

# MERCURY



NUMBER 72

JULY 1982

## ROYAL SIGNALS AMATEUR RADIO SOCIETY

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Applications for membership and general correspondence on RSARS matters should always be sent to:  
The General Secretary, HQ RSARS, Trade Training School, 8th Signal Regiment, Vimy Barracks,  
Catterick Garrison, North Yorkshire, DL9 3PS. Telephone: 0748 832521 Extension 2612.

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Society fees are currently: Annual UK members £2, Annual Overseas members £3, Life Members (after five years consecutive annual membership) £25. Affiliated Clubs £2 annual. Membership fees are due on January 2nd each year. MERCURY will not be forwarded after the Spring edition if membership fees are not paid. Members who have not paid annual fees will be removed from the membership list on April 30th.

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# THE OWL'S BAT

BEING INFORMATION RECEIVED FROM A VARIETY OF SOURCES, THE ACCURACY OF WHICH IS SOMETIMES DOUBTFUL ALTHOUGH THE OWL ASSURES US THAT IT'S ALL TRUE!.

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The OWL reports that he saw Cyril, G3YSZ, normally resident in the Eastbourne area, on holiday for a month or so in the Yoxford, Suffolk area during June.

.....Leonard, RSARS 1283 was seen to approach G3WRY at the Ally Pally Rally on the scrounge for a fill of tobacco for the ex-XSN pipe he now has, but "the blighter didn't have any with him" 1283 was heard to mutter as he moved on. On May 21st this year 1283 was due to meet G3MUM at King's Cross station where Peter was going to make an overnight hotel stop on his way to Ostend. The OWL also reports that the nurse accompanying Peter is pretty and aged around 22. 1283 was last seen picking a bunch of roses from his garden.

.....G3WPV, David, it has been reported has been house-hunting around the editorial area. The OWL reckons that he is looking for a desirable residence with a garden about 131 feet long and 2 feet wide.

.....ZC4YC has been having BCI problems when operating on SSB. Trust all is now well.

.....A copy of (the original) "Jimmy", published in the Middle East in 1942, No.2, has been presented to the Royal Signals Museum by Arthur, VK2AV. Arthur has since presented a Tobruk battle map, complete with what appears to be battle line endorsements, with a map case, etc., according to the OWL. Many thanks indeed, Arthur.

.....VK4XY recently worked G3XSN, when the latter was using the usual mobile rig feeding a 3-element beam!! The OWL wishes to put record straight - Bert was at home and the car was parked in the drive. It is not true the OWL assures us that Bert drove off without disconnecting!!

.....The OWL also mentions that George, VK4XY/1546, was checking a small mobile rig for a friend using a motor-cycle battery. The PA drew only 760 mA and the output power was 2 Watts. Hearing G2WQ call "CQ RSARS", they answered and, hey presto!, contact was made. The moral is that if you've only got a couple of watts out, don't despair - there is usually an RSARS QSO to be had.

.....VS6JW, now back in the UK and on the bands, acted as Radio Operator on a trek by H.R.H. Prince Charles in Nepal in December 1980.

.....Bob, 1511, now has the call-sign VK2ERL (amend your lists, ladies and gentlemen). If you want to QSL direct the QTH is 64 Undurra Drive, Wagga, Australia, 2650. The OWL reports that you may well have met Bob in the past as VK3NAW, VK3RDK or G4MOS.

.....On Sick Parade recently we have seen VE3QE and the XYL of Walter VE3AX. The OWL understands that both are now back home and we all join him in wishing these and any other members who may have been under the weather recently, a speedy and complete recovery.



.....The OWL notes with satisfaction that the Balance Sheet of the R.A.I.B.C. this year shows a small excess of income over expenditure. With ever increasing prices and costs it is very difficult for a philanthropic organisation such as R.A.I.B.C. to keep its head above water. If you find that you have a few pennies to spare why not send them along to the R.A.I.B.C. Treasurer, at 9 Rannoch Court, Adelaide Road, Surbiton, Surrey, KT6 4TE. (The OWL suggests that every time you empty your/ pockets (or clean out your handbag!) why not drop all the odd coppers into a jar or box. When the box or jar is full, change it into silver or notes at the Bank, and send the result along to R.A.I.B.C.). The OWL promises to send along such a donation before this edition goes to print.

.....Congrats to G4JRE who has gained the G-QRP Club Award for working 40 members.

#### OWL'S BIT - Contd.

.....The OWL understands that from 1st May 1982 all cards out of VK for RSARS members will be handled by VK2VVV. Cards into VK can go via VK2NLE who will forward them with the local editions of "Jimmy".

..... The OWL recently saw a cutting showing Jackie who, he tells us, is the intended of G4JBM, Peter. Another RSARS member was heard to remark that "if only he was a few years younger" (!!!)

....Leonard, RSARS 1283, when not tied up with the RSARS Nets, is an active Intruder Watch operator.....Other interests at 1283 include classical music, light music, music from the films and Pop (Pop?!?!?? - The Owl)

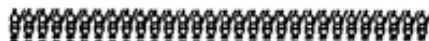
.....G4MUD, Les. RSARS 1569 is still looking for ex-members of 2 Div. Signals of his vintage. The Owl informs us that so far Les has only contacted Jack, GW4ITJ and Harry, G3NUR. If you are wondering which Les this is, he signs himself "The Champion Charpoy Basher of Poona". Give him a ring on Medway 270921 if you were in 2 Div around Poona.

.....A certain non-member reader of "Mercury" wonders if G3EKL is the SQMS Webb (an amateur) that he knew in 3 GHQ Signal Regiment (SWS).

..... G3NEE is reported on holiday in on Dartmoor.

.....G3RKN should have a 60ft tower by now.

.....G3WRY is reported to have been seen mucking out at the local stables.



SILENT KEY

G2CX



J.D. "Chis" Chisholm, G2CX/RSARS 0037 died on 24th May 1982. He held the call-sign G2CX continuously for 55 years and was a Life Member of The Royal Signals Amateur Radio Society. He was a long-standing member of The Radio Society of Great Britain and served on the 1928 T & R Committee and was a Council Member for the next 10 years, 8 of them as QSL Manager. Service was with Royal Signals in Special Operations Executive as Chief Instructor S.T.S. 52 and afterwards with S.C.U. (T.A.). He was active until shortly before his death mainly on 80 Metres at 1500 hours daily with G3HRJ and other Old-Timers and R.A.I.B.C. members. (The above obituary was written by "Chis" himself shortly before his death and addressed personally to the Editor of "Mercury").

"Chis" was one of the "old school" - an amateur and a gentleman. His friendly voice will be sadly missed on the bands and the ranks of R.S.A.R.S. now have a gap that will be very hard to fill. To Phyllis, his widow, all the family and friends of "Chis", the President, Officers and all Members of the Royal Signals Amateur Radio Society offer their sincere condolences. We share your loss.

#### SOUTH ATLANTIC 1982

In view of recent happenings in the South Atlantic the Royal Signals Amateur Radio Society offer sincere sympathies to any member who may have lost relatives or friends in the Task Force actions. To those who may have suffered injuries we wish you a speedy and complete recovery.

### WHERE YOU THERE??

Reg, G3LAT, has been a member for some considerable time now and wonders if there are now any "ex-buddies" lurking among the newer (or even older) members. He sends along his own "potted history".

RSARS 0283 - Ex-WOII Reg. Arnold - G3LAT, 5A1TR, DL2VH - 33 Russell Road, Kinson, Bournemouth, BH10 7HB - Member RSGB - February 1933 to 30 Squad. Depot, Catterick. Eddy Company during 1933/34. Trained as Operator Signals. Posted to 4 Division Signals at Colchester and Canterbury. 1935 to Egypt Signals. 1938 4 Section Haifa. 1939 to Mersa Matruh with Cairo Brigade Signals. 1940 to Canal Brigade then to 6 L. of C. Signals. October to December 1941 to No. 9 Refresher Course at Middle East Signal School, Maadi. (In "Mercury" No. 71, Jim Payne, VK3AZT, was looking for anyone on this Course. I have written to him and am now awaiting a reply). Returned to the U.K. in April 1943 and was posted to Northern Command Signals at York. 1944 to 4 wireless Group, Egham and took over 4 W/T Section Type "P" that had just returned from India. In 1945 posted to Force 135 for the Channel Islands. 1946 was instructing OWLs at Catterick and in 1947 to 107 (U) Independent Signals T.A. Belfast as P.S.I. In 1952 to British Forces Network, Hamburg then 2 A.S.P. as RQMS. 1954 Northern Command Signals at York and in 1956 to 10 Armoured Division in Tripoli (for the Suez "Do") working on W/T Security. Returned to York in late 1956. Left the Service in August 1957. Been at this QTH ever since. Active on HF bands using Swan Astro 150 transceiver. TA-33-jnr 3-element beam. also a 2 Metre rig. Would like to contact anyone who might recognise the name. I wonder do any members know anything about 2323084 Jimmy Pullinger. He was posted to India (Karachi) about 1935. 73 Reg.

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### IF NOT WERE YOU HERE??

Gordon Beaumont, RSARS 0213, of 23 Trent Valley Road, Lichfield, Staffordshire, WS13 6EZ, would like to hear from any members who might have served in Royal Signals from 1923 onwards, particularly on the North West Frontier with him.

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### CAN YOU HELP??

Francis Rose, G2DRT/RSARS 0322, 84 Cock Lane, High Wycombe, Bucks., HP13 7EA, requires information on "the Eddystone Navy Receiver B34" including circuit diagrams, etc. Francis will be happy to pay for any information.

### OPEN MARKET - OPEN MARKET - OPEN MARKET - OPEN MARKET-OPEN MARKET

FOR SALE Trio TR-2300, with Nicads, Charger, Case, Helical Antenna, Boxed, @ £120.

WANTED' (To buy or borrow/copy) The Maintenance or Technical Manual for a Roneo 250 Rotary Duplicator.

Both above, contact Paul F. Scottorn, G3RFI/0133, 34 Sutton Mill Road, Pottton, Sandy, Bedfordshire, or ring Paul on 0767-260800.

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(The following advert, missed the last edition of "Mercury" by a matter of minutes, and therefore may not still be available. Check with Kit).

FOR SALE - IC-219 by Icom, 2 Metre VHF TX/RX, 144 - 146 MHz, 0.5 - 12 Watts. Tone burst fitted for repeater working. 12V DC or 240V AC input. Nice Base station. Good condition. Asking £120 o.n.o.

HC-1400 NDI 2 Metre Mobile TX/RX 144 - 146 MHz synthesised. 3 memory channels. Low power = 5 Watts, High power = 25 Watts. Tone burst fitted. Reverse repeater switch. Comes with stepper mic.

Case marked but set in good condition. Best offer above £110. Contact Kit Hall, Radio Troop, 3

Squadron, 14th Signal Regiment (EW) BFPO 23 (Tel. 05141-36569 W Germany)

BEING A COLLECTION OF LETTERS RECEIVED ON A  
MULTITUDE OF SUBJECTS FROM A MULTITUDE OF  
PLACES

Sheppey, Kent. ".....I have been meaning to write to you for some time past if only to offer an explanation of my absence from some of the Nets that I used to take part in.

The above has meant that I have had plenty of time to catch up on my reading and this has of course involved the proper reading of Mercury. This leads me to comment on Issue No. 70 and the article "Arrested as a Spy" on page 17, by GW3UDU. Johnny mentions (in para. 5) that he was due to attend the FOC Dinner - what he did not mention was his activities there wherein he was observed by the gate attendant with his head stuck out of the "Ladies" window. It all came about due to Bill Windle G8VG, Johnny and myself rigging the aerial between the buildings at Lord's Banqueting Suite. This involved Bill and myself being on the roof and Johnny running the co-ax the shortest way via the 'Ladies' - hence his head out of the said window. No wonder such a suspicious character was arrested...!!!. Anyway, after assuring the gate attendant that Johnny meant no harm and that he often did things like that we were allowed to finish off the installation. We learned afterwards that Johnny had been reported as a suspicious character to the Security Guards who were on duty due to IRA activities!.

Thinking about 10 MHz, I wonder if any other members have built the excellent linear using four TT21 valves which was described in "RadCom" by G6JP some years ago? Without any modification it will function on this band using the 7 MHz position of the band switch. I had a QSO with G6JP recently and he was delighted to know that this was the case as he does not have this linear himself!!!.

Ted G2HKU.

FROM: Bill, G4MQN, 36 Potters Field, Harlow, Essex. ".....My FT-101E went back for a pre ex-warranty service and was returned in good shape, with the comment that my rebuilding of the P.A. stage, after a burn-up due to a small capacitor going s/c, was carried out with the expertise befitting a Royal Signals Radio Mechanic!!!. An improved FET in the RF stage did provide a much greater sensitivity on 10 and 15 which has meant that I have been knocking off the VK and VE members in droves, using an 18AVT vertical. In fact, at 9 p.m. the other evening I was working VE2DE and VE3DTL at 5 and 9+ each way - which astonished me!."

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MAIL BOX - Contd.

FROM: The Vice-President, RSARS, Major-General E.S. Cole, CB CBE. "Dear 3DPS, Ref. the recent mention in "Mercury" No.71, about the 46 Set. When I was the Army Chief Signal Officer at Combined Operations Headquarters in 1942, and having suffered from the failure of the 18 and 38 Sets in the assault phase to hold their frequency, I asked the design engineers from Pye if they could produce a set giving crystal control on three channels, on both send and receive.

The 46 Set was the result. It was a complete success. It is possible that some production of the set was carried out in the U.S.A. at a later stage. The set was totally British in design and initial production....."

Regards

Eric Cole G2EC

Our thanks, Mr. Vice-President, for "putting the picture straight" on the WS46. Little could be found in available books on this piece of equipment, although "The Second World War - Signal Communications", The War Office 1950 mentions the WS9, 19, 29, 39, the WS 8, 18, 48, 68, 78, 88, and 108. Some confusion may have arisen because the WS 48 (not 46) was produced in the United States. Ed.).

From: Bill Guest, G4IYB/1565, 21 Hill Rise. Hinchley Wood, Esher, Surrey, KT10 0AL enclosing a letter from M.P. Lorain, F2WL, 29 av. G. Bernanos, 75005 PARIS. "Greetings. Re. "Mercury" 11/81 page 52 "It's a small world". At the risk of perpetuating a story to boredom the attached letter recently received may be of interest since it explains the year's elapse between a QSO and the ultimate answer to info requested on a QSL.

As a result of our subsequent contacts I understand that Peter, F2WL, has now applied for RSARS membership. As a respected contributor to Wireless World one hopes that "Mercury" will benefit from his interest in due course...."

Yours Aye

Bill, G3IYB.

The attached letter reads "G3IYB de F2WL. Dear Bill, I have just received a QSL card from Jacques (F3WL) saying "Thanks to you G4IYB has been able to find me after a parting of 40 years. A million thanks". I must say that I am all the more glad since I am a Liaison Officer myself (a Major in the French Army Reserve) and I usually serve twice a year with British and American troops in Germany or in France (specially with BAOR Units going down to Central France for special training). Thanks also for your QSL confirming the reunion. It was by pure chance that some days after our QSO, I heard F3WL say over the radio that he went to LAIVES for his holidays, a small village I had never heard of! But that rang a bell somewhere - I contacted him and the result was that two old friends met again. . . . All this was done using CW as a medium with a small QRP transmitter (TS-120-V) with 10 Watts RF to a "clothes line" antenna....." 73 Peter.

FROM: Brownie, G2BQ/0461, Maryland, Wilverley Road, Brockenhurst, Hants, SO4 7SP. ".....There have been many excellent articles in the last three issues of "Mercury", and it is difficult to know how to cast my votes!. Please find enclosed the final decision!..... Wiith regard to the article "Learn Morse the hard Way" surely the writer must mean Semaphore and not Morse (line 49 on page 39). (Two flags are mentioned and this would indicate - Semaphore. Morse was sent with one flag it is believed. see photographs in "Through to 1970" - Ed.).

I think that paragraph four of the article "Transmission Lines (Feeders)" may confuse some readers. G5YN seems to be dealing with a perfect transmission line with no conductor resistance, no leakage and NO RADIATION, and in this case there can be no attenuation because there is nothing in which any loss can occur; it is just not true to say that the current and voltage will be attenuated by the series inductance and shunt capacitance of the line, falling asymptotically to zero at infinity. Current and voltage will be the same at all points along an infinite perfect line. Even in a "lossy" line the attenuation is due to conductor resistance and insulation leakage and radiation resistance.

For, an excellent treatment of high frequency feeders I would refer readers to "Short Wave Wireless Communication" by Ladner and Stoner, Chapter XI, 2nd Edition, which is possibly still available in some libraries.

Yours Ever

Brownie/G2BQ.

### MAIL BOX - Contd.

FROM: A. CLEMENTS, G4KDZ/1597, 4 Woodward Close, Grays, Essex, RM17 5RP. ".....I have just received "Mercury" No. 71 and. unlike Dady S. Major, VU2MD, I rarely seem to find time to read same from cover to cover!. However, I do look forward to my copy and certainly consider membership of R.S.A.R.S. good value for money.

From time to time I see comments regarding CW especially in respect to those amateurs who "throw their Morse keys away" - Hi Hi. For those of us who consider ourselves "competent CW operators" it is a difficult if not an impossible task to convince those who are not and who never go on the CW mode, how enjoyable it can be. I am, perhaps, biased towards CW having spent some years as an OWL B III in Royal Signals. Sad though it may be, it is their loss and one which they will never appreciate until they become reasonably competent in CW. Certainly I use other modes, SSB and RTTY and have nothing against any other mode, except perhaps when the CW stations blast through the RTTY section!!.

