MERCURY

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NOVEMBER 1978

A MERRY XMAS

ALTHOUGH, PERHAPS A LITTLE EARLY, THE PRESIDENT, VICE-PRESIDENT AND ALL MEMBERS OF COUNCIL WOULD LIKE TO TAKE THIS OPPORTUNITY OF PASSING ON TO ALL MEMBERS, THEIR FAMILIES AND FRIENDS BEST WISHES FOR THE COMING FESTIVE SEASON AND TO WISH ALL A HEALTHY AND HAPPY 1979.

EDITORIAL

With darkness falling earlier each day and the prospects of colder days ahead, most members will be concentrating their spare time on the air, or at least in the shack. Generally speaking, the thoughts of such things as antenna, tower or mast maintenance, if not already done, will be forgotten until the Spring. BUT - is your antenna installation safe?. Is it liable to fall on your property, or worse still, on someone else's, if we experience severe gales during the coming winter? Even inside the shack is your rig, installation, wiring, etc., safe enough to permit visitors. Even if you feel happy about YOUR particular position have you ever considered that ACCIDENTS CAN HAPPEN. And wouldn't you now feel happier if you were insured?. A number of Companies offer reasonable insurance terms on amateur radio equipment and fittings. Although we think, and certainly hope, that such a requirement is unnecessary in our case, it is worth considering. A legal claim for personal injury or property damage can be extremely costly.

Needless to say, I have no connection whatsoever with any insurance company but the thought was prompted by listening to a QSO on 20 where a corroded element of a 3-Element beam came adrift in a strong wind and crashed through a glass roof causing some injury to a neighbour thereunder. The worry was at what level would the neighbour's attorney set the damages claim!.

To the page heading above, may I add my own personal wishes for a happy Christmas and a successful New Year adding, perhaps, and a satisfactory WARC!. Keep those items for "Mercury" rolling in during 1979.

JACK COOPER
G3DPS
RSARS 090

KEY-TRONICS - PART III.

G3IBB/0653.

READABILITY-STRENGTH-TONE.

How many of us, with our hands over our heart, can honestly claim to give a considered report? When did YOU last refer to the R-S-T Code before pronouncing judgement on a signal? Indeed, check your log and see if you have EVEN given other than "T9"….. Granted, a lot of the tone reports listed have little bearing on todays signals, but we must make the best of what we have. A "T8" report will at least alert an operator to the fact that something is wrong. It's amazing how grateful most are to get an honest report.

If you tune a signal in "on the nose" (putting it in the middle of the receiver passband) it may sound T9X using modern selective receivers. But have a listen "around the edges"; i.e. tune the signal to one side and then the other of the passband. You may find it will sound like a buzz-saw. Several of the newer models of the FT-101 have had this problem, invariably caused by connections not being made during manufacture. Once the unfortunate operator knows about the problem, the fault is easily detected and corrected to give the more usual T9X associated with this rig.

Dare I mention "Readability"? It appears that "R4" has taken on the meaning "an odd character readable now and then". If poor readability is not due to band conditions or your own inability to say "QRS", it is generally due to the poor quality of the other fellows sending. Would you dare imply by your report that his code is so bad as to be almost unreadable? Perhaps you wouldn't be popular, but at least you'd be honest..... This aspect of reporting has to be considered rather carefully - maybe the operator is physically handicapped and can't improve his sending. But more often it is a question of ignorance due to never being told.

Make a conscious effort to give all honest report. Unless you're sure, don't base your report on the two or three call-signs preceding a QSO; wait until you've heard an "over". Listen for, and report on, clicks, chirp, drift, and last, but not least, keying characteristics. (One used to hear the suffixes "C" for chirp, "K" for clicks and "D" for drift on CW reports, but, alas, they are now the exception - Ed.). For instance, a poorly adjusted mechanical bug will invariably suffer from contact bounce on the dot side. It is not uncommon to hear the same key transmitting one frequency for dots, and another for dashes; enough to make you demented by the end of the QSO!. A mal-adjusted el-bug may obviously clip or slur - report it.

NETTING

The majority of transceivers have been designed primarily for SSB. If a distant signal is tuned in correctly with the IRT (Clarifier) off the operator can be pretty sure that he is correctly netted in this mode. However, when switching to CW it is usual to transmit carrier by switching the carrier frequency into the passband of the transmit filter, resulting in a change of frequency of some 800 Hz or so. A few transceivers with narrow CW filters arrange it that if you can hear a signal in the passband of the filter, you're automatically netted (when the IRT is off). More often than not it is left to the operator to decide for himself where to net.

If you're not sure, the next time you contact a station using "separates" ask the operator to net exactly on to your frequency. Then, leaving the main tuning control of your transceiver alone, zero beat his signal using your IRT. Put a mark on your IRT control for future reference, then use it to obtain a comfortable pitch. THE MAIN TUNING CONTROL SHOULD NOT BE CHANGED. The next time you want to exactly net on to a signal, put the IRT to this mark and zero-beat using the main tuning control. Then, using the IRT, adjust the pitch as before.

The next time you work a station which is not properly netted to you, why not offer the "helping hand of Amateur Radio" and pass on the advice offered here!.

THE FIRST-CLASS CW OPERATORS CLUB

Founded in 1938, the FOC has a world-wide membership of 500. The reason for this (often criticised) limitation in numbers is to make it manageable for the Secretary to administer. Members

KEY-TRONICS - PART III. - Contd.

receive a regular monthly news-sheet and every effort is made to ensure a fully active membership. The stated aim of the club is "to foster and encourage a high standard of operating ability and behaviour on the amateur bands..."

Entry into the club is by sponsorship. A prospective member must be sponsored by five members, each worked on at least two bands and from at least two Continents. Members must be capable of operating at speeds of not less than 25 wpm. Operating frequencies are generally about 25 KHz up from the bottom end of each band. One of the club highlights is the Annual Dinner, when the Lords Cricket Ground Banqueting Suite is taken over for the first week-end in October.

