will be the member with the highest score irrespective of location. The Society will donate a small plaque to the winner for his retention.

10. The decision of the Society Awards and Contest Manager must be accepted as final. He may amend or supplement the rules of the Le Touquet Trophy as necessary. Such alterations must be published in the Winter edition of "Mercury" preceding the Contest.



ROYAL SIGNALS AMATEUR RADIO SOCIETY

THE RSARS QRP AWARD

To encourage low power working on the amateur bands, the Royal Signals Amateur Radio Society offers the RSARS QRP Award to members.

1. The Award shall be issued as follows.:

	EUROPE	OVERSEAS	REMARKS
BASIC QRP CERTIFICATE Sticker increments at the 20/30/40 points et seq for "European" members and at 10/15/20 points et seq for "Overseas" members.	12	6	Confirmation on Any Band, Any Mode with the additional proviso of para. 11A.

2. The following paragraphs of the rules for The Basic Certificate, First Class Certificate, CW Certificate, Special Award Plaque and The VHF Certificate also apply to this Award :-
1. 2. 3. 4. 5. 6. 7. 8. 9. 11 and 12.

3. The following paragraph, numbered 11A, should be added to the existing Rules.:

11A. Claims submitted for the RSARS QRP Certificate are to include a signed statement that all QSO's claimed were made with a power to the stage energising the antenna NOT EXCEEDING 5 Watts DC or 13.3 Watts PEP or equivalent.



R.S.A.R.S. NET DETAILS

LF PHONE

MONDAY	1100 GMT	3.650 MHz	+ or -	PHONE	RSARS FAR EAST NET
MONDAY	1315 GMT	3.720 MHz	+ or -	PHONE	EUROPEAN NATTER NET
TUESDAY	1315 GMT	3.720 MHz	+ or -	PHONE	EUROPEAN NATTER NET
TUESDAY	2000 GMT	3.720 MHz	+ or -	PHONE	EUROPEAN CONTROLLED NET
WEDNESDAY	1100 GMT	3.650 MHz	+ or -	PHONE	RSARS FAR EAST NET
WEDNESDAY	1315 GMT	3.720 MHz	+ or -	PHONE	EUROPEAN NATTER NET
THURSDAY	1315 GMT	3.720 MHz	+ or -	PHONE	EUROPEAN NATTER NET
THURSDAY	2000 GMT	3.720 MHz	+ or -	PHONE	EUROPEAN CONTROLLED NET
FRIDAY	1100 GMT	3.650 MHz	+ or -	PHONE	RSARS FAR EAST NET
FRIDAY	1315 GMT	3.720 MHz	+ or -	PHONE	EUROPEAN NATTER NET
SATURDAY	1030 GMT	7.075 MHz	+ or -	PHONE	EUROPEAN NATTER NET
SUNDAY	1030 GMT	3.720 MHz	+ or -	PHONE	EUROPEAN NATTER NET

HF PHONE

TUESDAY	0100 GMT	14.275 MHz	+ or -	PHONE	RSARS WESTERN HEMISPHERE NET
TUESDAY	1100 GMT	14.175 MHz	+ or -	PHONE	RSARS FAR EAST NET
WEDNESDAY	1300 GMT	14.275 MHz	+ or -	PHONE	RSARS WORLD-WIDE NET
WEDNESDAY	1315 GMT	3.720 MHz	+ or -	PHONE	EUROPEAN NATTER NET
THURSDAY	0100 GMT	14.275 MHz	+ or -	PHONE	RSARS WESTERN HEMISPHERE NET
THURSDAY	0100 GMT	14.275 MHz	+ or -	PHONE	RSARS WESTERN HEMISPHERE NET

OTHER HF PHONE FREQUENCIES

21.375 MHz + or -, 28.575 MHz + or -, (dependent upon bands).

VHF PHONE

TUESDAY	BETWEEN 1900 and 2000 GMT	70.22 MHz	NATTER NET
MONDAY	BETWEEN 1900 and 2000 GMT	145.33 MHz	NATTER NET
FRIDAY	BETWEEN 1900 and 2000 GMT	144.33 MHz	NATTER NET

LF CW

WEDNESDAY	2000 GMT	3.575 MHz	+ or -	CW	EUROPEAN CONTROLLED NET
SUNDAY	1030 GMT	3.575 MHz	+ or -	CW	EUROPEAN NATTER NET

(A Natter Net often forms around 3.575 MHz + or - after the Phone Net has started on Tuesday evenings. Check with PhoneNet Control or monitor 3.575 MHz + or -).

HF CW

FRIDAY	1900 GMT	7.025 MHz	+ or -	CW	NATTER NET
SATURDAY	1500 GMT	14.075 MHz	+ or -	CW	NATTER NET
SUNDAY	1500 GMT	21.075 MHz	+ or -	CW	NATTER NET

VHF CW

SATURDAY	1900 GMT	145.320 MHz	+ or -	CW	NATTER NET
SUNDAY	1500 GMT	144.025 MHz	+ or -	CW	NATTER NET

LF RTTY

FRIDAY	2000 GMT	3.590/QSY		RTTY	NATTER NET
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HF RTTY

SATURDAY	1600 GMT	14.090/QSY		RTTY	45.45 BAUDS, CALL RSARS ON THE HR.
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OVERSEAS NETS

MEMBERS ARE ENCOURAGED TO ORGANISE NETS TO SUIT LOCAL CONDITIONS/TIMES/BANDS ETC., AND U.S.A. MEMBERS ARE INVITED TO ARRANGE A 6 METRE NET. ALL DETAILS OF NET WORKING, CURRENT AND PROPOSED, SHOULD BE SENT TO RSARS HQ FOR INCLUSION IN 'MERCURY'. ALL MODES; CALL "CQ RSARS" OR "CQ ROYAL SIGNALS AMATEUR RADIO SOCIETY". DURING QSOs SIGN "G1ABC DE G2DEF BT BOTH RSARS" OR "ONONO DE G7GHI BT RSARS K". DO NOT JOIN THE INITIALS 'RSARS' TO YOUR CALLSIGN IN ANY WAY. IN GREAT BRITAIN THIS IS ILLEGAL UNDER HOME OFFICE REGULATIONS. DO NOT WAIT FOR THE ABOVE NET TIMES BUT CALL "CQ RSARS" AT ANY TIME ON THE ABOVE FREQUENCIES - YOU NEVER KNOW WHO IS LISTENING!. WHEN JOINING A NET ALWAYS CHECK IN WITH NET CONTROL FIRST AND BOOK OUT WHEN LEAVING. IN GROUP WORKING, WHEN A NET CONTROL STATION APPEARS, PLEASE HAND THE NET OVER TO HIM. REMEMBER - FOR AN 'OFFICIAL' RSARS QSO YOU MUST PASS UNASSISTED YOUR NAME, QTH, RSARS NUMBER AND THE OTHER STATIONS REPORT.