Certainly one major advantage with CW is when conditions get bad on SSB and ones contact is all but lost, it's so easy to switch over to CW and finish off the QSO, and I've lost count of the times I have done this. Personally, although I am a relative newcomer to the hobby, I'm beginning to feel that our licensing conditions are a little out of date. Perhaps we should look at the USA licensing conditions and allow G8's and G6's specific parts of certain bands on CW only (HF bands, that is). The first thrill of actually achieving a DX contact and QSO plus QSL card would very soon give the guy/lass the desire to do it again. Instead we have the outmoded Morse Test, no punctuation, learned in a classroom or friends shack, the person concerned never having achieved this thrill. Human nature being what it is means a lot of people will not exert the necessary effort to attain proficiency.

I don't blame them as I might well have done the same had I not had the Army to do the job for me back in 1953. For that, at least, I thank them.

Good luck to Bill/G3DBU, in the Stores who is going RTTY with a MM 4000. For those who are considering RTTY, I might point out my own experience with the MM 4000. The T.U. is FB but the keyboard is of the membrane type. In my eyes it is not compatible for RTTY as one cannot locate one's fingers on the centre "base" keys (ASDF JKL). Of course, the layout varies on different types of keyboard or teleprinter. Because one cannot do this on the MM 4000, then one must constantly look at the keyboard, instead of looking at what one is typing. Secondly, the keyboard is slow and certainly I can already type faster on my 7E RP, which I've only had a very short time. I told the shop where I bought the MM 4000 what I thought of their keyboard and returned same to the shop where it was re-purchased at some loss to myself. As for the need for memories, again we are back to proficiency and if one can master a keyboard reasonably well, then memories are not required. Certainly when one considers the TONO 9000E with its "Split screen Facility", Word Editing, etc., - yes, I would like that beastly in my shack. However, I haven't that sort of cash to spare and I still get great enjoyment from my 7E.

It is a pity that rigs today do not incorporate FSK with 170 Hz shift (The Trio TS-820-S certainly has 170 and 850 Hz shift available changed by an internal plug - Ed.) even the 902DM has the old 850 Hz shift I'm told.

As for QSL returns, I couldn't agree more with Frank, G3DVL. In fact, I'm lost for words!! My first logbook contained some 1850 QSOs (I'm guessing as my log book is not to hand) and I sent a QSL card to all those contacts. My returns were about 1 in 3 only. I only QSL stations that send me cards now and. of course, this includes SWLs also. Some people just will not spare the time to QSL, with others their log-books are such a mess that QSLing can be difficult.....

Tony G4KDZ.

(Lots of "meat" in the above, so how about dropping a line to agree/disagree with Tony, or even to raise your own pet "theory". Your letters will be most welcome. Ed.)

### MAIL BOX - Contd.

FROM: Ray G3ZFN/0968, 28 Hillside, Stowmarket, Suffolk, IP14 2BD. ....I wonder if any member can recall a Corps sign consisting of alternate blue and white horizontal wavy lines over which was superimposed a red fish?. For part of the time whilst I was in Italy (before my transfer to 8th Army Signals) the Armoured Car Regiment to which I was attached became Corps Troops. I can't remember which Corps but the insignia seems to have stuck in my mind over all the years....."

Kind regards

Ray G3ZFN/0968

(The OWL reports hearing G3WRY state that the fish was probably a herring but we'll ignore that!. Heraldry indicates that the alternate blue and white lines (Bar Wavy) means water such as rivers or sea. Fish occur regularly in heraldic devices and can be Naïant (swimming across the shield), Urinant (vertically with head down) or Hauriant (vertically with head up). The pike, also known as a Lucy appears on the Arms of the De Lucy family. The roach is used in the Arms of the Roche family. So Ray's fish remains a bit of a mystery. But may well have developed from a military family coat-of-arms. Drop a line if you can help. Ed.)

FROM: Les Affleck, G4MUD/1569, 6 Willow Close, Kingsmead Park, Avery Way, Allhallows-on-Sea, Rochester, Kent, ME3 9QS. ".....This retirement lark is OK, but where does the time go???. Have been fairly active on the bands but not very successful with the RSARS Nets....." (You are certainly not the first member to ask where all that time goes that we look forward to on retirement, Les. Hope that there are a lot more RSARS numbers in the log by the time you read this. Keep an ear open for G4MUD guys and gals. - Ed.).

Les. G4FMJ/1330, writes from "Quaray", 11 Cherry Gardens, Littlestone, New Romney, Kent. ".....I wonder if the passing era of the present editor will mean the disbandment of our own honour guard seen in all copies of "Mercury"?. As an ex-Coldstreamer I must admit scrutinising them with a keen eye each issue hoping for a faultless turn-out but it never is. A close check of issue No. 71 reveals the following crimes: Improperly dressed (no belt), one man, page 3. (No plume), two men, pages 27 and 35. Absent from parade, one man, page 21. Rifles (dropped), one man, page 25. (wrong shoulder) two men, pages 33 and 35, (none) one man. page 33 and page 45 reveals one man "falling out" without the dismiss..... ....I wonder if this, our own regiment, has an official title, motto and history..... ....73 from the end of England's smallest public railway..... Les., G4FMJ.

(The OWL replies - "The Honour Guards are platoons from The 73<sup>rd</sup>/88th Regiment of Foot and Mouth (Webb's Rangers). They were named after a well-known RSARS General Secretary and, coincidentally, the main offender on parade is a Rifleman Webb. The Regiment carries various battle honours such as The Gut (Malta), Boogie Street (Singapore) and The Battle at Ma Brown's (Catterick 1946). Various decorations are held including the Camp Centre Defence Medal and The Catterick Star as well as the Aldershot Decoration with Clasp "Rushmoor Arena". Their motto is "None" adopted after they were stationed next to an Allied unit in Korea who had their motto "SECOND TO NONE" blazoned across their camp entrance.)

FROM: Ray Small, G3ALI/0984, 13 Rydal Close, Stowmarket, Suffolk, IP14 1QX, ".....I don't get on the LF Nets very much now because I've only got an 18AVT vertical, tuned to the top end of 80 and the SWR really zooms up below 3775. However, I do keep on bumping into some of the gang around the bands and I check in on the DX Net from time to time. I managed to find 9V1VF and VS6JW (now back in the UK - Ed.) so was pleased about that. I'll have to apply for one or two of the Awards - I'm sure I must qualify for quite a few by now!!!, (Check the Awards Manager's address when you do apply, Ray. there's a hand-over/take-over going on! - Ed.).

Activity is mainly on the DX bands using dipoles on 10, 15 and 20 and the 18AVT for 40 and 80, Amazing how you can winkle out the DX on such basic antennas. Have really done well over the last week (mid-March - Ed.) having got hold of 9NIBMK on 20, XZ9A on 10 and 20, VKØAN on 20 SSB and CW and KP2A/KP1 on 20, 15 and 40 CW and 20 SSB. Only the 9N1 and the 10 Metre XZ were on DX Nets, If I get the cards in from KP1 and also BV2B I'll have 321 confirmed which includes 18 deleted countries, (Congrats - Ed.). The rig is a TS-520-S....." 73 Ray G3ALI.

### MAIL BOX - Contd.

From: Don Shirreff, G3BGM, Wrightsbridge, Lower Wanborough, Nr. Swindon. ".....First of all to put the record straight, some alterations to the original text, in case I offended anyone by inaccuracies. (This refers to the article "Some experiences with Special Signals. - Ed.). I think the VHF version of the German Para. and Infantry Pack Set was Tornister Funk d (not b as I said). There were also versions b and f using frequencies about the same as the WS 18, but we never heard any in action.

There were two serious mistakes in the NIJMEGEN episode, as I realised when I visited the excellent Airborne Division Museum at Arnhem last August. The American Airborne Division which held the wooded country to the east of Nijmegen was the 82nd, and the village where we put the VHF Observation Post was Groesbeek, not Osterbeek, which is, of course, where our 1st Airborne dropped.

I have had lengthy CW discussions with Bob, W2AG/RSARS 1636 about the Signal Intelligence Section of 2nd US Corps, which I met in North Africa. We could have only just missed each other out there. I don't think he took offence at what I said, but in case anyone else did, I would like to emphasise that we were terribly 'green' when we started in the desert, and I admire the way in which the Americans were much more open to the man on the ground and learned much quicker than our hierarchy did. It was a pleasure to show Americans around and explain what we were doing; you knew that they were taking the point, whereas one feels even now that all our hard won experience became lost somewhere in the Mahomed Ali Club for senior officers. For instance, why has the whole point about link calls been lost in modern Signals procedure?. They seem to be now back to the insecure methods which we pulled the British Army out of in 1941.

On the episode at CAUMUNT in Normandy where we heard officers discussing an impending air attack on German armour to the south of Caen, I have had correspondence with Chuck Hooker, VE3CQH/RSARS 0067, who is interested in the history of the Canadian Forces. It seems that what we heard was a Forward Air Formation Signals Link with the U.K. which was being tried out the day before Operation GOODWOOD. The lesson is obvious, but cannot be too frequently repeated.

I also warned Pat Hawker, G3VA/RSARS 0663 that what was coming out in our No. 71 might clash with his experiences printed in Wireless World for January 1982. I had heard that the link we left with the late Airey Neave had later been suspect, but never the extent to which it may have been two-timing us. Again, anyone visiting the Museum at Arnhem, or who have Dutch friends who lived through that period will have it brought home to them that it was the Left in Holland, particularly the brave railway trade unionists who went on strike for the rest of the War while occupied by the Germans, who were on our side, whereas the Right were pretty half-hearted.

Incidentally, this was my experience in France and Belgium as well, and I had access to the Sitrep maps almost every day at Corps Headquarters. A great deal of the post-war literature of resistance derring-do has been exaggerated. We kept quite good tabs on the Germans during those hectic days, and they hardly ever reported the bridges claimed to have been blown up by the resistance.

As I implied in my introduction, a great deal of profit has been made from war-time adventure stories, whereas those who know have had their lips sealed by loyalty and The Official Secrets Act. The sterling operators who really produced the stuff have had very little recognition.

Yours Sincerely Don. G3BGM

P.S. One lighter touch. I would very much like to know from any ornithologist/operator what the "Vic-Eddie" Bird might have been. When operators at BAGUSH staggered out of the Smokey dug-out to greet the dawn before going down for a freshening swim in the salty Mediterranean, they used to be followed around by this extraordinary bird. By that time they were fed up with Morse and their language was unprintable....."

### MAIL BOX - Contd.

FROM: Bob Ehrler, W2AG/1636, 30 Linden Street, Malverne, New York, 11565. ".....In case my paths may have crossed with other members of RSARS I enclose a brief history of the main Unit with which I served - the 53rd Signal Battalion. The Battalion was created on October 18th 1927 and was inactive until June 1st 1941. The 53rd were activated at Camp Bowie, Texas. This Camp is near Brownwood, Texas and in the middle of the State. On 19th July 1942 the 53rd left Camp Bowie and three days later arrived at Camp Kilmer, New Jersey and sailed for England on 6th August 1942. The trip took 12 days and we disembarked at Bristol. We then moved to Downton, about 10 miles south of Salisbury where 53rd became II Corps troops for the remainder of WW II. The Unit sailed to Europe with HQ Company, 'A' Company and 'B' Company - a total of 28 Officers and 643 enlisted men. 'C' Company joined us later bringing our manpower total up to over 800 officers and enlisted men. - The 53rd were in all the WW II battles in Algeria, Tunisia, Sicily and Italy from November 8th 1942 until May 1945. The 53rd were deactivated on 30th September 1945 at Leghorn, Italy.

I joined the 53rd at Camp Kilmer and came up from Fort Monmouth, New Jersey where I enlisted when we entered the war. I was in the States for 4 months and overseas for 38.

The Battalion were reactivated 21st September 1954 at Fort Hood, Texas and inactivated on 23rd September 1971 at Fort Lewis, Washington. They served in Vietnam. During WW II the 53rd were in the following battles: Algeria/French Morocco (with arrowhead), Tunisia, Sicily (with arrowhead), Naples/Foggia, Rome/Arno, North Appinines and Po Valley. We lost a total of 16 men killed in action, 7 in Algeria/Tunisia, 3 in Sicily, 6 in Italy. The Battalion received 72 decorations and it may well be more as, it seems, not all were reported. The decorations were The Legion of Merit, Silver Star, Bronze Star and The Soldiers Medal. I received the Bronze Star as a Radio Operator in Sicily.

Some of the Generals commanding II Corps were Clark, Patton, Bradley and Keyes after Sicily to the end of the war.

It is interesting to note that W2AG, KA3CSR, W5LYM and W9RRT are all members of RSARS and were all members of the same Platoon with the 53rd..... 73 Bob W2AG/1636.

FROM: Evan, G5YN/0040, Goldens, Teffont, Salisbury, Wiltshire. "....There are a couple of mistakes in my article on page 49 of the last issue of "Mercury" as follows:

$$K = \frac{1}{\sqrt{E}} \quad \text{and not} \quad K = \frac{1}{E} \quad \text{e.g.} \quad 0.675 = \frac{1}{\sqrt{2.2}}$$

(Sorry, Evan, that was my fault entirely. Having typed in as much as possible it left the "square root" signs, etc., to be put in by hand - and I missed that one. Ed.).

FROM: Mike, G4ICC, 268 Main Road, New Duston, Northampton, NN5 6PP. ".....Changing the subject, why are not the reciprocal hearings on my RSARS Great Circle Chart exactly 180° different?...." (The OWL reckons it is something to do with spherical trigonometry and the fact that the Earth is not a true sphere. However, he has been wrong before so we'll throw the question open to members. Parade, Parade, 'Shun, Fall out all them what knows the answer to the above question and write the explanation on a piece of paper addressed to the (new) Editor. - Ed.).