A SIDE-TONE OSCILLATOR/SOLID STATE KEYING CIRCUIT.

The circuit shown below uses an NE555 timer as an audio oscillator with variable pitch. A feature of the circuit is that the frequency will not alter as the volume is changed. This is achieved by buffering the timer output at pin 3 by a simple transistor stage (TR1).

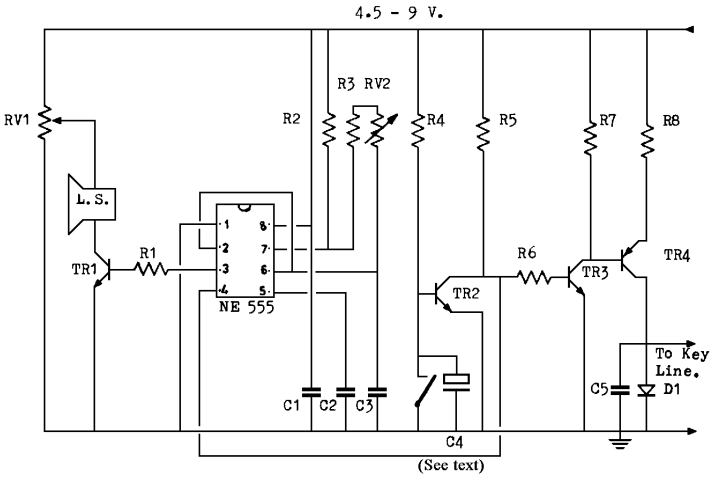
Transistor TR4 is able to key transmitters employing grid-block keying, such as the FT-101, Drake Line, etc. If relay keying is preferred, TR3 and TR4 can be omitted and a suitable relay can replace R7 in the collector of TR3. Supply voltage is not critical; any voltage between 4·5V and 9v is satisfactory. A small 6·5V filament transformer, a bridge rectifier and a 100 µfd capacitor will suffice.

Capacitor C4 can be chosen according to need. If an el-bug is used it may be omitted. When using a mechanical bug-key a value of about 2·2 µfd to 4·7 µfd will cut down a lot of the contact bounce effects associated with these keys. However, too high a value will give an objectionable 'tail' to the code. Before soldering this component on the board a few values can be tried across the key itself. A nominal value when using a hand key is 2·2 µfd.

Space does not allow a Vero-board layout to be included here, but one is available via the General Secretary for those who would care to send a stamped address envelope.

Components List.

RV1	1 Kohm Linear (Volume)	C1, C3	0·1 µfd (RS 113-904)
RV2	10 Kohms Linear (Pitch)	C2, C5	0·001 µfd (RS 113-875)
R1, R7	4·7 Kohms	C4	2·2µfd Tant. (RS 101-787)
R2, R4	10 Kohms	D1	1N4003 or 1N4004
R3, R5	2·2 Kohms		(RS 261-160 or 261-176)
R6	22 Kohms	TR1, TR2, TR3	BC 109
R8	470 Ohms	TR4	BSV 68
NE555	Timer	L.S.	2·5" 35 Ohms Loudspeaker
			(RS 248-527 or similar)



SILENT KEYS

It is with regret that we have to inform members of the passing of the following members of R.S.A.R.S.

From the son-in-law we hear of the death of G4LO, George W. Fish. George had been a member of the Society for some years and will be sadly missed by a large number of friends and acquaintances

Mrs Anne Gordon, XYL of GM3NXA kindly wrote to HQ telling of the passing of her husband Peter. 'NXA died on July 22nd after an illness which necessitated the removal of a lung and, although some recovery was apparent, Peter was the victim of a heart attack from which he did not have the strength to recover. Peter enjoyed amateur radio and will leave a gap in the ranks.

W.E. Longmire, G3TKL died on 4th July aged 83. Further details are not known at Headquarters but a full obituary appeared in the September issue of RadCom.

Several members have written regarding the passing of Jimmy, 9M2DQ, including a letter from Daisy, '2DQ's XYL. Jimmy died of Myocardial Infraction at Penang Medical Centre on 1st July after three heart attacks in a week. Stan, G3VSA ex-VS2DJ writes "May I, at least mourn the death of an old friend whom I have not seen since 1952 when I met him on the Estate in Kedah whilst serving with the Army during the "Emergency". I, and my friends, were entertained right royally with the hospitality of an old Colonial Settler. We will, I am sure, never forget it. I ran into Jimmy on the 20 Metres DX Net some three years ago and his first question was "Where the hell have you been the last 20-odd years?!!!" - so typical of the man. His passing represents a sad loss to the Society, and to Amateur Radio in general throughout the world. Particularly the Malayan Society which I know he supported most staunchly". (Editors note: Although I never had the pleasure of meeting Jimmy whilst serving in Malaya (he was in the UK during the only time I visited Penang), we QSO'd many times and he was one of the most helpful characters I think I ever met. His one regret was that he never succeeded in getting me to learn Malay.).

From information received at HQ it would appear that the recent obituaries recently published in relation to RSARS member GW4ELI may be the result of a hoax. Members should "proceed with caution" until the situation is clarified.

P 1954 RESULTS.

A record number of entries for the last problem and all who took part are to be congratulated. The three winners (as picked 'out of the hat" by RSARS 0651 to whom all complaints should be sent!) are :

Alan Croft, RSARS 0153, 244 Crystal Palace Road., East Dulwich, LONDON, SE22 9JQ.

Bernard J. Williams, G3JFA/1232, 6 Westland View, Stifford Clays, Greys, Essex.

Chas. Barlow, G3XTL/0334, 6 Fellwilson Street, Warsop, Mansfield, Notts., NG20 0PT.

Results showed that a lot of work had been put into the problem and included alphabetic cryptographic analysis, the fact that one member had just brought a 7B, and just plain "try everything" techniques. The answer was to be obtained by "moving" one place to the left on a typewriter keyboard. Just to make it a little more difficult there was a missing 'e' in the text, but just about everyone noticed that!. Winners will doubtless be hearing from HQ in the not too distant future. Well done!

A TRIP TO MARS.

By : EXBRS10593.

(No, "Mercury" has not become a participant in the Space-Race, the "MARS" in question being a communications system rather than the Red Planet!. We are indebted to The Commander, US Army Communications Command, Fort Huachuca, Arizona, 85613, U.S.A. for granting permission to reprint the following article which is based on details contained in the unclassified US Army Technical Manual TM 11 - 490 - 7, US ARMY MILITARY AFFILIATE RADIO SYSTEM (MARS) COMMUNICATION PRACTICES AND PROCEDURES. - Editor).

A while ago a group of stations on 80 Metres were heard to remark about "those MARS stations passing phone-patch traffic on 20". Wrong!, because, as we will see later, MARS call-signs/stations cannot operate on Amateur frequencies. What the group had heard, of course, were US licensed amateur stations operating phone-patch traffic in accordance with the terms of their Amateur Radio licenses.

True, a few moments earlier the same operator and the same equipment may well have been operating on a MARS frequency using a MARS call-sign, in fact, there is a close connection between MARS and Amateur operation. But to get more detail it is necessary to refer to the US Army Technical Manual TM 11- 490 - 7 which deals with the MARS System. So let's turn the pages of this document and see what comes to light.

Chapter 2, headed MISSION, POLICY AND HISTORY tells us that the Army Military Affiliate Radio System (MARS) is a program sponsored by the Department of the Army in which military installation, military unit/clubs and volunteer licensed US Amateur radio stations and operators participate and contribute to the mission of providing auxiliary and emergency communications on a local, national and international basis as an adjunct to normal Department of the Army communications.

The Military Amateur Radio System (Note the original title - Ed.) was established on 26 November 1948, by authority of the secretaries of the Army and the Air Force. It was renamed the Military Affiliate Radio System (MARS) on 2 September 1956, to more accurately describe its nature. On 17 August 1962, the Secretary of the Navy approved the Chief of Naval Operations recommendation to organize a Navy Marine Corps MARS program to be implemented on 1 January 1963. On 3 August 1970, Department of Defence Directive 4650.2 formalized the policies, responsibilities, composition, mission, functions, organization and support of both the Military Affiliate Radio System (MARS) and Civil Amateur Radio activities within the Department of Defence.

MARS operates on a joint service basis for determination of overall policy, practices and procedures. Operational control and direction is exercised by the Commander, United States Army Communications Command, Department of the Army, Commander, Naval Telecommunications Command, Department of the Navy, and the Director, Command Control and Communications, Department of the Air Force.

The Department of the Army policy is to support, encourage and co-operate in the development and promotion of MARS and Amateur Radio activities to enhance their military and civil value; to avoid within limitations imposed by military exigencies, action which would tend to jeopardize the independent prerogatives of the individual Amateur Radio operator and maintain liaison with the Departments of the Navy and the Air Force, recognized US Amateur Radio organizations, and the Federal Communications Commission on matters concerning the MARS program.

Chapter 2, para. 2-3(d) states, perhaps, the most important aspect of any communication system : RELIABILITY, SECURITY AND SPEED ARE THE THREE FUNDAMENTAL REQUIREMENTS OF ARMY MARS COMMUNICATIONS. RELIABILITY IS ALWAYS PARAMOUNT AND MUST NEVER BE SACRIFICED TO ACHIEVE SECURITY AND SPEED.

A TRIP TO MARS - Contd.

Under the sub-para headed "Mission" we learn that the mission of Army MARS is to 1) Provide Department of Defence sponsored emergency unclassified communications on a local, national and international basis as an adjunct to normal communications, 2) Provide auxiliary communications for military, civil and/or disaster officials (during periods of emergency. 3) Assist in effecting communications under emergency conditions. 4) create interest and furnish a means of training members in military communications procedures. 5) provide a potential reserve of trained radio communications personnel for military service when needed by promoting the study and experimentation in radio communications and electronics. 6) handle morale and other authorized record and voice communications traffic for US Armed Forces and authorized US Government civilian personnel stationed throughout the world.

Chapter 4 deals with membership of MARS and. contrary to popular belief that only serving members of the US Army Signal Corps (or their Naval or Air Force equivalents) are eligible, we see that membership is limited to : 1) Individuals 14 years of age or older. 2) Military installation stations operated and maintained by military personnel under the auspices of a military command. 3) Individual stations operated by military or civilian operators who possess a radio station capable of operating on MARS frequencies and are licensed amateur radio operators, 4) Military unit or civilian radio club possessing a valid Amateur Radio station license issued by the FCC or appropriate overseas commander. 5) individuals who are citizens of the United States or have been lawfully admitted to the United States for permanent residence under the provision of chapter 12 of title 8. United States Code and hold a valid FCC license. 6) Individuals who agree to operate in accordance with the regulations prescribed for participation in the Army MARS program. 7) Individuals who are not a member of Navy-Marine Corps or Air Force MARS. 8) Personnel who have over 5 months remaining to serve in an overseas area.

The period of membership of MARS is determined by the run-out date of the members Amateur Radio license. No license - no membership. Non-serving members of MARS who enlist are eligible to receive a certificate attesting to their membership of MARS which will be accepted by interviewing personnel at enlistment centres and will be considered in determining assignment in the military service.

Membership of MARS can be cancelled by the Chief, Army MARS at any time for such reasons as wilful failure to abide by the rules and regulations governing MARS, failure to maintain, without sufficient reason, a minimum of 12 hours of creditable participation each calendar year quarter, and on revocation or expiration of the member's radio license issued by the FCC, although cancellation is not limited to any of the above points.