FROM Ambrose Dowling, GW3GUE/RSARS 0853, Glenrhyd, Brechfa, Carmarthen, Dyfed, SA32 7QP comes an interesting letter (together with a very generous donation - many thanks, OM). ".....I had close links with Special Signals myself in the Middle East and was the Staff Officer in charge of Wireless Deception in the Italian campaign after serving an apprenticeship in the development of Signal Security techniques during the Desert War....."

~~~~~

(Or : ONCE UPON A NEW BAND).

During the afternoon of December 31st, 1981, it was suddenly realised that the new 10 MHz band was available from midnight, and the only LF antenna available was a 3.7 MHz dipole which was taking up practically all of the garden space. There was no way that I could squeeze another piece of wire into the airspace for the 10 MHz band. Some consideration was given to the possibility of using the 3.7 MHz dipole as a three half-wave lengths dipole on 10.1 MHz, but alas, the SWR was unacceptable, even after extension wires were added to make up the theoretical three half-wave lengths.

The new transmitter is an all solid state "no tune up" type TEN-TEC OMNI C, and provided the PA "sees" 50 Ohms, the maximum output can be obtained. The transmitter can tolerate a 3:1 mismatch with reduced output, and I daresay even higher mismatches could be made to radiate, but the price could be high. With most solid state transmitters, the output goes down as the output goes up. When this happens, there is a natural desire to try and increase the power output to compensate for the losses. This usually results in the output stages drawing lots more current and eventually, if the process is not corrected, the PSU goes into current overload and switches itself off. Although no harm can come to the transmitter, the inconvenience can be a nuisance.

If a bad mismatch must be tolerated, the only way to operate is by reducing the output. This coupled with the mismatch, results in a very poor radiated signal. The alternative is to present a good match to the transmitter output stages, thereby getting maximum output, if needed, without even exceeding the maximum current of the PSU. On the HF bands a good match is obtained by using a Moseley TA-33 which, when used in a "band hopping" situation, proves the value of a good match. If a similar match from another antenna covering the other bands could be achieved, then true "all band operation" could become a reality.

The driven element of many HF beams is nothing more than a rigid trapped dipole. The other bands from 1.8 to 10.15 MHz could be taken care of by some form of wire trapped dipole, if only some information was available. This was the plan for the future, but for the time being, a simple 10 MHz dipole had to be made. In my shack there are no tuning units or 'Z' matches. It is my considered opinion that the use of such units is only required when wide impedance differences are encountered, and should never be necessary with co-axial cables. If it is found that to achieve the magic 1:1 ratio, an ATU of some sort has to be used, then the whole system is probably full of mismatch problems. This article is not intended to go into such problems, as I do not consider myself qualified enough, and a little experience is a dangerous thing!!!.

The existing 3.7 MHz dipole, having proved impracticable for use on the 10 MHz band, was taken down and replaced by a dipole suitable for the band by cutting the elements 23 feet 2 inches each side of the balun. The shortened dipole resonated nicely just below the 10 MHz band, and after a small amount of pruning to 22 feet 9 inches, the new antenna resonated nicely at 10.125 MHz. The difference between the theoretical length and the actual length of the dipole elements is probably because of the slight inductive effect caused by the balun. The balun (Fig. 1) is made up of two Mullard FX 1590 ferrite rings taped together. The primary winding is 10 turns 18 s.w.g, enamelled copper wire going completely round the ferrite rings. The two secondary windings of 5 turns each start at the feed point and go in opposite directions around the rings, ending together on the opposite side from the start, and then on to the dipole elements. The balun assembly was tested for frequency response and losses by connecting two short cables to the input and output, and with the aid of a power meter, the normal co-ax between TX and power meter was substituted by the balun. The losses were very small indeed, and the frequency response more than adequate. The balun was fixed to a ceramic 'T' piece insulator (Fig. 2) and given a weatherproof coating of paraffin wax.

The 10 MHz dipole, complete with balun, was pulled into its normal operating position just before darkness came, to await the arrival of the New Year and the New Band.

## THE G3PGM MULTITRAP MULTIBAND LOADED DIPOLE - Contd.

At midnight, the new band was like a mini Field Day, with a lot of frenzied activity that lasted for an hour or so, but I daresay that many, like me, wondered why a lot of signals were weak and watery so, after about 15 QSOs, the Big Switch was pulled for the night. Next morning, with the new band only 7 hours old, I wearily crept into the shack and clasped a pair of cold headphones over my ears - CQ de G3PGM a few times just in case - then make the missus a cuppa. However, after the very first brief call on 10.104 MHz, the frequency seemed to boil. Two VK's and two ZL's all trying to work their first bit of DX on the band. Having worked all four of them and about 20 other VK and ZL stations, plus about sixty Europeans, I'm afraid the XYL never got her cuppa - but the 10 MHz dipole worked - fine!.

For three days, the 10 MHz dipole was kept fairly busy whilst various avenues were explored to find some information of traps. Meanwhile, the dipole was made to work on the other bands by using a series of extensions and "twisting" or "untwisting" the ends of these extra pieces of wire each time a band change was required. Not a satisfactory method, especially if it was raining, cold or dark, even more unsatisfactory when all three were combined. All of this twisting and untwisting encouraged a more frantic search for trap information. The RSGB Handbook and the ARRL Handbook each gave a brief description of a trap suitable for 14 MHz, although there is quite a difference of opinion about the C to L ratio of the tuned circuit.

The figures from both Handbooks were "averaged", and a single trap was made up to see how it performed, and how best to make it. This was successful, so feeling lucky, a scaled up (or is it down?!) version for 10 MHz was attempted. To keep things as simple as possible, only the barest essentials of mathematics are required. We know that for resonance:

$$f = \frac{1}{2\pi\sqrt{CL}} \quad \text{frequency in Hertz}$$

$$\therefore f^2 = \frac{1}{2^2 \pi^2 CL}$$

When cancelled out and transposed, we find that:

$$CL = \frac{25330}{f^2} \quad \text{C} = \text{Capacitance in PICOFARADS}$$

Using this simple formula, we can now find the CL constant for each band.

For our first pair of traps at 10.125 MHz:

$$CL = \frac{25330}{10.125^2} = 247$$

The CL constant for 7.05 MHz is 510, and for 3.65 MHz. 1901. These figures will be used later.

The 14.1 MHz example mentioned earlier had a CL constant of 127, and a C to L ratio of approximately 5:1 (25 pfd to 5 µH). On this basis alone an acceptable set of traps could be made. However, some bands are much narrower than others, so higher Q circuits can be used. The 10 MHz band is only 50 KHz wide, so a high Q circuit is more suitable. After several sample circuits had been tried a ratio of about 12:1 was found to be ideal. Having decided on this figure, and bringing our CL constant back into play, we find that two preferred value capacitors are near enough for practical purposes. They are 47 pfd and 5.2 µH (ratio 9:1) and 56 pfd with 4.4 µH (ratio 13:1) which was chosen for the 10.125 MHz traps.

## THE G3PGM MULTITRAP MULTIBAND LOADED DIPOLE. - Contd.

### Construction.

Each trap is made up as in Fig. 3.

From a piece of 1-1/2" diameter Tufnol tubing, two pieces 5" long and four pieces 3" long are cut. In all six pieces of tubing drill a hole 1/16" in diameter, in both sides of the tube, and 1/2" in from both ends (four holes in each piece). Through these pairs of holes, a stiff piece of 16 swg copper wire is inserted, so that about 1/4" of wire protrudes from either side. These protrusions are used as anchor wires for the ends of the coils, and by using either side, the coils can be adjusted for resonance, half a turn at a time. The 10-125 MHz coil consists of 14-1/2 turns (after adjustment), which is space wound over the whole 2" available. The best method of doing this is by winding a piece of string along with the wire, and when everything has been anchored down, the string can be removed, leaving a neat open-wound coil. Two of these are required. A quick spray over with touch-up paint or varnish will hold everything in place until after the adjustments are completed. A few more coats will hold everything in place permanently. The rest of the trap is nothing more than a resonating capacitor and the strain insulator, which both fit inside the tube.

Because of the capacitor, it was found that the strain insulator bought for the job was too big, thus it was necessary to make smaller ones. Of course, if any small egg insulators are available, then they should be used - if nothing else, it will save time!. The six small insulators are made from a piece of 1/2" diameter Tufnol tube or Nylon rod. Each piece is about 1" long, and with a saw or file, four slots are cut along its length, as in Fig. 4. Then, two holes are drilled, one at each end, about 1/4" in from each end and at right angles to each other. This is much easier to do than to describe!. All six insulators can be made at the same time, taking only a few minutes each to complete. There are no refinements.

Into each insulator is threaded two pieces of stiff wire about 12" long, which are bent round and twisted together, forming the lead-out wire, as in Fig. 3. This part of the assembly takes most of the stresses and strains, so make them strong enough!.

The last part is to make up the resonating capacitor. Those used by myself happen to be quite small physically, and are much too flimsy to be self supporting between the anchor wires, so a piece of insulating strip is used to support each capacitor. This strip was made from some "old fashioned" tag strips with the tags removed. The capacitor body and about 1" of the lead-out wires are taped firmly to this support, and the remaining wire is left unconnected until last of all. The capacitor supports can be fixed in place with, a dab of "five minute epoxy resin" close to the inside wall of the coil former, so that enough room is left to allow the strain insulator to be inserted freely into the space left. The strain wires are then soldered to the anchor wires and, last of all, solder the resonating capacitor wires to the middle of the anchor wires. The completed trap is now ready for trimming. The remaining traps can be made up for each band using the number of turns and value of capacitors listed in Table 1, remembering to add a turn or so for trimming.

### Trimming.

It is very important to resonate each trap as accurately as possible. The most common method is with the aid of a GDO and a receiver. The GDO should be loosely coupled to the coil and at resonance - as shown on the GDO - the exact frequency should be ascertained by listening to the GDO signal on the receiver. Another simple method makes use of the shack transmitter, or a signal generator and a valve voltmeter, or detector circuit, Fig. 7. The output from the "oscillator" (TX or Sig. Gen.) is coupled into the trap under test by a single turn link at the end of a piece co-axial cable, and a similar arrangement couples the output of the trap into the detector circuits.

The oscillator is then tuned for maximum deflection on the detector, as shown in Fig. 6. The link coupling should be kept as loose as possible to reduce the chances of any inaccuracies, and the coil should be "pruned" half a turn at a time until resonance at the desired frequency is obtained.



### THE G3PGM MULTITRAP MULTIBAND LOADED DIPOLE. - Contd.

When all the traps have been trimmed to satisfaction, some form of weatherproofing should be considered. Two methods were tried - one cheap and simple, which would probably survive a few months, and a more permanent method, more expensive but certainly more durable. The first method is simply done by completely immersing the whole assembly into a container of molten paraffin wax several times until a suitable thickness of wax covers all parts. The second method is to make up some lengths of 2" vinyl pipe, about 2" longer than each trap. Into these pieces of plastic pipe the trap is positioned so that there is a 1" overlap at each end. A plug of foam plastic is made to fit inside the plastic pipe, so that about half an inch is left for a final filling of Polyester car body repair filler. I used ISOPON P.38 which costs less than £3 for a 400g pack, and is more than enough for all six traps. When dry, a few coats of paint, especially around the strain wire outlet and the seal between filler and plastic pipe, should complete the job. Fig. 8 should make this procedure clear.

Now all that remains is to put all these traps into action. One must start at the highest frequency and work down. The 10 Mhz traps are attached to the ends of the 10 MHz dipole and there should be no noticeable change in performance. If satisfactory, (and it is not worth continuing until it is!), go on to the next stage, which is to make a two-bander by adding the 7 MHz elements. This would normally be about 10 feet each side, but because of the 10 MHz trap acting as a loading inductance, this 10 feet has to be pruned back to about 7 feet before resonance is achieved on 7.050 Mhz. This antenna was used for a few days as a two-bander to make sure that there were no peculiarities in its behaviour. It proved to be all right in every respect, so the next stage is to add the 7 Mhz traps. Again, no change in the performance of the 7 Mhz dipole should be noticed, so the 3.65 Mhz elements are next. Once more these are considerably shorter than expected, being just over 16 feet for the middle of the band. For the 'phone end of the band, this length should be about a foot or so shorter, or if CW is your preference, the length should be about 18 feet.

The traps for 3.65 Mhz should, of course, be tuned to your preferred frequency for best results. If both modes are used, then the "mid-band" choice suits all but the purists, and the higher SWR at both ends of the band is a small price to pay. The traps for 3.65 Mhz (or whatever frequency is chosen), should be attached and checks made as before, and then the last piece of wire for Top Band are added to complete the antenna. Again, the frequency of "most usefulness" should be decided because this band is difficult to cover 'end to end'. The resonant point is sharply defined, and a workable bandwidth of about 80 KHz is about all that can be expected. I chose 1.880 Mhz as centre frequency, and for this the end pieces of wire are 40 feet long.

As can be seen in Fig. 5, the ends of the 1.8 Mhz dipole are folded back towards the centre, and are only a few feet off the ground. These must not be allowed to hang loose, because the continually changing capacitance to ground will affect the SWR, and perhaps the outgoing signal as well. The complete antenna is only 170 feet or so long which is saving of about 80 feet, and although somewhat bent about, goes into a 100 feet garden, something a normal Top Band dipole will not do. The full antenna is now checked on all bands, without any tuning unit, straight into the transceiver. The indicated SWR is 1.2 : 1 on Top Band, 1.6 : 1 on 80, 1.4 : 1 on 40 and virtually 1 : 1 on 30 Metres. These figures are as found, and to some readers may appear quite high. In my opinion, too much emphasis is put on achieving a 1 to 1 ratio regardless of how much (or how little) of the signal is actually radiated.

The antenna - now complete and tested - was aired thoroughly before deciding to permanently encapsulate the traps. Details Fig. 8.

### Results.

The first call on 160 produced a 9 + 40 report from Wales, a 9 + 20 from the Midlands and a 9 + 10 from Scotland all in the first 10 minutes, mid-afternoon. These reports were followed by half dozen anonymous 9 + 10 from here, 9 + 20 from there, and so on. It was marvellous. Feeling lucky, I chased up and down the 4 LF Bands to prove the versatility of the system. It was very satisfactory.

### THE G3PGM MULTITRAP MULTIBAND LOADED DIPOLE. - Contd.

After a few weeks of operation, one thing was a bit disappointing - it is not a DX type antenna for 160 Metres. Practically all calls to DX stations were not heard. It seemed that U.K. amateurs using verticals were far more successful, but for the whole of Europe, the higher angle radiation from the dipole was often superior to the vertical. On the three higher frequencies, this antenna behaves like any other dipole - a properly set up dipole, that is!!.

The layout, as shown in Fig. 5, is very approximately to scale, and it can be seen that the TA-33 beam stands immediately beneath the multiband dipole. It was noticed that the position of the beam elements affected the SWR readings. To minimise this effect, the 3-element beam is always positioned with its elements at right angles to the dipole after every session on 14, 21 or 28 Mhz. No attempt to use the dipole on the HF bands has been made because, as the title suggests, there are three traps in each leg, and although dipoles can, in theory anyway, work on odd multiples of their normal frequency, this antenna, with all these traps, would surely play havoc with such a theory.

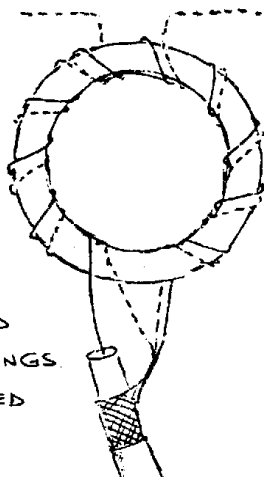
The end product is a fairly compact multiband (in the true sense) dipole which can be used for band hopping or perhaps contest work. If required for CW use only, the efficiency of the system can be improved slightly by using narrow band higher 'Q' circuits in the traps. Naturally the elements would have to be slightly longer, etc., etc. Personally, I do not think this is necessary, unless a "Special" for N.F.D. is considered.

During the making of this antenna, an amusing incident occurred. The need for "egg" insulators sent me off in search of the local stores. Most of them had never heard the term "egg insulators", but one bright spark raised my hopes when, smiling broadly, he disappeared into the back of the shop, returning moments later with a couple of egg cartons that his wife had just finished with!!!. It was easier to accept than to try and explain!.

Eventually, a "Farmers Supply Shop" had some in stock. These are sold as electric fence insulators made by Molseley, priced at just under £7, including Value Added Tax, for a packet of 20, or about 35 pence each - and I remember when they were a shilling a dozen. Ah well, "CQ, CQ, CQ .....". (Diagrams on following pages. The OWL understands that this antenna has since produced some very good results on the bands and it would appear to be well worth considering as a good multiband antenna. - Ed.)

FIG1 THE BALUN.  
(NOT TO SCALE.)

CORE - 2x MULLARD  
FX1590 FERRITE RINGS  
STACKED AND TAPED  
TOGETHER.



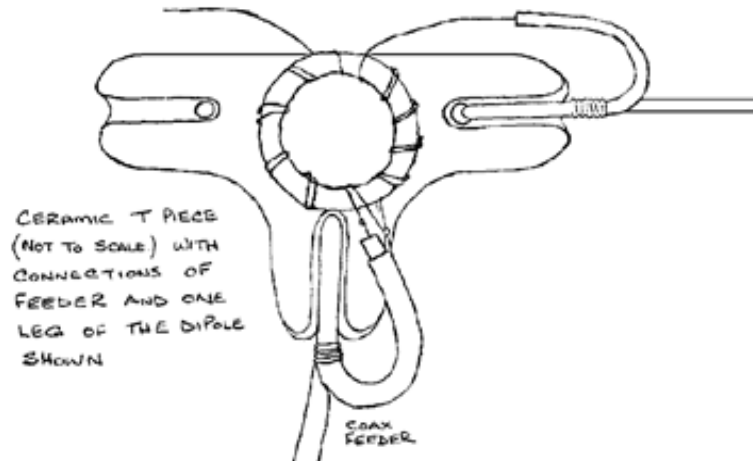
PRIMARY ———  
10 TURNS.

SECONDARY - - - - -  
2 x 5 TURNS.

18SWG ENAMELLED WIRE.

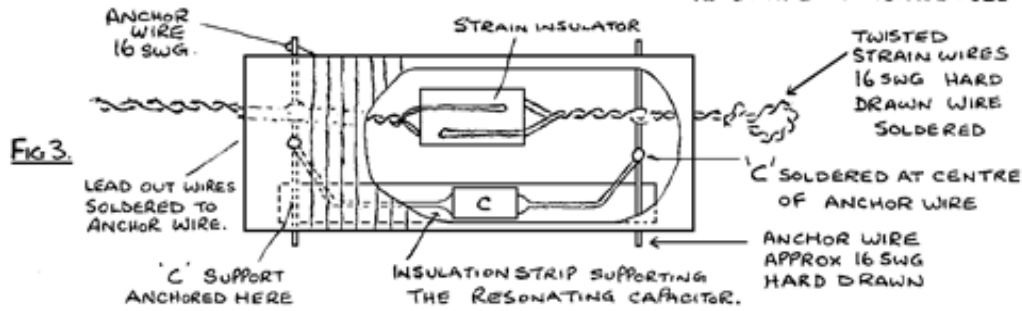
(THERE IS MUCH LESS SPARE ROOM  
THAN THIS DRAWING SUGGESTS)

Fig 2



**NOTE.** PLASTIC WATER PIPE IS NOT SUITABLE FOR TRAPS MADE IN THIS MANNER. THE HEAT DURING THE SOLDERING TO THE ANCHOR WIRES WOULD MELT THE PLASTIC.

3" LENGTH (FOR 10MHZ & 7MHZ)  
5" LENGTH (FOR 3.65 MHZ)  
1/2" DIAMETER TUFNOL TUBE



ALL TRAPS BUILT TO THE SAME PATTERN. THE NUMBER OF TURNS AND THE VALUE OF THE 'C' CHANGE WITH EACH PAIR OF TRAPS.

FIG 4. STRAIN INSULATOR

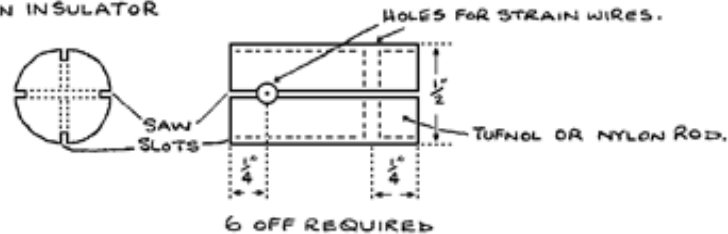
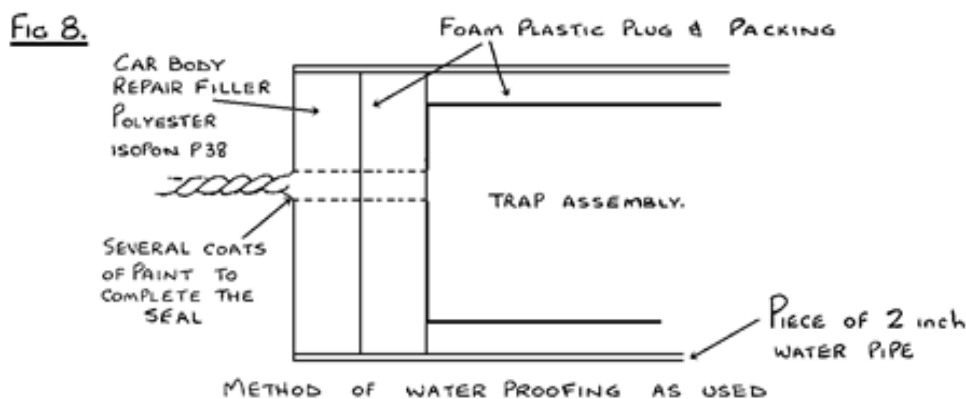
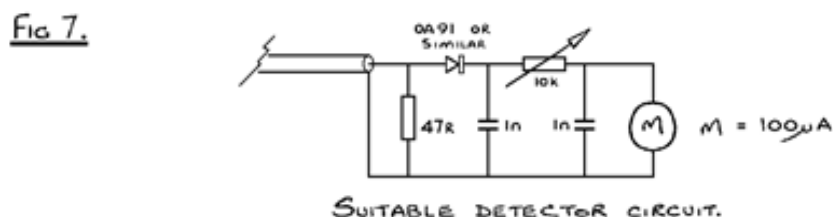
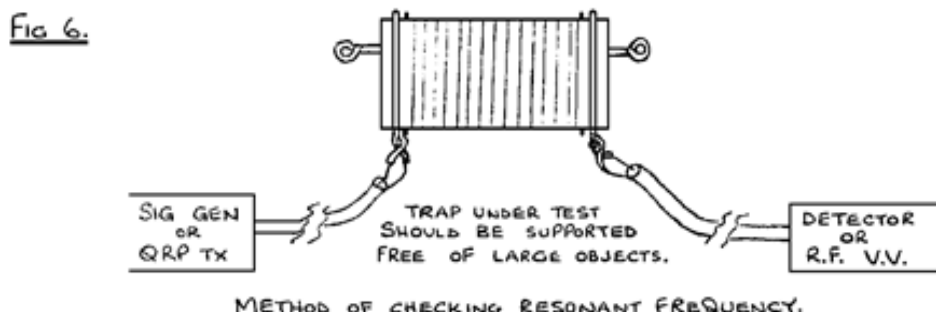
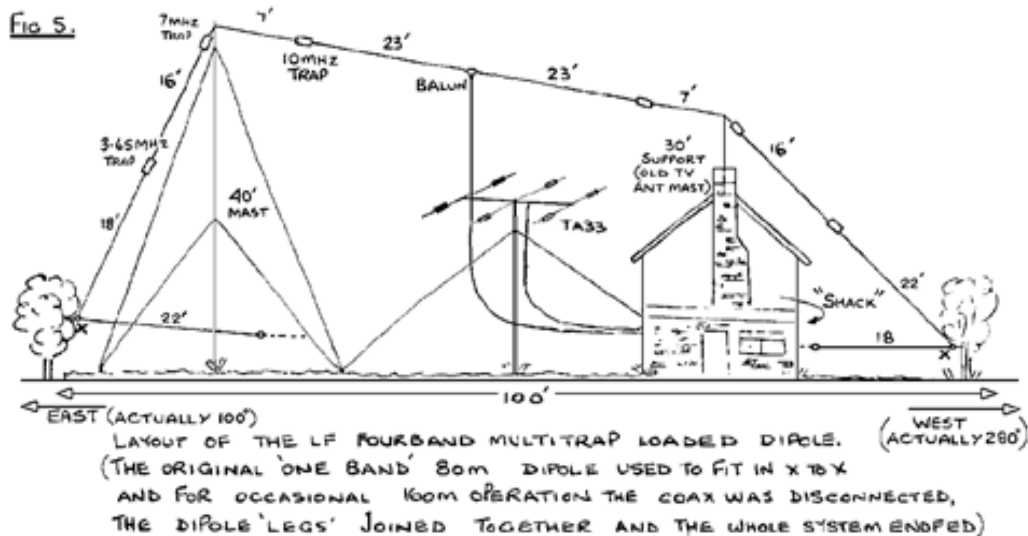


TABLE 1

|            | CL   | CpF | L <sub>μH</sub> | *TURNS | LENGTH | CL RATIO |
|------------|------|-----|-----------------|--------|--------|----------|
| 10.125 MHZ | 247  | 56  | 4.4             | 14½    | 2"     | 13:1     |
| 7.05 MHZ   | 510  | 68  | 7.5             | 17½    | 2"     | 9:1      |
| 3.65 MHZ   | 1901 | 82  | 23.2            | 41     | 4"     | 3.5:1    |

CAPACITORS MUST BE AT LEAST 2KV DC WKG. (FOR NOMINAL 100W OUTPUT)

\* AS FOUND AFTER ADJUSTMENT.



## AWARDS AND CONTESTS NEWS.

### G3EKL/0046.

Once again it is my pleasure to pen a few words. I hope that some of you remembered the Society 21st Anniversary Contest - band conditions seemed quite reasonable.

Ladder progress from last February until 1st June this year has been very good. On the ANY MODE - EUROPE ladder there have been two new starters. G2BQ/0461 claiming the Basic and First Class Awards and also the 200 and 250 stickers - nice to hear from you. Brownie - and also LA2QAA/1654 claiming the Basic Certificate. Frank, G3DVL formed up for the First Class Award as well as the 200 Sticker; G3IGY, Bill and G3RFI, Paul also claimed the First Class Award. A.M. Stickers were claimed by G3WRY (300), GSGH (300), G3MAY (350), G4DBR (400) and G3MKR together with G3NVK, both at 500. The ANY MODE - OVERSEAS ladder saw VK6PG, Alan, claim the Basic and First Class Awards and also the 100 Sticker - nice to hear from you also Alan after many years. Further up the ladder VK4XY climbed to the 100 and 125 rungs while VK2NLE streaked on to the 225 rung. CW now and the EUROPE ladder produced four Basic Certificates for G3IGY, G3RFI, G2BQ and G3DVL. CW Stickers were awarded to G3MAY (50), G2BQ (50), G5GH (50) and G3RFI (50 and 100). Overseas a Basic CW Certificate was awarded to VK6PG. One CW 75 Sticker went to VK4XY. The VHF Ladder accepted G3MAY and G2BQ at the Basic level, G3ADZ moved on to the 50 Rung and G3EKL to the 70 Rung. Finally the EUROPE SPECIAL Ladder and Frank, G3DVL, was awarded Europe Special No. 37 on the 22nd April 1982. Now this is something of a record as Frank joined the Society in December 1980 and has produced the fastest SPECIAL claim since its institution in 1969 - very well done Frank and a particular "Thank You" for all your help with the Nets.

Also moving rapidly is G3ADZ. Dennis was awarded both a SPECIAL BRONZE and a SPECIAL SILVER last February - nearly there, Dennis!!

But the "piece-de-resistance" was the neck and neck fight between G3MKR and G3NVK. This was quite unexpected. I was well aware how G3NVK was proceeding as weekly "sitreps" would reach me of score/cards received. Imagine my surprise when a "Recorded Delivery" package arrived post dated 31st March 1982 from G3MKR with a final claim to reach the SUPREME total!! The following week a further "Recorded Delivery" package arrived, this time from Dick post dated 1st April 1982!! Both claims proved to be 100% and by a strange coincidence the latest confirmed contact was from Dick. So Bernard pipped Dick at the post and was awarded EUROPE SPECIAL SUPREME No. 9 and Dick had to be satisfied with No. 10. My incoming mail has dropped significantly now that G3NVK has reached the top!. Congratulations to you both and "Thank You" for your help on the Awards front.