Training is dealt with under chapter 5 and the following information is listed under "Training Objectives". MARS Directors will establish training programs, training networks and networks of stations within their areas. MARS members will be expected to participate in Army emergency communications exercises and tests to aid in the development and improvement of MARS emergency radio communications networks. MARS Directors will aid and encourage MARS members to improve their operational and technical abilities in military electronic communications through on-the-air training periods, enrolment in extension courses at the US Army Signal School, Fort Gordon, Georgia 30905, and by dissemination of operational and technical information and data. Experiments with electronic equipment will be encouraged. Every effort will be made by the Chief, Army MARS to provide for experimental purposes, excess communications-electronics equipment and materials. Experimental aspects of MARS will be further encouraged by MARS Directors, where practicable, by means of new equipment demonstrations, lectures by authorities in electronic fields and tours of unclassified activities at Army laboratories and installations. In order to provide continuity in the MARS Training Program all Army Military Installation station operators will be encouraged to obtain an Amateur license after being assigned such duties.

A TRIP TO MARS - Contd.

Chapter 6 deals with MARS call-signs, and here we see a connection with the Amateur Radio world. Within the United States call-signs are changed as follows :- (USA FCC Amateur prefix first. US Army MARS call prefix second)

Within the United States.

USA FCC Amateur Prefix	US Army MARS call Prefix.
W and WN	AAM
K and KN	ABM
WA	ACM
WB	ADM
WD	AEM
WR and Special Purposes use	ALM
KH and WH (Hawaii)	AB6
KL and WL (Alaska)	AB7
KP (Puerto Rico and Virgin Is.)	AE6
KZ (Panama Canal)	AE5
KZ (Caribbean)	AE5
KZ (Antilles)	AE6

The prefix letter 'N' in Novice call-signs is disregarded, but the call prefix ALM may be used for Novices to prevent duplication.

Outside the United States.

Country or Area.	Amateur prefix.	Army MARS prefix.
Alaska	KL7	AB7
Aleutians	KL7	AB7
Canal Zone	KZ5	AE5
Germany (US Zone)	DL	AE1
Greece	SV, SV0	
Hawaiian Islands	KH6	AB6
Iran	EP	
Italy	I	
Japan	JA	AB1
Korea	HM, HL9	AB4
Okinawa	KR6	AB2
Philippine Islands	DU	AB3
Taiwan	BV	AB1
Thailand	HS	AB9
Vietnam	3W8	AB8

Other notes in this chapter state that the Portable suffix will not be used with MARS call-signs and that visitors to a MARS station must use the visited stations' call-sign. Sub-para 'g' tells us that MARS call-signs WILL NOT be used on the amateur bands.

Chapter 8 deals with Logistics, and in particular, the issue to MARS stations of excess and surplus communications-electronics equipment. It goes on to say that "..... (this issue) to MARS members and stations is considered an incentive to active participation in the Army MARS program".

Subsequent chapters deal with Procedures, Log Keeping, Traffic Handling, Authentication, Message Drafting. etc.

There are 11 Appendices to this Manual dealing with a number of items. Appendix 'B' deals with MARS Supply Procedures and some of the more interesting paragraphs reproduced below.

A TRIP TO MARS - Contd.

MARS issued property may not be used or disposed of in any manner for personal financial gain or advantage. Additionally, no claim by a MARS member for reimbursement of time, materials, or funds expended on MARS issued property will be honoured by the US Army.

No high powered radio transmitters above 10 kW and related power supplies, complex control panels and consoles, computers, space control and satellite equipment or other large, expensive sophisticated equipment will be transferred into MARS for the purpose of cannibalizing the items for parts.

Excess property may be used in various ways by recipients. Based upon its condition, equipment may be: used as originally intended, modified to improve its operational capabilities, modified to the extent that it can be used other than originally intended, cannibalized for parts to repair a like item or to repair and construct different items, used in whole or in part for experimental purposes. ..... Generators designed to provide electrical power may be loaned on a one-time basis to other individuals or stations to enhance training programs simulating emergency conditions or during actual emergency conditions.

Excess and surplus property will be distributed to MARS members and stations based upon existing needs of the individual member or station. Such excess property may be issued on a loan basis, or transferred, and dropped from accountability.

Appendix 'D' deals with the ARRL numbered radiograms. These vary from "1" = "All safe. Do not be concerned about disaster reports. Coming home as soon as possible" through "31" = Heartiest congratulations on your wedding anniversary", and "58" = "Wishing you a Very Merry Christmas and a Happy New Year", to "99" = "Please arrange transport to meet me".

The above has been a brief resume of a manual 8¾" X 10¾" and running to 64 pages, plus a World Time-Zone pull-out map, but does it is hoped show that a well organised communication system such as MARS is possible, and indicates how a first class training system and low-priority unclassified communication system can be built up using existing amateur equipment alongside Service material and Government surplus items.

RSARS QSL BUREAU.

No report has been received from the Bureau in time for this deadline. However, if you wish to make use of the free Bureau service, please ensure that you keep a supply of stamped addressed envelopes at the Bureau for the collection of any cards held there for you. Remember after six months if cards are not collected, the Bureau Manager has the right to dispose of cards according to Rule. Bureau address inside front cover,

SWL SECTION.

Similarly, no report has been received from the RSARS QSL Representative for this edition. Almost all members have spent some time as Listener (even active amateurs spend a certain amount of time during each QSO listening) we consider that the SWL member of RSARS is an integral part of the organisation. The Editor is always interested to hear from SWL/non-licensed members and if you have any news at all send it along to the Editor (Address inside front cover).

ACF/CCF Section.

Again, no report from the ACF/CCF Rep., although it is known that several members are members of the ACF/CCF. What do you fellows do when not on parade? How about some news of your activities, NatNet, etc.?.

PLANNING APPLICATIONS AND THE RADIO AMATEUR.

G3ZYE.

Next to discussion of equipment and antennas, the problem associated with obtaining Planning Permission for masts and antennas, particularly the larger HF beams, rate an important topic of conversation among radio amateurs. Much correspondence has appeared in the various amateur radio publications, and the following is meant as additional advice, based on recent personal experience.

In July 1977, the writer moved into new premises in Hove, a large semi-detached building five storeys high, in a high density residential area. Previous QTH's had included boarding schools, where large open spaces remote from public areas made antenna erection relatively straight forward, with authorities professing no interest even in 100ft+ Versatowers and stacked arrays. Enquiries among the local amateur fraternity revealed that permission to erect a Versatower and/or masts attached to the buildings would not receive sympathetic consideration, and after much thought it was decided to proceed on a gradual basis without approaching the Planning Authority. Two support masts, each 20ft long, 2inch OD aluminium tubing were erected, one fixed on the top of the main building, giving a total height of 75ft above ground level, and the other to a small garden room 140ft away, giving a maximum height for the top of the mast of 35ft. A variety of antennas were tried between these supports, from dipoles to delta loops, all working reasonably well, but giving disappointing directional control compared with previous beam antennas.

In December it was decided to erect an HF beam, and an old G3IMX cubical quad was rebuilt and made ready for service. It was decided not to fix a rotator on the top of one of the existing masts which were to continue supporting the LF antennas, and the head unit from a Versatower was bolted in place on the top platform of the fire escape at the rear of the building. A 20ft pole mounted on the rotator supported the quad, and a further 8ft pole clamped on the top of this carried a crossed 10 element 2 Metre beam. The total height of this array was in the order of 80ft, and not unnaturally both HF and VHF performance improved beyond recognition.

To the author's surprise, no complaints were received from residents or the Planning Committee, and six months peaceful operation followed. However, in May an Inspector from the Local Council called round and politely suggested that an application should be submitted, and even the most optimistic local amateur thought that the days of the "quad in the clouds" were numbered. Here the RSGB was approached, and their advice proved most helpful. A pro-forma letter of application was provided, together with advice on how to complete official application forms, and an invitation to contact the Society should further help be required. It was decided to provide a fully documented letter of application, in addition to the four copies of the official form required. This decision was taken after conversation with other amateurs who had been through similar experiences, and in addition, it was decided to supply sufficient copies for which elected members of the Council Planning Committee to receive their own copy - the alternative to this would have been to submit a single copy, when the Planning Officers would have extracted information which they felt to be significant, and each member of the Planning Committee would have received one or two short paragraphs by way of explanation. At this stage, a further unexpected advantage was revealed, namely that it was not necessary to submit plans and detailed drawings of the construction and method of mounting, etc., since as the masts were already in situ, photographic evidence was easier to obtain, and certainly cheaper than employing an architect, though this would not have been absolutely necessary. Photographs ware taken of all three masts from favourable angles, showing true perspectives rather than distorted appearances from ground level, and the application drafted, stressing the degree of preparation required before an amateur radio transmitting license is granted, the responsibilities undertaken by the holder of an amateur transmitting licence and the fact that no TVI had been reported, etc. The station then went almost completely QRT until the Planning Application was heard, to ensure that the last statement remained a true statement of fact!.

The application was finally heard in early September, and the applicant went along to listen in on the proceedings, which were held in public. This can be an extremely frustrating experience, as the

PLANNING APPLICATIONS AND THE RADIO AMATEUR - Contd.

applicant is not allowed to speak for the application, and everything stands or falls on the written application. It does not help to hear elected members of Council making outrageous statements which the applicant knows to be untrue, but which he has no opportunity of correcting, unless he should later decide to appeal. In this particular ease, however, to the amazement of the local amateur fraternity, the Planning Department had recommended acceptance, commenting that the application made it perfectly clear that the structures were physically sound, that all eventualities had been covered, and it was in the public interest that such responsible hobbies be encouraged!. One elected Council member was heard to remark that it wasn't as if anything large was concerned, as the masts were less than 400ft high, so they would not be a danger to low-flying aircraft!. The application was approved, a further benefit being that it had been carefully phrased so that permission was granted to retain the masts and any associated antennae, the quad and Two Metre beam being merely cited as existing examples.

Apart from the relief and light amusement provided by the exercise, there are lessons to be learnt. First of all it is recommended that all members with Planning difficulties, or who think they might run into trouble in the future, contact the RSGB and read the excellent advice they have to offer on the subject, which includes an invitation to follow-up should anything more specific be required. It is not advisable to go ahead and erect masts without permission, as happened in this case, as there is no doubt that this can prejudice the residents and local officials, but on the other hand there remains the possibility that if structures are erected and it can be demonstrated that no nuisance has been caused to local residents, then this can be a point in favour of the application. Above all, providing the advice and help offered by the RSGB is followed, the procedure need not be an expensive one, unless an application is rejected and an appeal has to be considered. At this point a Solicitor and Cheque Book are required!!!.

Robin G3ZYE

OLD TIMERS SECTION.

GM3IAA/0107.

Reference the Old Timers Section on page 13 of the 7/78 issue of "Mercury", by G2BQ, I was interested in the reference to Mr. Scott-Taggart and the "Reflex circuits". Scott-Taggart did not INVENT reflex circuits - that was done in Germany circa 1912. However, he did publicise his "ST-100" which employed one valve operating at both RF and AF, followed by one or more valves at AF.

At that time I designed a three-valve receiver with ALL three valves operating at both RF and AF; rectification was by carborundum crystal. This circuit was published in POPULAR WIRELESS AND WIRELESS REVIEW, No. 121 of September 20th 1924, under the title "A Triple Dual magnification Receiver - How three valves can be made to provide three stages of HF amplification and three stages of LF magnification is lucidly explained in this article".