The WAC Award has been busy too and five more claims have been cleared - No. 10 to G3ADZ, No. 11 to VK2NLE, No. 12 to VK4XY, No. 13 to GM4LLU and No. 14 to G5GH.

The latest OVERSEAS CENTURY FROM ZONE 14 Award has also produced two claimants up to June 1st. The first to reach me was from Alf, G3UAA, whilst the second was from Bert, G3XSN. I almost forgot the QRP ladder there is so seldom any movement on that one that I slipped over the page in the record book - LA2QAA/1654 also submitted a claim for the QRP Ladder and was awarded the Basic Certificate and the 20 and 30 Stickers.

So much for the Ladders - let's recap on the 1981/2 - 559 Contest results, just in case you missed them. Outright winner of the 559 as well as the Le Touquet Award was Alf, G3UAA, Rita, G3NOB, taking the 559 phone Section.

I can't say at this moment just how the two 21st Anniversary Competitions fared; that's the problem of writing in advance, so I'll leave the results until the Autumn "Mercury" - which leads me neatly into my next comment. I have been looking after "AWARDS AND CONTESTS" for the last ten years and have decided to hand over to somebody else. I've thoroughly enjoyed my stint even though it became a little hectic whilst I was also doing General Secretary. I've watched the ladders from day one as I knocked the scheme together during 1968 during my earlier stint as Gen. Sec. and was then very lucky to have two and half years in the sun helping members up the three ladders then in existence.

On returning to G- land in 1972 Jack Cooper coerced me into taking on

### AWARDS AND CONTESTS NEWS - Contd.

the job at the 1972 AGM and I've stuck ever since. The scheme was extended in the early '70's against my wishes but I was to be proved wrong and everything has just grown!! The original certificates were intended for the scheme as first suggested and were adapted for the extended ladders with various stickers. This really didn't do members justice and a new certificate was introduced a couple of years ago - then I started to run out of the more popular stickers like the ANY MODE 200 and the ANY MODE 250!!!. It has taken a long time to sort out the sticker problem and at long last I can say that we have a system adaptable to anything that may be asked for which should be in use by the time you read this. I have had tremendous help from Tony Tabberer (G3WRY) and his family with printing of all sorts and if it wasn't for Tony and his son Roy the sticker problem would still be with us as various attempts with professional printers proved abortive. "Thank You" to all at Fleckney and Widnes - may your muscles never tire!!!.

To all members who have been in touch with me through the Awards Scheme I say good luck in the future and may your claims and your Society continue to improve. If I have upset anybody by disclaiming a QSO here or there my apologies - it wasn't personal!!!.

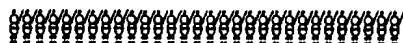
To my successor "Good Luck" and "Thank You" for volunteering to take over!. Who is it? - one of our most famed operators and leader in almost every ladder and Society Award - ALF, G3UAA.

73

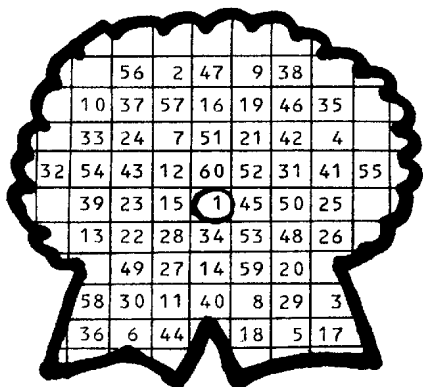
Ray

G3EKL

(On behalf of all "Mercury" readers. I would like to thank Ray for the excellent way in which the Awards Scheme has been conducted over the years. Perhaps the biggest keynote has been fairness - QSLs, QSOs and excuses in any combination never obtained a RSARS Award, only carefully vetted and approved QSLs. Whether a member claimed his first Basic Award or his SUPREME the action at the Awards and Contest "office" was ever the same - a careful vetting of the cards submitted and if they complied with the rule, the issue of an Award. Take a well earned rest, Ray, we know that we can rely upon Alf to continue the good work. Welcome to the fold. Alf!.)



### 3 MINUTE SPECIAL



### AMATEUR RADIO NEWS SERVICE.

(The puzzle on the left first appeared in the Radnor (U.S. ) Repeater News and was published later in A.R.N.S. Bulletin. We hereby make due acknowledgements to both publications.)

All you require is a soft lead pencil and a watch. Start by slightly crossing off No. 1 in the centre of the puzzle, followed by No. 2, No. 3, etc. When you have crossed them all off and reached No. 60, check your time. Par for the course is 3 Minutes.

## LAND MOBILE.

### UK FM GROUP (SOUTHERN).

( The following item appeared in the UK FM Southern Journal, Vol. 6 No.1 and we are indebted to G8CKN (Chairman) and G8YFH (Editor) for permission to reprint in "Mercury". Whilst not dealing directly with Amateur bands the frequencies mentioned (80, 160 and 450 MHz) are near enough to make interesting reading. - Ed.).

### Land Mobile Range versus Output Power.

One of the most frequently asked questions dealing with land mobile radio communications is the relationship between transmitter output power and system range. Depending on who you talk to, it is not uncommon to get such diverse points of view as "Output power has virtually no effect on range" or "Output power has a significant effect on range". As you might expect, the real answer is somewhere in between. We hope that in the next few pages we can provide enough information for you to place the relationship of range and power into the proper perspective.

For the purposes of this discussion it is convenient to talk about three factors which, in general, have an effect on the relationship:

- 1) Line-of-sight propagation
- 2) Beyond the line-of-sight propagation
- 3) Effects of obstructions and reflections on propagation.

### Effective Power.

However, before we cover these factors it is first useful to briefly discuss the relationship between actual transmitted power and the more important effective radiated power (ERP). As you may or may not know, it is common practice to supplement the output power of a transmitter through the use of gain antennas. These antennas actually compress their radiation characteristics so that more of the available power is directed in useful directions. Each increase of 3 dB in antenna gain has the effect of doubling the ERP.

For example, a 10 Watt transmitter with a unity (0 dB) gain antenna has an ERP of 10 Watts (neglecting any feeder losses). However, the same unit with a 3 dB gain antenna has an ERP of 20 Watts and with a 6 dB gain antenna an ERP of 40 Watts. This is an important concept to remember when discussing "output power".

Gain antennas also have an effect on the strength of received signals which can potentially lead to more reliable communications or communications over greater distances. However, because the gain may also increase the strength of noise or interfering signals, it is difficult to make any general statements about the effect.

### The three factors.

With the relationship between ERP and transmitter power in mind, we can now go on to discuss the factors that affect radio range.

#### 1) Line-of-sight propagation.

The overriding factor affecting all VHF and UHF communications is the phenomenon that these frequencies do not normally experience the same reflection from the upper areas of the atmosphere (ionosphere) that is experienced with lower radio frequencies. Instead, the general range of VHF and UHF frequencies is what is called "line-of-sight" limited. This means that the overall range is basically limited to the horizon (actually "radio" horizon which is somewhat further than the optical horizon). It is obvious that the higher the antenna position, the greater the line-of-sight distance and associated communications range. This can be clearly seen from the nomograph in Fig.1.

Within this distance there is some loss of signal strength in proportion to distance from the transmitter and this effect increases with frequency. While at VHF frequencies this loss is not generally a limiting factor, on UHF it can limit the useful communication range to somewhat less than line-of-sight range, particularly with very low power levels. Nevertheless, with the power levels and antenna gains typically used in mobile communications, good communication within the

## LAND MOBILE - Contd.

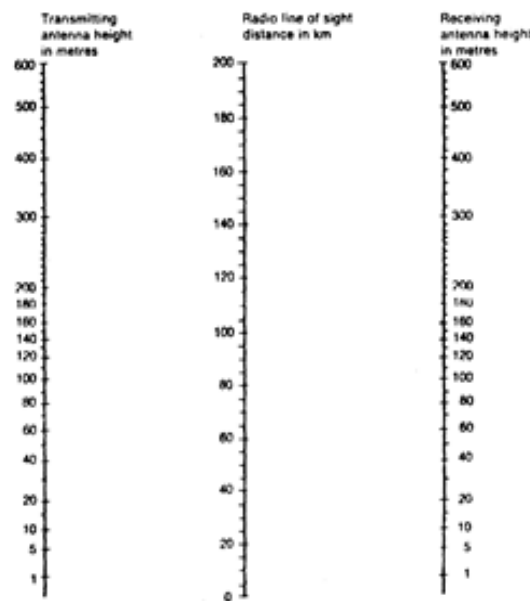


FIGURE 1 Radio line of sight distance

line-of-sight range can normally be expected. However, a true unobstructed line-of-sight path is often difficult to achieve. We will discuss the effects of obstructions a little later.

### 2) Beyond the line-of-sight propagation.

While in case 1 it was stated that VHF and UHF frequencies are generally line-of-sight limited, a small percentage of the signal is, in fact, diffracted around the curvature of the earth. The exact percentage is a function of frequency with lower frequencies exhibiting a significant amount. This diffraction is one major reason why the 80 MHz band normally exhibits greater range than 160 MHz which, in turn, has a greater range than 450 MHz.

While the percentage of signal diffraction varies with frequency the absolute amount of signal that is diffracted is related to how strong the signal was initially. Here is where power does play a role in communications range. Shown in Fig. 2. are calculated range curves for communications in the 80, 160 and 450 MHz bands for various power levels between a 30 M high base station antenna and a unity gain mobile antenna. It can be seen from the curves that the range at 160 MHz is significantly more than at 450 MHz and at 80 MHz it is even greater.

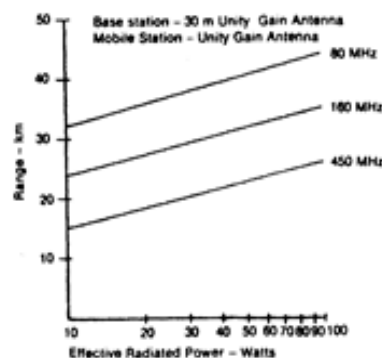


FIGURE 2. Typical range VS power

However, the effect of power is not nearly as great. On all bands doubling the power increases the range only a small amount. For example, at 160 MHz it requires about 10 times more power to increase the range by only 50%.



### LAND MOBILE - Contd.

Important to note here is the fact that for two-way communication the listed power level must be used at both the base and mobile otherwise the power level of the lower powered unit will be the limiting factor in two-way communication.

Obstructions of in the form of steel and concrete buildings, hills, mountains and even trees have a disruptive effect on the normal propagation of land mobile communications. Because of the complex nature of each obstruction, it is impossible to give any typical values for their effects on range. However, in general it can be said that this disruptive effect increases with frequency.

On the other hand, a useful propagation effect - reflections from obstructions outside the desired path - also becomes more significant as frequency is increased. In fact, in the 450 MHz band this effect dominates most obstructed paths.

### The Effects - Band by Band.

To better explain how these effects influence land mobile communications, it is better to look at each band individually.

In the 80 MHz band the disruptive effect of obstacles is the least significant of the three applicable bands. The effect of any single reasonably sized object will not usually break communications although in urban areas the cumulative effect of many large buildings can seriously limit communications reliability. Since the effects of reflections in this band are minimal, only a very limited use can be made of them.

In the 160 MHz band there is some increase in the disruptive effect of obstacles while there is also a moderate increase in reflective effects. As in the 80 MHz band, the cumulative disruptive effect of a number of buildings will still limit communications reliability in urban areas.

However, on the 450 MHz band there are some significant changes. On this band the disruptive effect of obstacles is nearly complete but the reflective effect is so great that it dominates. Signals in this frequency range can reflect a number of times with only moderate losses in signal strength. This effect can be of great use in urban areas where multiple reflections from buildings can provide useful signals to and from locations which are normally inaccessible when using the other mobile radio frequency bands.

As mentioned earlier, the effects of obstructions and reflections are very complex. This also makes their relationship with power difficult to predict. To be sure, increased power can improve communications reliability in areas where the line-of-sight path is obstructed. However, in many cases it may require substantial increases in power to provide only marginal improvements in communications.

The real key to providing reliable communications to such areas lies with the basic planning of the system. Careful attention must be made to avoid close-by objects that would obstruct the line-of-sight path to the general area where coverage is required. This should be done by installing the antenna at a suitable location and height. When coverage of a highly concentrated urban area is required, it is best to start the planning by selecting the UHF frequency range to ensure maximum utilization of reflected signals. Only after these measures have been taken should increased power be considered and even then it should be remembered that no matter how high the base station power, the talk-back range of associated mobile or portable units is limited by their power. The only real solution in some cases may be a Wide Area Coverage reception or co-channel transmission.

### Summary land Mobile Propagation Factors.

Summarizing the three factors that effect land mobile communications range and their relationship to power we have:

Line-of-sight propagation - Range determined by antenna height and freedom from obstructions, power has little effect.

Beyond the line-of-sight propagation - Range primarily determined by frequency and to a lesser extent power.

## LAND MOBILE - Contd.

Obstructed and Reflected Propagation - Range determined by the type of the obstructions, the frequency range and to some extent the power.

### Range Prediction.

The nomogram in Fig.3 is intended for detailed evaluation of the APPROXIMATE MAXIMUM operating range in two-way VHF and UHF mobile radio systems!

### Important.

There are several limiting factors which must be recognized:

It is assumed that the terrain is flat and no obstructions such as buildings, etc., are present in the line-of-sight.

If the mobile unit has a lower transmitter power than the fixed station, the lower power figure should be used in order to ensure valid range values for both transmitting directions. If, however, the larger figure is used, only the range of the fixed transmitter is found. (The range of the lower powered mobiles may be compensated through the use of diversity receivers in the fixed station system).

### Reference Conditions.

The nomograph has been referenced to a set of fixed conditions:

Transmitter:

25 Watts output

Unity (0 dB) antenna Gain

Antenna Height 30 Metres

1 dB Feeder loss

Receiver:

2  $\mu$ V input signal for useable audio output (See Note)

Unity (0 dB) Antenna Gain

Antenna Height 2 Metres

(Note: In the Amateur Service we would consider 0.2  $\mu$ V as useable. This means the improvement of 20 dB will increase the working range by at least 2.5 times. Editor.)

This effect of changes from these reference conditions can be found by using the supplementary curves found at the top of the nomograph. To use these curves, simply move along the line of the condition which has been changed until the new condition is matched. Then project down to the horizontal reference axis to find the dB effect of that change on the operating conditions. When several conditions are changed, the respective dB effects can be arithmetically added to find the cumulative effect.

If all reference conditions are valid, the maximum range is found where the reference line intersects the range for the frequency in question.

If the reference conditions are not valid the maximum range is found where a vertical line drawn from the cumulative effect of the changed conditions intersects the range curve for the frequency in question.

### Examples.

- I) Under reference conditions, find the range when a frequency of 160 MHz is used.  
Projecting up along the 0 dB line to the reference until it intersects the 160 MHz curve, a maximum range of about 26 km can be read.
- II) The transmitter output power ( $P_o$ ) is changed to 10 Watts. Find the range at 450 MHz.  
Projecting down from the 10 Watts point on the  $P_o$  curve at the top of the page to the reference line it is found that the effect is to change the reference conditions by -4 dB. Projecting this effect into the range curves, the intersection of this condition with the 450 MHz range curve produces a maximum range of about 14 km.

## LAND MOBILE - Contd.

III) If the transmitter output power ( $P_o$ ) is now left at 10 Watts, the transmitter antenna height ( $h_a$ ) is raised to 50 Metres, the necessary receiver input voltage ( $U_i$ ) is raised to 3  $\mu$ V (perhaps due to the local noise level at the receiver) and the antenna feeder ( $FL_i$ ) (an increase of 2 dB). find the approximate frequency is 160 MHz.

The new range is found by first noting the effects of the various changes in condition.

1) Projection from 10 Watts on  $P_o$  curve intersects reference at:

-4 dB

2) Projection from 50 Metres on the ( $h_a$ ) curve intersects reference at:

+4.5 dB

3) Projection from 3  $\mu$ V on  $V_i$  curve intersects reference at:

-3.5 dB

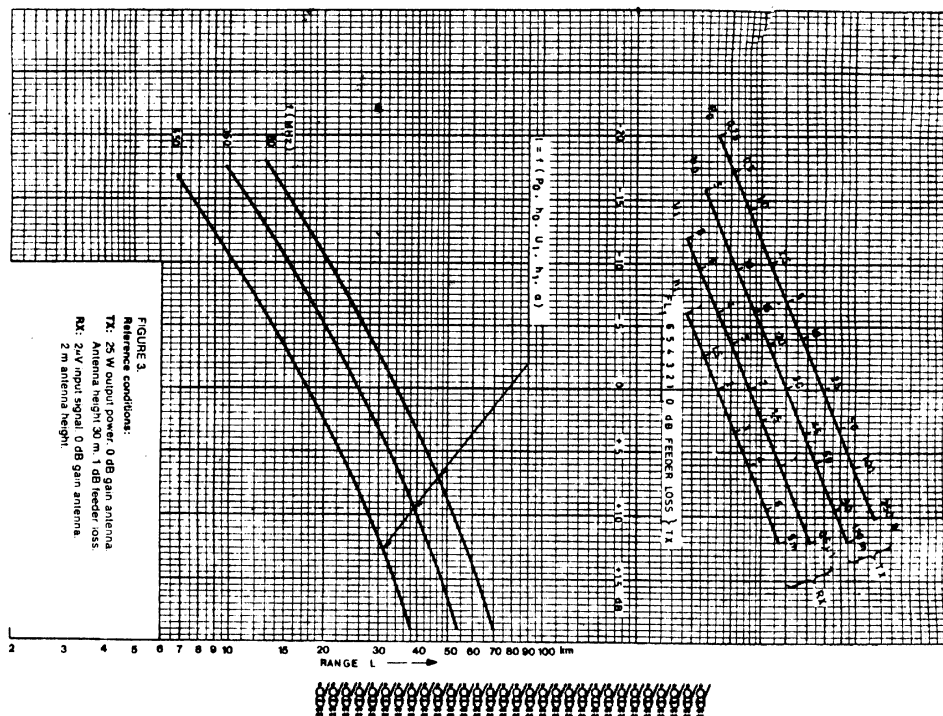
4) Projection from 3 dB on  $FL_i$  curve intersects reference at:

-2 dB

Nett Cumulative effect:

-5 dB

The resulting range can be found by projecting a vertical line from -5 dB point on the reference line to its intersection with the 160 MHz curve. The result is a maximum range of about 20 km.



## SPECIAL EVENT STATION.

K2AE, the Schenectady Amateur Radio Club station, will be operating as a Special Event Station from the Museum Building at Fort Crown Point to commemorate its building by the British on August 4th 1759. The dates are August 14th (Saturday) and 15th (Sunday) and operating times 1500 GMT Saturday to 1900 GMT Sunday. Frequencies 10 KHz up from the bottom edge of the U.S. General Bands. They are expecting a call from YOU - tell them you are RSARS, and pass the word along at the local Club. They need all the contacts they can get and RSARS have promised to help. Good Luck.

## RSARS COMPUTER SECTION

### (CONTACT G3TAN)

There was quite a bit of interest as a result of my call for ZX81 owners/operators to stop being so shy about their interest. G3DVL put us in contact with G4INP, who produces a handy, information packed newsletter, the SARUG Newsletter. (Sinclair Amateur Radio Users Group) We have received permission to quote from the Newsletter and will do from time to time, as items appear to be of interest to our members,

John Hobley, G4FBQ sent us a copy of a nice little programme for QRA locator work, and this is reproduced overleaf. John also mentions that although he has not had 'whiteout' problems with his ZX81, he has had heat dissipation problems when using the Sinclair supplied PSU. He may remove the voltage regulator and put it in a larger heat sink on the PCB. When not using the Sinclair printer, then a 7.5V PSU can be used which reduces the voltage drop across the regulator.

You will have seen the Commodore running a little amateur radio programme at the AGM in Catterick. While this is a super desk top machine, the ZX owners are all going to be drooling over the new ZX product, the SPECTRUM. More facilities than the BBC Basic, for about half the price. Colour, super graphics, full size 'feeble' keyboard etc, etc. What a breakthrough for Sinclair.

However, RSARS Computer Section is not only for Sinclair owners, although with over 500,000 machines sold, it is likely that many of you will be ZX81 based. So whatever your micro interest is we would like to see some input from you (pun deliberate) G3TAN QRV,

From Doug Stone whose young son arrives in Harrogate shortly to join the Corps, clutching his application to join the RSARS, (well done Andrew).

In response to your para about ZX81 owners Andrew is anxious to kick off with a programme which allows the keyboard to originate Morse Code, at present only at about 8 wpm, which is about his present manual speed. This direct morse programme, including some machine code which saves time runs to about 150 lines includes compound signs like AR, VE, VA etc. It may not be new but I have not seen any published and perhaps ZX81 or ZX80 (8K ROM) buffs may produce a shorter one. What I need is a device which will convert, using ZX81 power supply (9V), a low level SAVE tone into a keying current to allow a relay or other device to key my TX. It might even persuade G3AEF to go back to his old CW kick, neglected for years. Of course, the programme will have to be worked up over 8 wpm to suit most of the CW fraternity, but Andrew says this is not possible - is he right?

With regard to the 'whiteout' using 16K RAM packs the ZX board is distorted slightly when a key is pressed and contacts are lost momentarily on the interface edge connector. Try foam rubber between the main board and the pack along the bottom edge or tape back the vertical pack to the main case to avoid it leaning backwards.

I must add that the programme is entirely Andrew's responsibility, I have only typed it off the screen and hope it is accurate, but the prog itself works well and has been tried over the air. As far as the computer and add-on bits are concerned my job has been the soldering from kits!

### Morse Input & Decoding - By Glynne Hughes G8DML.

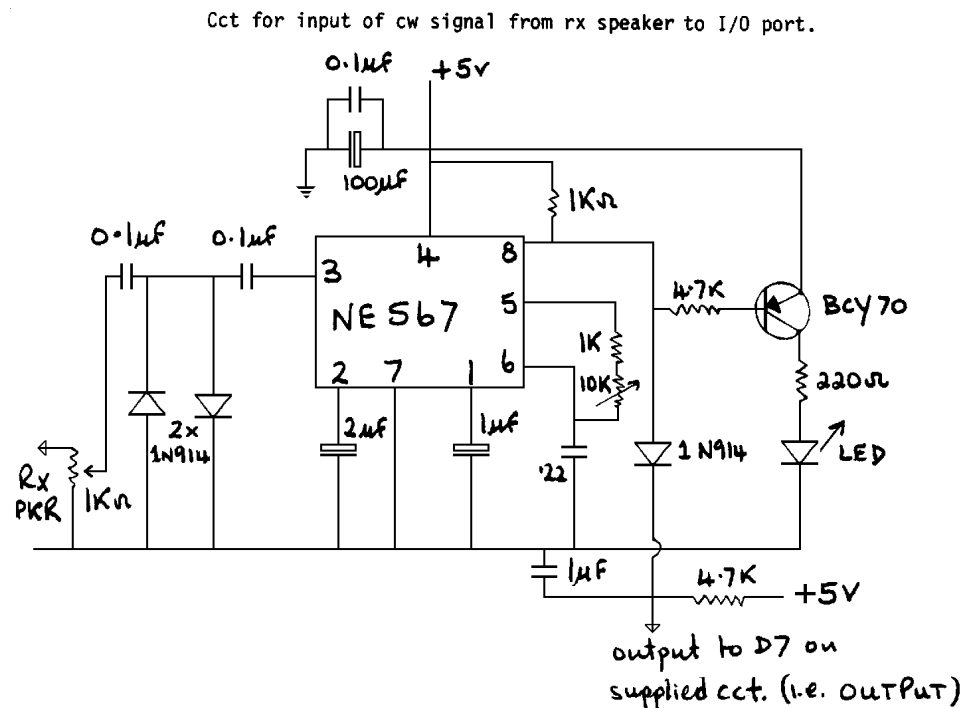
Glynne has submitted a very full 11 page document on his experiments so far. There is no room to publish it fully but the following is a brief précis of his comments. A copy of the full document can be had for 50p & an SAE.

- a) All comments refer to the cct of the experimental i/o port in issue 2.
- b) The resistors on the data lines can be any value from 10k to 100 k, He uses 10k.
- c) Glynne sees no reason why the cct cannot be used with the new ROM ZX80. Please pass on any comments re this to G4INP.
- d) Decoding addresses lines A14, A13, MREQ & WR thus enabling buffer at all times. If 16K RAM is in use then use line A15 & A14 instead of 13 & 14. This will correspond to RAM addresses of 49512 to 65535, He suggests that 50000 is convenient.

### Morse Input & Decoding - Contd.

- e) More precise addressing (i.e. between RAM & ROM) can be had by using more address lines. Full details are given.
- f) Inputting & outputting uses two 4-bit latches & 2 tri-state buffers, for which circuits are given.
- g) The cct given below is used for "off-air" copying of the CW. Pot VR1 sets input to 567 to about 600 mv p-p. Adjusting VR2 will cause the LED to flash in time with the CW.
- h) The details seem to G4INP to form the foundation of some very useful work & Glynne is to be congratulated on a most informative letter.
- i) Glynne also sends a CW decode program in a developing state. It will not yet "selftime" the incoming CW.

For further details send 50p & an SAE please to cover copying costs.



### Programme "Direct Morse from the Keyboard: ZX80/8K ROM OR ZX81/16K"