I employed the "Inverse" method of feeding back the LF component, first to valve No. 3, then to No. 2 and finally to the first valve. I had many letters from the USA about this receiver and several records were established with the reception of broadcast stations, mainly in North America.

When in the Wireless Section of the Royal Engineers in 1916, I had the pleasure of handling the "Round" circuit (named after Captain Round) which employed one valve in a dual capacity. This circuit was incorporated in the Marconi Mk. 16 Tuner.

73 Jim MacIntosh C.Eng.MIERE FCIS, GM3IAA.

(Many thanks, Jim, and it is hoped that this may prompt others to record memories (happy and otherwise) of days gone by when amplification, as we know it, was known as magnification, when one could get (for a few pence) a blueprint of the "PW88" - a one valve receiver published by "Practical Wire1ess", and the Eiffel Tower was MW DX - Ed.)

MORE FROM THE OWL.

Whilst on a silent visit to Blandford recently, the Owl had occasion to visit the Royal Signals Museum. Proceeding quietly (in order not to awaken a certain Major (Rtd) Les Taylor, the Curator) he stopped in front of Case No. 33 and his eye caught a certain exhibit with the Accession Number 1478/WT265. Like a good computer his memory banks were soon in action sorting out where and when he last saw that certain Vibroplex Key. In 17·4 μsecs the answer was there - GW3ASW. What is the connection you might ask. Well, by carefully placing ears against keyholes, the Owl understands that GW3ASW has kindly presented his old Vibroplex key ("And so has now gone the last physical "fact" that I was once a B1 Operator .....") to the Museum. The Owl also understands that there is a small proviso attached - that if the Museum should ever have no further use for the key it should be offered back to RSARS. To Cyril, we say "Thank You", for helping to maintain for posterity a little bit more of Signals history and to Les down there at the Blandford Museum "The Owl is only joking, Les. He is only too well aware of the large amount of work you put into the Museum and its exhibits and he well remembers how helpful you were to a certain brand-new (not-so-) young Subaltern in a certain NATO Signals Regiment a few years ago!.". If YOU have anything from the past connected with Army communications, why not contact the Royal Signals Museum they might well be interested in taking it off your hands and thus lightening your local dustman's load.

The Owl also reports that GI3NQH has not been heard on the bands too much recently and a "flying" visit to GI-land shows that Joe is now a busy member of the Royal Naval Auxiliary in the role of communicator thus cutting down still further time available for amateur radio.

A further Owl report shows that we may soon be hearing G3JME/0532 on 2 Metres. Mike has not been active for some time but now has a Cambridge undergoing modification and is putting a lot of thought into a new HF rig.

Member 1394 suffered a heart attack in August last year and the M.O. sees him on Sick Parade every other month. The last report was that he should not take the RAE in December this year. However, in the meantime William is preparing himself for the Morse Test next year and helping out at his local Club (G4FSO) where he listens to a lot of W/T DX. Good Luck OM, and we trust that you will soon be 100% fit again.

Sgt Paul Walker, who was VS5MM and is RSARS 1099 is understood to have left Brunei and by now should be in the HQ area at Catterick. He regrets that only 5 UK contacts were included in over 2000 QSLs despatched and that none of these were for RSARS members. Paul hopes to be active with a TS-700-G on the VHF Bands. He also mentions that it would appear that the Colour Code, along with such things as Log Tables, etc., are still CLASSIFIED in Royal Signals Engineering Pamphlet No.5!!!.

HQ STATION MANAGERS REPORT (As at 1 Oct '78).

G4EMX.

Once more it is time for your HQ Station Manager to put key to paper. Your HQ station is now slowly coming to life for all to see. The station is open from 1830 hours Local to 2100 hours Local on Tuesdays and Thursdays - the main Club night being Tuesday. If you are contemplating a visit to G4RS please make sure that you have your RSARS Membership card with you. This will aid your admittance to 8th Signal Regiment. To visit at any other time please contact Ray, G3EKL, QTHR.

The 80 Metre Nets are also coming back to life with lots of new and some not-so-new, members airing their lungs (and wrists). (Don't forget, someone, somewhere, needs that RSARS number of yours!).

At long last more DX working is becoming apparent, with Ron, G3NKO, drumming up custom for Clive, VP8QH John, VP1APC, waiting for calls that don't seem to come, and Harry, 3D6BP, and George, TJ2P, slowly adding to their scores.

HQ STATION MANAGERS REPORT (As at 1 Oct '78) - Contd.

HQ is at present doing trials on 20 Metres at 0650 hours GMT onwards to VK and ZL on Sundays, in the hope that we may have Activity Sundays to the Far East and beyond. The Sunday concerned would be in the second full week-end in the month. We are aware that there are members in South Africa and the Middle East who are active on 15 Metres on Sundays and they work into 'G' quite well. So, the suggestion is - 20 Metres, 0700 to 0930 GMT and 15Metres 0900 to 1100 GMT. Comments on this suggestion would be most welcome from both Home and Overseas members.

On 2 Metres, HQ has an 8-element at 60 feet looking South on *144·230 MHz. GB3VHF is normally heard here at about 5 and 1. So, if you can hear GB3NEE on 144·150 MHz in the South there is a good possibility of a QSO. If you are not in that position, why not get your own Net going on *144·230 MHz - just call ,'CQ RSARS".

Lastly, please note that all overseas contacts/skeds are referred to in "Zulu". Now, Zulu means "GMT" and Alpha means British Summer Time, i.e. Local Time at the moment in the U.K. Clocks are due to change soon and then we'll be back on GMT. (This "phonetic" time comes about by the international agreement that divides the world into 24 "alphabetic" time zones - A to Z with O and I omitted - starting and ending at the Greenwich meridian. Even this does not make things 100% easy, the Malay Peninsular is on 'GH' Time, i.e. 7🗁 hours ahead of GMT - Ed.). A number of stations have been heard to comment that they missed ZZ9XXX because they were on frequency either one hour too soon or one hour too late!.

73 Kit.

*FOR 144·230
READ 144·220

RSARS LIBRARY.

G4EMX.

Members are reminded that the books held in the RSARS Library are available on application. The loan is free, of charge but borrowers are asked to pay postage each way. Requests to G4EMX (or via G3EKL) and, if books are available at time of request, they will be forwarded by the Librarian. Loans are available for a period of two months from date of despatch after which borrowers should return same, securely packed, and enclosing the cost of outward postage. Monies for postage can only be accepted by Postal Order, Cheque both made payable to "Royal Signals Amateur Radio Society") or VALID IRCs. The following books, pamphlets, handbooks, etc., are held at HQ :

TR Bulletins in 19 volumes 1925 - 1951 - Wireless Weekly Volume 1, 1923 - Experimental Wireless Volume 1, 1923/4 - Amateur Wireless Volume 1, 1923 - Modern Wireless, 1923 - Royal Signals Journal in 7 Volumes, 1933/9 - Handbook of Wireless Telegraphy Volumes 1 and 2, 1938 - Handbook for Wireless Telegraphists, 1938 - The Elementary Principles of Wireless Telegraphy, Volumes 1, 7 and 11, 1938 - Royal Signals Handbook of Line Communication, Volume 1, 1947 - The Services Textbook of Radio, Volumes 1, 5 and 7 - National Certificate Mathematics, Volume 2, (Abbott and Marshall) - The Transistor Radio Handbook, 1963 - The VHF-UHF Manual, 1971, (RSGB) - A Guide to Amateur Radio, 17th Edition. (RSGB) - Radio Operators Handbook - Amateur Radio Circuits Book, 1968, (RSGB) - Communications Receivers, (RSGB) - Modern Transistor Circuits for Beginners by Clive Sinclair - Teach Yourself Radio Communication - Transmitting Valves by Phillips (the use of Pentodes, Tetrodes and Triodes in Transmitter Circuits) - Wireless Servicing Manual, 1959- Fundamentals of Radio Valve Techniques, 1964 - 101 Ways to Use Your Oscilloscope, 1964 - 101 Ways to Use Your Signal Generator - Electrical Instrument Measuring Practice, 1954 - Application of the Electronic Valve in Radio Receivers and Amplifiers, Book 4 - Radio Data Reference Manual 3rd Edition, (RSGB) - Radio Amateurs Operating Manual, 1969 (ARRL) - Shop and Shack Short Cuts, 1964, (CQ) - SSB for the Radio Amateur, 1960, (ARRL) - Hints and Kinks, 1968, (ARRL) - Course in Radio Fundamentals, 1960, (ARRL) - Radio

RSARS LIBRARY - Contd.

Amateurs Handbook, 1972 (ARRL) - Semi-Conductor Manual, 1964 (Phillips) - Directory of Certificates and Awards 1973 (IARS) - New Sideband Handbook, 1958, (CQ) - World at their Fingertips by G6CL, (RSGB) - Antenna Handbook, (ARRL) - Test Equipment for the Radio Amateur - Radio Amateurs Examination Manual, (RSGB) - Learning the R/T Code, (ARRL) - HQ RAF Middle East, HF Aerial Systems - Radio Location Techniques (Wireless World) - Heathkits Basic Electronics, Parts 1 and 2 - The Licence Manual 1971/2 (ARRL) - Electricity and Magnetism, 1935 (Signal Training) - RTTY A to Z (CQ) - The New RTTY (CQ) - Radio Fundamentals, 1944 (The War Department) - Electronics for Shutterbugs, 1974 - Radio Communication Handbook, 1971 (RSGB) - Radio Fundamentals Principles and Practices, 1944 - Fundamentals of Electrical Measurements, 1972 - DC Motor Speed Controls and Servo Systems, (Electro-craft) - Radio Electronics Made Simple, 1956 - Amateur Radio Antennas, 1977 (JayBeam) - NB FGM Manual (RSGB) - Jungle Green by Arthur Campbell MC - The Journal of the Royal Signals Institution, Volumes 1 to 5 - Twenty Years After, Parts 1 to 42 - Many Copies of QST, Short Wave Magazine, The Bulletin, Radio Communication (many still to be sorted!)

The following Handbooks are also held :

AVO Valve Tester Data, 1965 - The Morse Keyboard Perforator - TX D11 - Station Radio C42 - RX AR88D - Station Radio D11/R230/R234 Operating Instructions - RX 730/4 by Eddystone - RX AR88LF - SSB Adaptor SB-10U by Heathkit - RX Racal RA-17 - KW-2000A Transceiver - KW-2000A P.S.U. - SB-500 2 Metres Transverter by Heathkit - SB-610 Monitor 'Scope by Heathkit - KWM-2 by Collins - HRO 50-1, HW Series HRO-M, -MX, -MRR, -MTM, -SR, -JR - SSB TX/RX HW-32A by Heathkit - Oscilloscope O 12-U - RX UXR1 by Heathkit - AC P.S.U. HP-33 by Heathkit - Speaker SB-600 by Heathkit - External LMO SB-640 by Heathkit - Linear Amplifier SB-600 by Heathkit - Swan Cygnet 260 - Receiver Adaptor Frequency Shift No. C1 - Yaesu FV-101-B - Yaesu FT-101/E/EE/EX - KW-107 Supermatch - Wavemeter Type W-1649 - Pye Fixed Station PTC 723/724 - Telequipment Double Beam Oscilloscope Type D31-D31R - Receiver R-208 - Frequency Meter SCR-211P - 211T (This is the BC221 station) - TX RCA 4332-B and Transmitter W852.