```
1 (REM Type 41Xs)
10 LET X=16514
20 LET A$=""
30 IFA$="" THEN INPUT A$
40 IFA$="S" THEN STOP
50 POKE X,16 * CODE A$ = CODE A$ (2) - 476
60 LET X = X + 1
70 LET A$ = A$ ( 3TO )
80 GOTO 30
```

Programme "Direct Morse from the Keyboard: ZX80/8K ROM or ZX81/16K" - Contd.

NOW RUN AND ENTER THE FOLLOWING:-

```
FF00
0000
2A8240
ED5B8440
0100000
E5
D3FF
CDA240
DBFE
CDA240
E1
B7
ED52
30EF
C9
2A8440
37
ED42
30FB
C9
S
```

NOW CONTINUE WITH THE PROGRAMME:-

```
10    DIM OS (8, 7, 2)
15    FAST
20    FOR J=128
30    LET N = 1
40    LET F = INT ((26*2**(J - 1) + 2**(J - 1)*(2/3))+0.5)
50    GOSUB 300
60    LET F = INT ((30*2**(J-1) + 0.5)
70    GOSUB 300
80    LET F = INT ((32*2**(J - 1) + 0.5)
90    GOSUB 300
100   LET F = INT ((36*2**J - 1) + 0.5)
110   GOSUB 300
120   LET F = INT ((40*2**J - 1) + 0.5)
130   GOSUB 300
140   LET F = INT ((42*2**(J - 1) + 2** (J - 1)*(2/3))+0.5)
150   GOSUB 300
160   LET F = INT ((48*2**(J - 1) = 0.5)
170   GOSUB 300
180   NEXT J
204   LET Z$ = INKEY $
206   IF Z$ = " " THEN GOTO 204
209   GOTO 2000
270   GOSUB 1000
275   CLS
```

(continued over page)

Programme "Direct Morse from the Keyboard: ZX80/8K ROM or ZX81/16K" - Contd.

```
280   GOTO 200
300   LET F = INT ((1/(F*17E-6)) + 0.5)
305   O$ (J,N,2) = CHR$ (F - (INT(F/256) * 256))
310   LET O$ (J,N,1,) = CHR$ (INT (F/256))
320   LET N = N + 1
330   RETURN
1000  FOR X = 1 TO LEN N$
1010  LET N = CODE N$ (X) - 37
1020  LET J = CODE X$ (X) - 28
1030  LET D = CODE D$ (X) - 28 * 16
1040  IF N > 128 THEN GOTO 1500
1045  IF N < 0 THEN GOTO 1200
1050  POKE 16516, CODE O$ (J,N,2)
1060  POKE 16517, CODE O$ (J,N,1)
1070  POKE 16515,D
1080  LET C = USR16518
1090  NEXT
1110  RETURN
1200  FOR T = 1 TO D * 8
1210  NEXT T
1220  GOTO 1090
1500  LET N = N - 128
1505  IF N = 1 OR N = 2 OR N=3 OR N=4 OR N=5 OR N=7 THEN GOTO 1510
1506  STOP
1510  IF N = 1 THEN GOTO 1600
1520  LET F = 256*CODE O$ (J,N-1, 1) + CODE O$ (J,N-1,2)
1530  LET F1 = 256*CODE O$ (J,N,1) + CODE O$ (J,N,2)
1540  LET F = INT ((F + 1 + F)/2 + 0.5)
1550  LET F1 = F - (INT (F/256)*256)
1560  LET F = INT (F/256)
1570  POKE 16516,F1
1580  POKE 16517,F
1590  GOTO 1070
1600  LET F=256*CODE O$ (J,N-1,1) + CODE O$(J,N,2)
1610  LET F1 = 256*CODE O$ (J-1,7,1) + CODE O$ (J-1,7,2)
1620  GOTO 1540
2000  LET SF = 0
2010  LET X$ = "666666"
2011  IF Z$ = ";" THEN LET D$ = "41114"
2012  IF Z$ = ";" THEN LET N$ = "DDDDD"
2046  IF Z$ = "5" THEN LET D$ = "11111"
2047  IF Z$ = "5" THEN LET N$ = "DDDDD"
2048  IF Z$ = "2" THEN LET N$ = "DDDDD"
2049  IF Z$ = "2" THEN LET D$ = "11444"
2050  IF Z$ = "A" THEN LET D$ = "14"
2060  IF Z$ = "B" THEN LET D$ = "4111"
2070  IF Z$ = "C" THEN LET D$ = "4141"
2071  IF Z$ = "D" THEN LET D$ = "411"
2072  IF Z$ = "E" THEN LET D$ = "1"
```

(continued over page)

Programme "Direct Morse from the Keyboard: ZX80/8K ROM or ZX81/16K" - Contd.

```
2075 IF Z$ = "H" THEN LET D$ = "11111"
2076 IF Z$ = "I" THEN LET D$ = "11"
2077 IF Z$ = "J" THEN LET D$ = "1444"
2078 IF Z$ = "K" THEN LET D$ = "414"
2079 IF Z$ = "L" THEN LET D$ = "1411"
2080 IF Z$ = "M" THEN LET D$ = "44"
2081 IF Z$ = "N" THEN LET D$ = "41"
2082 IF Z$ = "O" THEN LET D$ = "444"
2083 IF Z$ = "P" THEN LET D$ = "1441"
2084 IF Z$ = "Q" THEN LET D$ = "4414"
2085 IF Z$ = "R" THEN LET D$ = "141"
2086 IF Z$ = "S" THEN LET D$ = "111"
2087 IF Z$ = "T" THEN LET D$ = "4"
2088 IF Z$ = "U" THEN LET D$ = "114"
2089 IF Z$ = "V" THEN LET D$ = "1114"
2090 IF Z$ = "W" THEN LET D$ = "144"
2091 IF Z$ = "X" THEN LET D$ = "4114"
2092 IF Z$ = "Z" THEN LET D$ = "4411"
2093 IF Z$ = "Y" THEN LET D$ = "4144"
2094 IF Z$ = "3" THEN LET D$ = "11144"
2095 IF Z$ = "3" THEN LET N$ = "DDDDD"
2100 IF Z$ = "A" THEN LET N$ = "DD"
2101 IF Z$ = "B" THEN LET N$ = "DDDD"
2102 IF Z$ = "C" THEN LET N$ = "DDDD"
2103 IF Z$ = "D" THEN LET N$ = "DDD"
2104 IF Z$ = "E" THEN LET N$ = "D"
2105 IF Z$ = "F" THEN LET N$ = "DDDD"
2106 IF Z$ = "G" THEN LET N$ = "DDD"
2107 IF Z$ = "H" THEN LET N$ = "DDDD"
2108 IF Z$ = "I" THEN LET N$ = "DD"
2109 IF Z$ = "J" THEN LET N$ = "DDDD"
2110 IF Z$ = "K" THEN LET N$ = "DDD"
2111 IF Z$ = "L" THEN LET N$ = "DDDD"
2112 IF Z$ = "M" THEN LET N$ = "DD"
2113 IF Z$ = "N" THEN LET N$ = "DD"
2114 IF Z$ = "O" THEN LET N$ = "DDD"
2115 IF Z$ = "P" THEN LET N$ = "DDDD"
2116 IF Z$ = "Q" THEN LET N$ = "DDDD"
2117 IF Z$ = "R" THEN LET N$ = "DDD"
2118 IF Z$ = "S" THEN LET N$ = "DDD"
2119 IF Z$ = "T" THEN LET N$ = "D"
2120 IF Z$ = "U" THEN LET N$ = "DDD"
2121 IF Z$ = "V" THEN LET N$ = "DDDD"
2122 IF Z$ = "W" THEN LET N$ = "DDD"
2123 IF Z$ = "X" THEN LET N$ = "DDDD"
2124 IF Z$ = "Y" THEN LET N$ = "DDDD"
2125 IF Z$ = "Z" THEN LET N$ = "DDDD"
2126 IF Z$ = "?" THEN LET D$ = "114411"
2127 IF Z$ = "?" THEN LET N$ = "DDDDDD"
2128 IF Z$ = "*" THEN LET D$ = "11141"
```



Programme "Direct Morse from the Keyboard: ZX80/8K ROM or ZX81/16K" - Contd.

```
7073 IF Z$ = "F" THEN LET D$ = "1141"
7074 IF Z$ = "G" THEN LET D$ = "441"
2129 IF Z$ = "*" THEN LET N$ = "DDDDD"
2130 IF Z$ = "1" THEN LET D$ = "14444"
2131 IF Z$ = "1" THEN LET N$ = "DDDDD"
2132 IF Z$ = "4" THEN LET D$ = "11114"
2133 IF Z$ = "4" THEN LET N$ = "DDDDD"
2134 IF Z$ = "6" THEN LET D$ = "41111"
2135 IF Z$ = "6" THEN LET N$ = "DDDDD"
2146 IF Z$ = "7" THEN LET D$ = "44111"
2147 IF Z$ = "7" THEN LET N$ = "DDDDD"
2148 IF Z$ = "8" THEN LET D$ = "44411"
2149 IF Z$ = "8" THEN LET N$ = "DDDDD"
2150 IF Z$ = "9" THEN LET D$ = "44441"
2151 IF Z$ = "9" THEN LET N$ = "DDDDD"
2152 IF Z$ = "Ø" THEN LET D$ = "44444"
2153 IF Z$ = "Ø" THEN LET N$ = "DDDDD"
2154 IF Z$ = ":" THEN LET N$ = "DDDDD"
2155 IF Z$ = ":" THEN LET D$ = "14141"
2156 IF Z$ = "." THEN LET N$ = "DDDDDD"
2157 IF Z$ = "." THEN LET D$ = "111414"
2158 IF Z$ = "/" THEN LET D$ = "14111"
2159 IF Z$ = "/" THEN LET N$ = "DDDDD"
3000 GOSUB 1000
3040 GOTO 201
```

COMPOUND SYMBOLS:-

"." =  $\overline{AR}$     "." =  $\overline{VA}$     "/" =  $\overline{AS}$     "?" =  $\overline{IM}$     "\*" =  $\overline{VE}$

\*\*\*\*\*

Naturally I want to keep this section closely allied to home computer applications in amateur radio, and I would appreciate it if you kept your longer programmes devoted to that principle - we do not want to start yet another micro magazine. With over 500,000 machines sold, the ZX81 is probably going to be sitting on your rig desk, rather than, say, an AFPLE II (unless you have a lot of loot), so a lot of the material appearing here will be Sinclair based. But we welcome anything you wish to inject, provided it has an amateur radio flavour. G3TAN QRV.

From SARUG:

(SINCLAIR AMATEUR RADIO USER GROUP) NEWSLETTER  
(WITH PERMISSION AND TKS)

1K LOCATOR PROGRAMS BY GU3MBS

These are separate programs for separate purposes, Program "A" is for general VHF operating : it displays the azimuth and distance of distant locators, Program "B" is for VHF contest log scoring: it calculates distances and RSGB contest points, and it keeps a running total of RSGB points and points at "1pt/km".

In each case the program has been condensed as much as possible in order to create a worthwhile display of the last several computations. A data string (D\$) is held in the variables and contains 13 bytes of pointers for data retrieval, 17 bytes forming a look-up table for evaluating the last character of the locator, six successive concatenated string valued expressions for X and six successive concatenated string valued expressions for Y. Also held in the variables are the conversion from degrees to radians (K), plus the home station lat and long (V and U).

The program and its variables are SAVED under program control (line 10). The five character locator is input in line 40. The SCORE (line 50) creates some working space for the mathematical

### 1K LOCATOR PROGRAMS BY GU3MBS - Contd.

computations which follow. Lines 60 to 110 constitute a FOR-NEXT loop in which six successive values of W, X, and Y are computed. The first five times around W gives numerical value to the characters 1 to 5 of the locator, X is given successive longitude values, and Y is given successive latitude values. On the sixth time around the loop, trigonometrical computations are made of azimuth (prgm A) and distance (A bytes of D\$. Wherever possible numerical integers are avoided in the program, string valued expressions being used instead in order to contest points in each system. Line 140 prints out the computations.

The programs will crash when evaluating a distant point which is on the same line of longitude (i.e. due North or South) as the home station, and for this reason the exact QTH of a home station should be entered rather than the centre of a minor square. Those who live on or very near to the line of longitude which passes through the centre of their square should displace their longitude by about 1 minute.

---

#### PROGRAM A. Distance & Bearings

```
1.  Enter:
    POKE 16389,68                                } ____ { 16K RAM
    NEW                                           }
{ Machines
  FAST
  LET D$= "3ENO"+CHR$ 67+CHR$ 87+CHR$117+CHR$ 119+CHR$ 136+CHR$ 138+ CHR$
  146+CHR$ 166+CHR$ 175+ "3555311135553 1Ø3W-(26 AND W>57) 6Ø" X-2454
  XX+G*W+(GØ AND W=28) (X+VAL D$(W-24)-U) /3Ø/K36Ø.5+ACS ((SIN Y-SIN V*COS
  W) /      COS V/SIN W) SGN X*K52Y+8*W-(2Ø8 AND W>59)Y-WY+(W=28)(6*Y-VAL
  D$(W- 17))/48/K6366.71*W"
  PRINT LEN D$                                (174 must show)
  LET K=18Ø/P1                                (π via FUNCTION)
  LET L$ = "   "
  (6 spaces)
  LET U = (your longitude) *3Ø
  LET V = (your latitude) /K
10  SAVE "A"
40  INPUT L$(TO 5)
50  SCROLL
60  FOR J=VAL "1" TO VAL "6"
70  LET W=CODE L$(J)
80  IF J=VAL "6" THEN LET W=ACS (SIN V*SIN Y+COS V*COS X*COS Y) 9Ø LET
    X=VAL  D$(CODE D$(J) TO VAL "CODE D$(J+1)-1")
100 LET Y=VAL D$(VAL "CODE D$(J+6)" TO VAL "CODE D$(J+7)-1")
110 NEXT J
140 PRINT AT VAL "9",CODE " ";L$; INT Y; TAB CODE "£" ; VAL "INT X-(36Ø AND X>
    = 36Ø)"
150 GOTO CODE "C"
LIST
    (homes cursor)
(prepare tape to record)
GOTO 1Ø                                (records program "A")
```

=====

## 1K LOCATOR PROGRAMS BY GU3MBS - Contd.

### PROGRAM B. Contest Scoring

1. Enter:

POKE 16389,68

} \_\_\_\_ { 16K RAM

NEW

}

{ Machines

FAST

LET D\$= "3ENO"+CHR\$ 67+CHR\$ 87+CHR\$ 99+CHR\$ 101+CHR\$ 117+CHR\$ 120+CHR\$ 128+CHR\$ 148+CHR\$ 159+"35553111135553103W-(26 AND W>57)X\*60-  
2454XX+6\*W+(60 AND W=28)(X+VAL D\$ (W-24)-U)/30/K INT (6366.71\*W)52Y +W\*8-  
(208 AND W>59)Y-WY+(W=28) (Y\*6-VAL D\$(W-17))/48/K1+2\*INT(X/50)"

PRINT LEN D\$

(158 must show)

LET K=180/PI

( $\pi$  via FUNCTION)

LET L\$= " "

(6 spaces)

LET U = (your longitude) \*30

LET V = (your latitude) /K

10 SAVE "B"

20 LET T=VAL "0"

30 LET Z=VAL "0"

40 INPUT L\$( TO 5)

50 SCROLL

60 FOR J=VAL "1" TO VAL "6"

70 LET W=CODE L\$(J)

80 IF J=VAL "6" THEN LET W=ACS(SIN V\*SIN Y+COS V\*COS X\*COS Y)90 LET X=VAL  
D\$(CODE D\$(J) TO VAL "CODE D\$(J+1)-1")

100 LET Y=VAL D\$(VAL "CODE D\$(J+6) " TO VAL "CODE D\$(J+7)-1")

110 NEXT J

120 LET T=T+X

130 LET Z=Z+Y

140 PRINT AT VAL "4" , CODE " " ; L\$ ; X ; " " ; Y , T ; " " ; Z

150 GOTO CODE "C"

LIST AND GOTO 10

(record prgm B)

=====

2a) D\$ must be entered accurately. CHR\$, VAL, ACS (arcos), SIN, COS, SGN, AND & INT are all entered via FUNCTION key.

b) Longitudes West of Greenwich are negative (as are latitudes South of Equator). Where lat & long are known in deg., min., sec. these may be entered as expressions:

e.g. for 49° 27' 55"N      02° 34' 21"W

LET U = (-2-

34/60-21/3600)\*30

LET V =

(49+27/60+55/3600)/K

c) Valid for locators within 36-62 deg N latitude, 12 deg W to 40 deg E longitude.

d) Dists based on International Nautical Mile of 1.852km, and are rounded down to nearest km. Contest scores are for "1pt/km" & RSGB 50km radial ring systems. Great Circle Bearings are rounded to nearest deg.; bearings are not valid for paths crossing International Date Line (most unlikely!).

# 1K LOCATOR PROGRAMS BY GU3MBS - Contd.

- e) Sample displays (using values of U & V as above). Program "A" columns are Locator, Dist (km), Bearing (deg). Program "B" columns are Locator, Dist (km), RSGB pts, running totals for km & pts.

|    |       |     |    |    |       |     |    |      |    |
|----|-------|-----|----|----|-------|-----|----|------|----|
| A: | AM68C | 419 | 42 | B: | AM68C | 419 | 17 | 419  | 17 |
|    | ZN80F | 429 | 22 |    | ZN80F | 419 | 17 | 848  | 34 |
|    | AL76G | 311 | 54 |    | AL76G | 311 | 13 | 1159 | 47 |
|    | AN80F | 499 | 36 |    | AN80F | 499 | 19 | 1658 | 66 |
|    | AN80E | 502 | 36 |    | AN80E | 502 | 21 | 2160 | 87 |

Prgm A display shows up to 10, & prgm B up to 5 computations. Display will continue to SCROLL for further locator inputs.

- f) To get back to LIST, hit NEWLINE twice without entering a locator. GOTO 40 gets back to program execution. In prgm B, GOTO 20 re-zeros points counter.
- g) When LOADED programs execute immediately, and are ready for locator input.

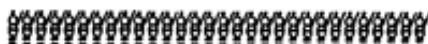
ZX-80 8KK ROM 1K RAM; ZX-81 1K RAM. Copyright Steven H. Gibbs GU3MBS 22 Dec 81

## Other Comments by GU3MBS

Distances in QRA programs should NOT be rounded to the nearest integer, since rounding up will contravene RSGB VHF contests Rule 7.

Byte-saving - GOTO 40 takes 9 bytes, GOTO VAL "40" takes 6 but GOTO CODE "C" takes 5.

A very good point I agree BUT it detracts from readability (G3INP).



## NOTICE

### REGULATION OF EXPOSURE TO MERCURY

On the 24th day of February, 1982 a regulation prescribing mercury as a designated substance and regulating the exposure of a worker to mercury was made by the Lieutenant Governor in Council under the Occupational Health and Safety Act, R.S.O. c. 321 ("the Act")

This Regulation was filed with the Registrar of Regulations on the 9th day of March 1982, and will be published in The Ontario Gazette on the 27th day of March 1982.

Copies of the Regulation may be purchased from the Government Bookstore 680 Bay Street, Toronto, Ontario at a cost of \$1.00

General inquiries with respect to the Regulation may be directed to

The Designated Substances Project  
Ministry of Labour  
400 University Avenue  
Toronto, Ontario M7A 1T7  
(416) 965-8710.

Questions with respect to the specific application off the Regulation may be addressed to Ministry of Labour field offices.

*How much exposure?  
Surely 4 times per year not dangerous!*

Ministry of Labour  
Ontario

FROM: VE3QE



FROM 1283 VIA THE OWL

## THE YOUNGER SIDE OF JIMMY

(Items to G3TAN)

From MIKE BUCKLEY, ACF/CCF REP : "The ACF/CCF side of the Society has not been very active during the last year, though members are active on the National ACF/CCF Radio Net. Last September I circulated all schools who participate in this net and suggested that RSARS membership was to their advantage. I shall do this again this year in September. I believe that there was a response to this and think the overall effort is worthwhile. Presently I am working on a separate list showing the number of Ex Cadets who are Society members and also those in the ACF/CCF who hold amateur call signs and/or who are members of RSARS. This will provide interesting reading.

The Cadet National Net continues to go from strength to strength, and provides a popular training medium encouraging Cadets to join Royal Signals. Unfortunately the demand for recruits is not now able to provide every applicant with a place

Could we of the cadets make a request for assistance, possibly? Throughout the country there are little pockets of signalling resistance, very often looking for leadership, indeed expertise. Can any RSARS member offer to help, either in a uniformed or non uniformed capacity? Cadets parade at least once a week, the ACF in the evenings, the CCF usually during the day. Signalling is often restricted to the availability of an instructor but is based entirely on the current VP Pamphlet, using A41 and C13 equipments, officially that is. However most Cadets units have other sets, ranging from No 12 sets, to 52, C12, C11, 19 and even a few 88/31 sets as well as civilian sets for amateur use. Please drop me a line if you can help and I will put you in touch with your nearest Cadet Unit which is interested in signalling".

The address for Mike is: Mike Buckley, 12 Ranmore Avenue, Croydon, Surrey, CR0 5QA.

=====

ARMY APPRENTICES COLLEGE, HARROGATE: FROM DANNY KAY, G4KIC

(CLUB: G3HKR)

"The College station is one of the many hobbies open to apprentices, and has been active for 29 years. Every Apprentice is required to participate in a hobby during his 2nd term and AR falls way behind Gliding, FreeFall parachuting and Motorcycling in the popularity stakes. It must be noted in mitigation that the Apprentice spends most of his waking hours immersed in communications and it is therefore only the real enthusiastic ones who join G3HKR for a hobby. At present the station has 10 Apprentices who regularly attend, the majority of whom are studying for their RAE examination. The college has some fine equipment and includes a TRIO 830S, HW100 and FRDX400RX.

We have a good QTH on the same plateau as Menwith Hill and HMS Forest Moor. At present we are preparing our plea for more equipment to expand into RTTY SSTV and VHF and upwards. Two of the Apprentices have licences, Mark Gummow (G8UXC) and Colin Gardner (G6JPW). Three others are anxiously awaiting the results of the May exam. Interest in micro computers applied to ham radio is very strong, and we are fortunate in being able to 'borrow' a 32K PET.

The College station is open every weekday lunchtime (1230-1400) using either G3HKR or G4RS/A as the callsign, and again on Tuesday and Thursday evenings. We usually have our AF gains open wide and the door open so that most of the College knows we are active! We believe firmly that the Apprentices here today are the RSARS of tomorrow and deserve all the support and your encouragement.

////////////////////

**MINUTES OF THE**  
**21st ANNUAL GENERAL MEETING**  
**OF THE**  
**ROYAL SIGNALS AMATEUR RADIO SOCIETY**

MINUTES OF THE 21st ANNUAL GENERAL MEETING  
OF THE  
ROYAL SIGNALS AMATEUR RADIO SOCIETY  
HELD AT NORTH HALL, CATTERICK GARRISON  
ON 3 JULY 1982

The meeting opened at 1510 hours.

PRESENT

Council

|                           |                            |       |
|---------------------------|----------------------------|-------|
| Chairman                  | Colonel N. Moss            |       |
| Treasurer                 | Mr. R. Walmsley            | G3IBB |
| Non-Serving Members Rep.  | Lt. Col. (Retd) D.A. Barry | G3ONU |
| Non-Serving Members Rep.  | Major (Retd) D. Haylock    | G3ADZ |
| Awards & Contests Manager | Major (Retd) R.A. Webb     | G3EKL |
| Station Manager           | Sgt. P. Walker             | G3DBY |
| General Secretary         | Capt. (Tfc) D.T. Llewellyn | G3TAN |
| In attendance:            | Mr. D.A. Ramsey            | G3UAA |

Members

| <u>RSARS No.</u> | <u>Callsign</u> | <u>RSARS No</u> | <u>Callsign</u> | <u>RSARS No</u> | <u>Callsign</u> |
|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| 1536             | G8OTU           | 1488            | G3XUG           | 1737            | G4JIO           |
| 1425             | G4FUT           | 1343            | G3HTB           | 1524            | GM4KTJ          |
| 1365             | GM3OPW          | 1716            | GM3LHV          | 0404            | DA2WN           |
| 1620             | DJØSS           | 0229            | G2HNL           | 0904            | G3AEF           |
| 0812             | GM3TBP          | 1600            | G4KNB           | 0004            | G3EJF           |
| 0120             | G3JZP           | 0806            | G4HIS           | 1853            | G4MUC           |
| 1800             | G4MQN           | 1640            | G4ISO           | 1424            | G3IGY           |
| 0016             | G3HCM           | 1412            | G4LSL           | 1736            | G3TPN           |
| 1616             | G3BPB           | 1381            | G4HVA           | 1671            | G4LPV           |
| 1721             | G4LOR           | 0454            | G3UAA           | 1483            | VK2DGS          |
| 0138             | G3NVK           | 0833            | G4CGT           | 0784            | G3VSD           |
| 1707             | G4FTY           | 1539            | G3BGM           | 1392            | G4ILD           |
| 0261             | G3WKM           | 1194            | G3BBD           | 1268            | G3CWW           |
| 1798             | G3TG            | 0362            | G3GEJ           | 0131            | G3FMW           |
| 1407             | BRS 41351       | 1414            | BRS 40686       | 0508            | G3PJB           |
| 1727             | NL              | 1594            | G4KIC           | 0343            | G3XSN           |
| 0136             | G3NXM           | 1274            | G4FKZ           | 0845            | G3JFE           |
| 0939             | G4AMX           | 1045            | G4FLL           | 1047            | G4ATD           |
| 0803             | G3NT            | 1390            | GM8UDM          | 1452            | G4MEU           |
| 1389             | G4EYP           | 1824            | BRS 42343       |                 |                 |

APOLOGIES were received from:

|               |                        |
|---------------|------------------------|
| The President | Brigadier G.R. Oehlers |
| G2EC          | G3YSK                  |
| G3DPS         | GW3ASW                 |

Members

|       |       |       |        |       |       |
|-------|-------|-------|--------|-------|-------|
| G3YSZ | VE3AX | N2DAN | G3KLX  | G4MCJ | G5YN  |
| G3GZG | G5BM  | G3IFF | G3OTU  | G4IVB | G3UTI |
| G4DBR | G2BQ  | G3FSN | VK2NLE |       |       |

### Opening

1. The General Secretary welcomed all present to the 21st Annual General Meeting and introduced the new Society Chairman, Colonel Noel Moss.

### Minutes of the 1981 Meeting

2. The minutes of the 1981 meeting were distributed in Mercury 7/81. The minutes were accepted. Proposed by G3WRY, seconded by G3XSN. Nil against. Unanimous.

### Financial Summary

3. The Financial Summary had been distributed to all present prior to the meeting. There was some discussion as to the ability of audit boards to check stocks when they were held at different locations. The Chair accepted that stocks could be widely dispersed. The Secretary assured the meeting that, if necessary stocks could be brought to the audit board or the audit board to the stocks.

### Expansion of the Awards Scheme

4. G3EKL explained how the scheme had expanded as the membership had grown. We had now reached a state of 'Supreme' awards and the question was where do we go from here? There was general agreement that we should not invent any kind of 'super supreme' award, but that we should review the awards situation annually,

### Council Reports

5. Report by the Chairman, Colonel N. Moss: -

"Ladies and Gentlemen,

In this 21st anniversary year of the Society, may I welcome you all to Catterick. I look forward to meeting many of you today and during the next eighteen months or so.

The RSARS Council has seen several changes in personalities in the past year, and more are on the way.

Colonel now Brigadier, Christopher Last handed over as Chairman in December and Major Ray Webb retired from the army earlier this year and handed over as General Secretary to Captain Dave Llewellyn, G3TAN. Later today, Alf Ramsey, G3UAA will take over as the Awards and Contests Manager from Ray Webb.

Immediately after the publication of the next MERCURY, Jack Cooper will retire as Editor and hand over to Dick Winters, G3NVK.

You will note that Ray has handed over two Council posts! It is a mark of the high esteem in which he is held throughout the Society, that I am delighted to announce that, by unanimous vote, Ray has been elected an Honorary Life Vice President of the Society. It is a fitting tribute to a dedicated Society member and I am certain that you will join me later in showing your appreciation.

Long service and cheerful dedication to the Society has been the hallmark of Jack Cooper, the Editor of MERCURY. For some 12 years, Jack, with valuable assistance from the 'OWL', has produced something for members to read and comment about. His editorial IN tray has often been almost on starvation rations, and sometimes support has been thin, but he has kept MERCURY going through the years, and we all owe him a vote of thanks. May I now welcome, on your behalf, Dick Winters, G3NVK, who has taken delivery of the 'OWL' and the electric typewriter, and who now becomes the Editor of MERCURY.

6. Report by the Contests and Awards Manager - G3EKL

"Mr. Chairman, Ladies and Gentlemen. I mentioned last year that the only contests of note were the 559/Le Touquet events and I regret to report exactly the same this year. Indeed the 21st Anniversary contest held on 23rd June produced equally disappointing activity with members sitting on the usual Society frequencies exchanging the necessary information within a net! Hardly a contest and all rather disappointing. Admittedly band conditions were against us but it seems that operating techniques could have been better. I have already received one letter niggling about the contest and



enquiring whether future 559 sessions will be run as controlled nets! Let me assure that member and any others who may feel like that, that the Society contests are not intended to be nets and never have been; it has been unfortunate that members, quite, sensibly, sit on or close to our nominated frequencies so as to be easily found but a net-contest? no never. During the last ten years various contests have been floated for Top Band, HF and VHF but most of them seem to be unwanted. Each new member receives details of all Awards and Contests, MERCURY carries advance warning of contests and I have varied contests to suit members when so requested. Yet still the support is disappointingly low so I can only assume that it is lack of interest amongst you all. A pity as the contest prizes are extremely attractive as those of you here today can see.

The Society again entered the RSGB Affiliated Societies contest last January under the well controlled whip of G4CJU, Gerry. Results were even better than previous years despite being heavily slashed by the RSGB. Our submission lost well over three hundred points and that placed us directly below the RNARS submission. This produced a letter of congratulations from G3JFF of RNARS thanking us for offering some respectable opposition and commiserating that RAFARS appear to be a ghost Society! I hope 1983 will produce an even better result.

The 'Best MERCURY Article' award for 1981 was a close run thing, G3BGM leading with his article 'Some Experiences with Special Signals', next and very close came 'Some Idle Thoughts on the old CW Lark'. Third was 'No longer a YL'. Other articles which interested members were: 'Arrested as a Spy', 'To what lengths do you go?', 'The Golden Microphone', 'Over the Hump', 'The G4EEC Mast', 'The Vertical Vee Antenna', 'A Ten Metre Beam (G4EHU)', 'A Ten Watt Linear for the HF Bands', 'CW Procedures and Techniques', 'Transmission Lines (Feeders)' and 'Radios and News Services'.

Awards Ladders. Excellent activity throughout the twelve months. All ladders have blossomed with thirty-three members entering for the first time and many members creeping steadily upwards. Four have attained the Europe Special Supreme and Europe AM Supreme awards during the year: G3NOB, G3DBU, G3MKR and G3NVK. That is ten awarded since the commencement of the awards scheme, whilst eleven members have claimed the Society WAC award, two of whom were Overseas operators. Les, VK2NLE, reached the Overseas AM 225 rung last April, and will very soon reach the top of that ladder. That will make him the first member ever to attain the Overseas AM Supreme.

The latest addition to the stable, '100 Overseas from Europe' award, announced in the last Mercury has already produced two claimants: No.1 G3UAA, and No.2 G3XSN. All good stuff and it is most gratifying to see this award interest and activity. If only it would spread to the contests!!

The Society nets in general have flourished throughout the year; the Eighty metre net becoming a daily affair varying in intensity as a direct ratio of the number of optics that can be seen by G3RKN, tempered occasionally by the amount of sherry quietly supped in the Eastbourne area!

With so much movement it is inevitable that there will be changes of emphasis, possibly new views and more or less attention may be directed towards certain aspects of our common hobby. Radio, computers and electronics hobbies are flowing and merging rapidly and we in the RSARS have many interests which we need to keep under review if we are to stay abreast of the improvements, and facilities available to us.

At the Society Headquarters we are attempting to provide more facilities and to attract recruits with a wide range of interests in communications based hobbies. In particular, we are keen to encourage youth, and we are actively involved in showing young soldiers who are in trade training what the society can offer in the way of hobbies which will do such a lot for them in their careers in the Corps.

We have re-established our links with the Apprentice College at Harrogate and I am pleased to see some of the young men from the College here today with you.

Major Mike Crane, with the Junior Leaders Regiment at Ouston, is running the Radio Hobby and is trying to shift the emphasis from simple CB to a broader based amateur radio view.

Staff Sergeant Kit Hall is opening up the hobby to our BAOR membership and his enthusiasm is catching on.

As you see, the Society continues to grow, and it must, surely, be to our long term interest to encourage our young members and to accept and operate in the allied fields of home computers, and electronics hobbies.

Financially we are healthy and have made an operating profit again this year. We find it difficult to reduce our stores prices, even though it might appear that we have a high profit margin. The costs of plaques and shields is continually rising, and engraving charges are now approaching levels which are discouraging. Postal charges have risen again recently, and it now costs the Society over £350 to post one edition of MERCURY.

During the past year 162 members have been registered and one member has resigned. Our Australian membership rises almost every month, thanks to the efforts of Les Symonds, VK2NLE, who unfortunately could not be with us today because of a sudden illness. We have increased our membership in South Africa, in Canada and in the United States.

In conclusion, may I thank local members of the Catterick Garrison Club, for the assistance recently in keeping the slow morse transmissions going, during the illness of Sergeant Paul Walker, G4DBY. These transmissions are reported on throughout Europe, and we are monitored by many North East of England stations on VHF. The slow morse service is an important and worthwhile activity and I am pleased to see members respond quickly to keep it going.

We have had a good year, and I look forward to the next 12 months, when I hope we will be offering more facilities, taking part in more events and broadening our base of activities.

In a more serious vein, thank you very much to all those who have helped to generate net activity be it on CW or phone, local or overseas. The Society members have two ways of keeping in touch - MERCURY, and the various nets. Without them we would probably shrivel away to almost nothing. Which is what I'm about to do. As you have heard already I'm handing over Awards and Contests Manager to Alf G3UAA after ten years in the seat. Thank you so much for your kind and interesting letters over the years. Please give Alf your maximum support I know he is keen to extend even further the various ladders and I'm sure a fresh hand at the helm can only do good. I nearly forgot, all claims for the 21st Anniversary certificate and also the 21st Anniversary contest to me please not to Alf. I'll process them altogether at the end of August. Certificates will be sent out in the first week of September.

73"

7. Report by the QSL Bureau Manager. G3YSK

"The past year has seen a considerable increase in QSL activity with the Bureau having handled over 10,000 cards. This increase is partly due to the successful recruitment and participation of the VE/W and VK/ZL members which in turn results in more UK activity. Thanks should be given to VE3AX and VK2NLE who are acting as QSL centres making the task easier.

Sufficient callsigns are registered in the diary as having sent cards to enable members to indicate a high level of awards are possible. The only black mark has been the increase in postal charges which have not readily been covered by additional stamps. A trend which is welcome is that many members are now sending envelopes and stamps separately thus enabling the Bureau to adjust for extra charges.

In order to ease the burden cards should always be sent in alpha/numerical order and SAEs showing the callsign in the top left hand corner."

8. Report from the Editor of MERCURY. G3DPS

"Mr. Chairman, Members of Council Ladies and Gentlemen. It has been many years since I had to write an apology for my absence from an Annual General Meeting but this year a combination of

personal and business reasons prevents me from being with you. This I regret very much as I understand from the Owl that at least a couple of Sydney-ites may be there among you and it is always a pleasure to meet representatives of our overseas membership at AGMs.

As members will already know, the forthcoming MERCURY will be the last I will edit, and I would like to take this opportunity of placing on record my sincere thanks for the help I have received from a multitude of friends, not only those who have written for the journal but those who have helped produce each edition, particularly those hard working members of the Reproduction Centres at the School of Signals and 8th Signal Regiment and all those people in the past who helped put MERCURY into envelopes, address same and get several hundred weights of paper to the Post Office. Also to such people as Major(QM) 'Shady' Lane at Blandford who always seemed to be able to pull the right strings for RSARS when needed. To the Curators, past and present, of the Royal Signals Museum who could rightly have said 'Not YOU again' when your editor appeared in their office door, but never did! To the various staff members of HQ including John Worth, Pete Dowdall, Les Thompson, Colin Harvey and many others who, at some time, finished with aching backs, tired feet and sore tongues after collating and despatching MERCURY. And last, but most certainly not least those members who have read MERCURY and commented so favourably on it. For fear of repercussions, I must not forget to mention the considerable help I have received from the Owl. He has his posting order and will be moving to a new editorial location very shortly.

Over the last year articles have continued to come in and all have made interesting reading. I thank all those who have taken the trouble to write same. I know that you will all support the next editor in the same way. Unfortunately, I have been very disappointed in the response to my request to members to show their appreciation for such authors and vote for the best MERCURY article. This year an even smaller number of members voted; 21 at the time of writing and this from a membership total around fifteen or sixteen hundred. However, there is a winner, by a short head, and your Awards Manager will doubtless announce the name of the lucky person a little later on.

In closing may I again say thank you to you all for your help, kind words and tolerance over the last 12 years or so. Please support your new editor in the same way that you have supported me. Best wishes. Jack Cooper. G3DPS"

9. Report from the Station Manager. G4RS HQ Station. G4DBY

" Mr Chairman, Ladies and Gentlemen. The HQ Station has now completely settled down in its present accommodation into which it had moved just prior to the last AGM. On the equipment side the TS 700 still remains the prime VHF station. To cater for the HF bands we operate with an FT101EE. The KW Linear has some minor faults which we are attempting to sort out, In addition we purchased a TRIO TS 520 earlier in the year anti this puts us on the new bands when they become available. The SWL facilities have already been updated with the acquisition of a second Racal RA17 from service sources, and the purchase of an FRG-7 .The listening facilities are now very god indeed at he station.

Our antennas include the HF quad and wire dipole for 80 metres. We will be putting up a 40 metres antenna shortly. The quad suffered wind damage during the gales in December, but it is now working well again.

During the past year efforts have been made to put the Headquarters callsigns G4RS, G3CIO and G3SIG on the air more often, and we have been quite successful at this. The use of the station and its facilities by members of the unit passing through on courses waxed and waned. We have a publicity campaign planned and we will be producing posters during the autumn and winter in order to attract young recruits who are passing through here.

The HQ station put demonstration stations on to support local venues such as the Richmond Meet and the Richmond Round Table, and our thanks go to our local operators for their help, particularly G4HVA, G4LSL and G4MKP. We will be supporting the Army Apprentice College at

Harrogate during their open day on July 31st. We were unable to make it to Alexandra Palace this year because of military commitments.

We assisted the local Brownies and Guides in their activity weekend in February, and we intend to support the Scouts with Jamboree on the Air (JOTA) later this year.

Future plans for the station include the addition of computing and RTTY equipment and the possible commencement of Satellite scanning, if we can get an expert to help us, and funds stretch far enough to purchase the equipment. Long range plans include amateur television.

Finally, thanks go to all of you who have helped G4RS to continue, and in particular G4HVA and G4LSL for their help on the slow morse service"

10. Other business. The following proposal had been discussed in Council and approved, subject to Council approval of prices and equipments which might be recommended. The proposal was circulated throughout the assembled members. There were no objections.

Proposal with reference to improvements in the Headquarters Station (G4RS) equipment

The Headquarters station, G4RS, offers only limited facilities on HF and VHF, Voice and CW. The station needs to broaden its base and to offer a wider scope of modern services. It is important that the Society HQ is seen and known to have an attractive, interesting and up to date station, which offers members and potential members state of the art facilities which embrace several different aspects of communications and electronics hobbies.

It is appreciated that not all the equipment required to provide all the services in the proposal can be purchased now. However, keeping the HQ Station up to date must be an ongoing function of the Society Management, and a similar proposal can and should be made each year for funds to continue such improvement as is considered necessary.

Our proposal is therefore as follows:

"That the funds be provided for the Society to purchase suitable modern equipment to provide facilities at the Headquarters Station, G4RS to operate in the following areas:

- a. Radio Teleprinter (RTTY)
- b. Computer and computing equipment
- c. Satellite and satellite tracking operations
- d. Amateur Television

and that priority be given to Radio Teleprinter and Computing this year"

PROPOSED BY:  
Member 0268

D.T. LLEWELLYN, G3TAN,

SECONDED BY:  
Member 0653

R. WALMSLEY, G3IBB,

11. G4KIC representing the Apprentice College at Harrogate Club Station, G3KHR, asked if funds might be available to update the College Club Station. The station was very action minded and operated on an almost daily basis. The chair complimented the station on its activity, but the General Secretary pointed out that our priorities had to start with G4RS and then be worked through in order. It was possible that funds might be available from other sources, and we would advise G4KIC on the procedure as it became clear.

12. DA2WN brought up the subject of recognition by the Corps as a whole for the amateur radio hobby. Commanding Officers did not seem to know much about us, and did not appear interested. The General Secretary replied saying that this had been an attitude we had tried to change for some time. He was in the process of formulating a general letter to COs in most areas. The Chairman noted the problem existed and would consider bringing the matter up at various meetings. We would discuss any letter being sent out and try to have it endorsed by our senior officers in the Corps. G3EKL pointed out the security aspects of the radio hobby, and how in the past this had

been a sticking point. With the advent of Citizens Band however, many people were on the air who would not normally be, albeit not from camp locations in many cases, and perhaps the climate might now be better. This subject would be taken up on behalf of the Society during the year.

13. G3NT passed on greetings to the Society from VE3QE, G3WKM asked that a vote of thanks be recorded for Council Members who were retiring in recognition of their work for the Society. Generally agreed and so recorded.

14. The following awards were presented by the Chairman: -

General Awards:

|           |        |              |
|-----------|--------|--------------|
| WAC No.11 | VK2NLE | Les Simons   |
| WAC No.12 | VK4XY  | George Down  |
| WAC No.13 | GM4LLD | George Petch |
| WAC No.14 | GSGH   | Chas Emary   |
| WAC No.15 | G4ICC  | Mike Gater   |

100 Overseas from Europe

|      |       |            |
|------|-------|------------|
| No.1 | G3UAA | Alf Ramsey |
| No.2 | G3XSN | Bert Donn  |

Europe AM Supreme

|       |              |
|-------|--------------|
| G3NVK | Dick Winters |
|-------|--------------|

Europe Special Supreme

|       |       |              |
|-------|-------|--------------|
| No.10 | G3NVK | Dick Winters |
|-------|-------|--------------|

Contest Awards:

|                                     |                |            |
|-------------------------------------|----------------|------------|
| 559 Trophy 1981/2                   | Overall winner | G3UAA      |
| Alf Ramsey                          |                |            |
| Fone Leader                         |                | G3NOB      |
| Shepherd                            |                | Rita       |
| Le Touquet 1981/2 and 559 CW Leader | G3UAA          | Alf Ramsey |
| Best Mercury Article 1981           |                |            |
| G3BGM                               | Don Sheriff    |            |
| QRP Annual award                    |                |            |
|                                     | G4MOS/VK3DRK   | Rob Lake   |
| GW2OP Trophy                        |                |            |
|                                     | G3EKL          | Ray Webb.  |

15. Honorary Life Vice President of the Society: G3EKL

At the end of the awards ceremony the Chairman announced that Ray Webb G3EKL, had been unanimously elected as an Honorary Life Vice President of the Society. The meeting was delighted. Ray spoke in reply.

"I am most honoured and deeply grateful to members of Council who have considered me suitable for the appointment as a Life Honorary Vice President of the Society. Since handing over General Secretary I have received many letters from members wishing me well in my retirement all of which gave me great pleasure. Today's appointment has really topped it all and I feel most humble. Thank you all very much"

There being no further business the meeting was closed at 1610. The raffle was held and all members who donated prizes are most warmly thanked.

The accounts summary is attached.  
T. Llewellyn, G3TAN, Secretary.

D.

CASH RESUME OF RSARS FOR PERIOD 1ST APRIL 1981 TO 31ST MARCH 1982

CASH FLOW

| <u>EXPENDITURE</u>                |                 | <u>INCOME</u>                |                 |
|-----------------------------------|-----------------|------------------------------|-----------------|
|                                   | £               |                              | £               |
| HQ Maintenance                    | 266.15          | Bldg <del>Soc</del> Interest | 305.73          |
| Awards                            | 259.61          | Subscriptions                | 1699.50         |
| Mercury Postage                   | 858.99          | Donations                    | 157.62          |
| Property Depreciation             | 212.15          | Stock Profit                 | 621.37          |
| Society Postage                   | 165.28          | Special Events               | 1.00            |
|                                   |                 | Property Donations           | 69.00           |
| Total Expenditure                 | 1762.18         | Corps Grant                  | 350.00          |
| Excess of Income over Expenditure | 1442.04         |                              |                 |
|                                   | <u>£3204.22</u> | Total Income                 | <u>£3204.22</u> |
| <u>STOCK/PROPERTY</u>             |                 | <u>CASH</u>                  |                 |
|                                   |                 | At Bank                      | 593.70          |
| Society Stores (at cost)          | 1660.09         | Bldg <del>Soc</del>          | 4222.05         |
| Society Property                  | 2589.00         | Sundry Debtor                | 2.00            |
|                                   |                 |                              |                 |
| Total Assets                      | <u>£9066.84</u> |                              | <u>£4817.75</u> |

AUDITORS COMMENTS

1. The comments of the previous board were noted, there were no recommendations.
2. The board was unable to check the stock account. A Certificate of stock held was produced which confirmed the entry in AB 397. The control and accounting for stock could only be verified by RV and PV and payments to the account.  
The stock and stock account is maintained by a society member living in Harrogate, to enable the account to be audited satisfactorily, it is recommended that this account be run and maintained in accordance with the society rules paragraph 15, sub-paragraph e.
3. The profit margin of 61.4% would at a glance appear excessive, however, this profit was achieved by the sale of old equipment which is necessary if the society requires to purchase new equipment and avoid having to get financial support elsewhere.
4. Although the account appears small, a considerable number of complicated transactions take place. The account holder is to be congratulated on a well kept account.

CHAIRMAN'S REMARKS

1. Stock. Stock must be checked by the audit board. The onus must be on the account holder to arrange this at Catterick.
2. Profit. Proceeds from the sale of old equipment are not "profit" in the accepted sense of the word. In future they are to be credited direct to GPF and not treated as part of the trading account.
3. Expense Items. The complexity of the account will be reduced if all minor items bought by the Society are written off immediately after purchase. An inventory of these items is to be kept in the Non Valued part of the Property Book which is also to show a record of all items issued or donated.

N. MOSS  
Colonel  
Chairman

## ROYAL SIGNALS AMATEUR RADIO SOCIETY

### MEMBERS SUPPLIES

(For prices please see reverse)

MEMBERSHIP LIST - Showing all members call-signs. FREE for large SAE - 100 gramme Postage rate.

AWARDS & CONTESTS RULES - Containing details of all RSARS Awards, Trophies and Contests etc. FREE for SAE - 100 gramme postage rate.

HEADED NOTEPAPER - Notepaper headed "ROYAL SIGNALS AMATEUR RADIO SOCIETY" in blue with space for call-sign, RSARS Number etc.

BASIC QSL CARDS - Standard postcard size, two varieties, HORIZONTAL or VERTICAL. Both are printed blue on white card, the printing allows for:-

- i) A SWL report
- ii) Acknowledgement for a SWL report
- iii) A QSL for a contact on CW, AM, SSB, FM, RTTY or SLOW-SCAN.

a. HORIZONTAL - On one side - a figure of "MERCURY" on the left, the remaining 2/3rds carrying QSL information. Reverse side is blank.

b. VERTICAL - a figure of "MERCURY" and the wording "MEMBER STATION" and "ROYAL SIGNALS AMATEUR RADIO SOCIETY" on the front and the QSL information on the reverse.

PLAIN BADGES - Standard "Diamond" shaped badges in Light Blue, Dark Blue and Green enamel, with "RSARS" lettering across the centre.

CALLSIGN LAPEL BADGES - As above but with lapel pin and containing scroll which can take members call-sign, RSARS Number, etc. Maximum of 6 letters/figures/spaces.

RSARS TIES - A crimplene/terylene tie in Dark Blue or Green or Wine. A quality tie produced by a leading manufacturer. Alternate angular rows of figure of Mercury and RSARS "Diamond".

RSARS LOG BOOKS - 40 Pages, 1,000 entries, with all normal columns plus an extra unnumbered/unheaded column for recording RSARS Number, WAB Area, DOK etc., etc.

RSARS DYMO BADGES - Pin fixing, double or single row white plastic frames, allowing fixing of Dymo Tape with 16 letters/figures/spaces per row. Tape available in a variety of colours. Can be printed for XYL, YL, JUNIOR Op., etc.

WINDSCREEN STICKERS - Adhesive clear backing carries RSARS diamond in Light Blue, Dark Blue and Green with "RSARS" across centre.

OVERPRINTED QSLs - These are either of the Basic QSLs overprinted in Red, Blue, Black or Green. Overprint shows member's RSARS number, Call-sign (or BRS Number, etc.) Name and Address. Minimum order quantity - 500.

GREAT CIRCLE BEARING AND DISTANCE CHART - These Charts are computer produced and are based on a members EXACT QTH. Members must supply the Latitude and Longitude of their QTH ( in Degrees and Minutes only - NOT MAP REFERENCES). Charts are then produced showing the Town/City name, Country, name, Latitude. Also the bearing distance from members QTH in Nautical miles, and Kilometres. Also the bearing (with respect to True North) from the members QTH to the distant QTH and vice-versa. There are over 1,800 locations on the Chart.

STORES DELIVERY - Delivery is by return except for overprinted QSL cards and call-sign lapel badges, which take two to three months for completion and the Great Circle Bearing and Distance Chart which takes about a fortnight.

RSARS STORES PRICE LIST - Effective 1 JANUARY 82

|      |                                                                          | <u>Price</u> | <u>UK/BFPO<br/>Postage<br/>&amp; Packing</u> | <u>Price<br/>+<br/>P &amp; P</u> |
|------|--------------------------------------------------------------------------|--------------|----------------------------------------------|----------------------------------|
|      |                                                                          | £ p          | £ p                                          | £ p                              |
| 100  | Sheets of Headed Notepaper                                               | 1 50         | 70                                           | 2 20                             |
| 500  | Sheets of Headed Notepaper                                               | 5 00         | 1 80                                         | 6 80                             |
| 100  | Index Cards                                                              | 50           | 70                                           | 1 20                             |
| 250  | Index Cards                                                              | 1 20         | 1 40                                         | 2 60                             |
| 500  | Index Cards                                                              | 2 50         | 1 80                                         | 4 30                             |
| 1000 | Index Cards                                                              | 4 50         | 2 10                                         | 6 60                             |
| 100  | Basic QSL cards                                                          | 1 30         | 70                                           | 2 00                             |
| 250  | Basic QSL cards                                                          | 2 75         | 1 25                                         | 4 00                             |
| 500  | Basic QSL cards                                                          | 5 20         | 1 80                                         | 7 00                             |
| 1000 | Basic QSL cards                                                          | 8 90         | 2 10                                         | 11 00                            |
| 500  | Overprinted QSL cards                                                    | 9 20         | 1 80                                         | 11 00                            |
| 1000 | Overprinted QSL cards                                                    | 14 90        | 2 10                                         | 17 00                            |
| 1    | Flat RSARS Badge (enamelled)                                             | 65           | 25                                           | 90                               |
| 1    | Call-sign Lapel Badge Blank<br>(Enamelled with pin on reverse)           | 1 00         | 25                                           | 1 25                             |
| 1    | Call-sign Lapel Badge - with Callsign<br>(Enamelled with pin on reverse) | 1 75         | 25                                           | 2 00                             |
| 1    | RSARS Tie                                                                | 3 25         | 25                                           | 3 50                             |
| 1    | RSARS Station Log Book                                                   | 60           | 25                                           | 85                               |
| 3    | RSARS Station Log Books                                                  | 1 65         | 70                                           | 2 35                             |
| 5    | RSARS Station Log Books                                                  | 2 60         | 90                                           | 3 50                             |
| 1    | RSARS Mobile (Pocket size) Log Book                                      | 40           | 25                                           | 65                               |
| 3    | RSARS Mobile (Pocket size) Log Books                                     | 1 00         | 70                                           | 1 70                             |
| 5    | RSARS Mobile (Pocket size) Log Books                                     | 1 60         | 90                                           | 2 45                             |
| 1    | RSARS <del>Dymo</del> Badge (1 Row)                                      | 25           | 25                                           | 50                               |
| 1    | RSARS <del>Dymo</del> Badge (2 Row)                                      | 40           | 25                                           | 65                               |
| 1    | RSARS Windscreen Sticker                                                 | 35           | 25                                           | 60                               |
| 2    | RSARS Windscreen Stickers                                                | 60           | 25                                           | 85                               |
|      | Great Circle Bearing/Distance Chart                                      | 1 50         | 1 00                                         | 2 50                             |

AWARDS AND CONTEST RULES - FREE ) Please send SAE

MEMBERSHIP CALL-SIGN LIST - FREE ) 12" x 8" stamped

@ 100 gramme rate

NB. POSTAL RATES ARE NOT OVERSEAS RATES

- - - - -



"SIGNALS NETS" or Where you might find them!

ALL TIMES are UK CLOCK TIMES except the Overseas Nets which are in GMT.

ALL FREQUENCIES are PLUS or MINUS the QRG shown - search boldly and carefully!

L.F. NETS - SSB

|          |      |                  |                                              |
|----------|------|------------------|----------------------------------------------|
| SUNDAY   | 1100 | 3720 or 7075 kHz | Controlled Natter Net.                       |
| MONDAY   | 1300 | 7075 or 3740 kHz | Natter Group for approximately 15-30 minutes |
| TUESDAY  | 1900 | 3740 kHz         | CONTROLLED NET                               |
| THURSDAY | 1900 | 3740 kHz         | CONTROLLED NET                               |
| SATURDAY | 1100 | 7075 or 3720kHz  | CONTROLLED NET.                              |

L.F. NETS - CW

|           |      |                               |                                                                                        |
|-----------|------|-------------------------------|----------------------------------------------------------------------------------------|
| SUNDAY    | 1000 | 3565 or 3526 kHz              | European natter net                                                                    |
| WEDNESDAY | 1930 | Prim 3565 kHz<br>Sec 3526 kHz | CONTROLLED NET: Net terminates at 2115<br>exactly and re-opens at<br>2200 on TOP BAND. |
|           | 2200 | Prim 1823 kHz                 | This net is again CONTROLLED.                                                          |

HIGH FREQUENCY NETS

|       |                  |                      |                                                                                                                      |
|-------|------------------|----------------------|----------------------------------------------------------------------------------------------------------------------|
| DAILY | 1230<br>1500 GMT | 21170 kHz ±<br>21290 | Though primarily a CONTROLLED NET the UK<br>controller usually requires an overseas station to<br>assume co-control. |
|-------|------------------|----------------------|----------------------------------------------------------------------------------------------------------------------|

When conditions permit, members are encouraged to use the following HIGH FREQUENCIES in addition to those above:

10113, 14065, 14175 21130, 21175, 28065 and 28450 kHz.

OTHER FREQUENCIES AND MODES

RTTY 3590 & 14090 kHz. Use 170 Hz shift and 45.5 Bauds.

SLOW SCAN Please notify activity to Headquarters for publication.

VHF FREQUENCIES

RSARS SPOT CHANNELS are Please notify locally arranged nets for  
70.22 and 144.22 MHz Mercury publication.

In E Midlands please listen S14 (145.35 MHz) each Wednesday 2000 Hrs

ACTIVITY SUNDAY

"Activity Sunday", is the Sunday of the second full weekend in every month. Please make an extra effort to contact our Overseas members - use listed frequencies and call on the hour when propagation is suitable.

SLOW MORSE TRANSMISSIONS - From G4RS each Tuesday and Thursday evening at 1900 Clock time on 3565 and 144.525 MHz (S21) omnidirectional.

-----  
All modes : Call 'CQ RSARS' or 'CQ ROYAL SIGNALS AMATEUR RADIO SOCIETY'. During a QSO sign 'G1ABC de G1DEF BT BOTH RSARS K' or 'ONØNO de G1GHL BT RSARS K'. DO NOT join 'RSARS' to your call-sign in any way (i.e. G1JKL/RSARS). as in Great Britain this is illegal under Home Office Regulations.

Do not wait for the above nets to form - find the nearest clear frequency and call 'CQ RSARS'. Please do not call CQ on the CW LF controlled nets as there is always a control station around to bring you in. Always book IN and OUT of controlled nets. Pass all details for awards and contests unassisted.