If you have any books, pamphlets, handbooks, etc., that may be of use to other members please send them along to the RSARS Librarian.

STORES SECTION REPORT.

G3NKO/0227.

Stores! - Not a word that stirs the imagination or causes the adrenaline to flow, but, nevertheless, for the last year this has been my little world. As a serving member I am occasionally "banished" to distant parts for varying periods of time which means that delays do sometimes occur in the handling of orders - my apologies!.

The turn-over of stores is, at the moment, good so keep those orders coming. However, due to the lack of orders for "RSARS Flat badges with pin on reverse" and for "RSARS Key Fobs" these are being allowed to run down and will NOT be re-ordered. Overprinting of QSL Cards is taking about six weeks minimum from receipt of order to delivery so PLEASE ORDER EARLY!.

The engraving of call-sign lapel badges has presented a problem in the past but this has now been sorted out, thanks to Bill, G3DBU but once again PLEASE ORDER EARLY.

Index cards are on the move, after lying dormant for a long time, and are now selling like hot cakes, so get your order in quickly. Society ties have almost gone and undoubtedly when stocks are replenished the price will have increased, so order now at the old price.

In conclusion I would like to thank you all for the forbearance and just add that if you have a telephone number stick it on top of your order form.

73 Ron.

OPEN MARKET

(Being that part of "Mercury" where members can offer for sale or seek equipment, circuit diagrams, spares or information. This service is provided free of charge and the Royal Signals Amateur Radio Society can accept no responsibility for the outcome of the transactions. \all contact should be made with the member/address given and not through HQ or the Editor (unless otherwise stated).

WANTED - By Mike Taylor, G3UCT, Wychwood, 27 Glen Road, FLEET, Hampshire, GU13 9QS. (Tel. FLEET (02514) 6998) the following items in connection with a collection of early military radio equipment: R107 Mk.II, any original connectors or plugs for the R107/WS12 station, ATU for WS12 Sender, No.12 Sender in any condition (for spares), any connectors or items for a Canadian No.52 Set, any items for the WS53 Sender, also any items for the WS19 Mk.III station.

WANTED - By Paul F. Scottorn, G3RFI/RSARS 0133, 34 Sutton Mill Road, Potton, Sandy, Bedfordshire - any information on a remote tuned mobile whip antenna of exceedingly heavy duty construction, probably intended for use on an A.F.V. The type No. is L.T.A.6 and shows the name of LABGEAR of CAMBRIDGE, although it is thought that the actual manufacturer may have been BELLING & LEE. The same type number is carried by the remote control box.

FOR SALE - By Mike, G3GWD, 25 Whitmore Road, Beckenham, Kent, BR3 3NU. Yaesu FRG-7 Receiver, Solid State 0·5 - 30 MHz excellent condition. £120. KW Viceroy SSB Transmitter 3.5 -0 30 MHz 180 Watts p.e.p. complete with P.S.U. This is a Mk III and is in good order. £65.

WANTED - By The Editor. Address of Hitachi (UK) Ltd or their Agents, in order to get a Hitachi Desk Calculator repaired (or, at least a circuit diagram).

STILL WANTED - By non-member G4GGY - 1915 vintage double current Morse Key. Details via the Editor, please.

GW3ASW, C.R. Mountjoy, "Pant Villa", 55 Aberdare Road, Cwmbach, Aberdare, Mid-Glam. CF44 0PG still has the EUROPA TRANSVERTER for disposal. Offers to Cyril please at the above address. (Cyril reports that other items mentioned in a previous "Open Market" were quickly disposed of. Why don't YOU make use of a free entry in "Open Market"?).

WANTED - by Anton, G3VFB/RSARS 1362, the circuit diagram and/or handbook for the Heathkit HW-12. Heathkit unable to supply. Will photocopy and return if necessary. All info to A.R. Matthews, G3VFB/1362, 13A Kings Street, Twickenham, Middlesex.

WANTED - By KA4DXU (For whom G3DPS was the first 'G' contact) the address of G4HJA (non-member) (who was his second.) Details to the Editor or to Comer, KA4DXU, 249 51st Street North, Birmingham, Alabama, U.S.A. 35212.

REMEMBER "TEEK"?

A recent CW QSO between G3DPS and G3GUV brought to light the fact that since he joined RSARS some time ago, Tom has never run across anyone he knew in the Service. He served as a Boy in 'F' Company in 1955 and was known as 2323944 with the nick-name "Teek". If you remember "Teek" drop him a line C/o The Ed.

CONGRATULATIONS

To the R.N.A.R.S. who now have a permanent "Special Event" call-sign - GB3RN - for use on HMS Belfast. RSARS members are asked to support RNARS whenever they hear this call being "aired". They also hope to change the existing call G4EOK, to G3HMS when this becomes available.

EXPERIENCES GAINED DURING THE TRAINING OF AN ARMY SIGNALLER.

L.W. SALAMAN/1283.

On entering 'S' (Signals) Company. I commenced, and duly completed, twelve and a half weeks training (condensed from the normal peacetimes 2½ years!), and from an intake of 36 two of us passed the final test and were mustered as Driver/Operator Class II. That took place on the Friday.

I was then duly informed that a nation-wide scheme was to take place on the Sunday involving a number of Army units and the Home Guard. I was further advised (or instructed) that I would be the CO's Operator of a Reserve unit comprising Bren Carriers, Scout Cars, etc., and including some light guns.

Sunday came along and by 11.30 hours our cavalcade moved off. About 15.30 hours I received a coded message giving "the new HQ telephone number", and I forwarded this message on a message form by DR to the CO in his Scout Car. It was returned to me for safe keeping. Some 15 minutes later we suddenly stopped - violently!. Peering out of the Gin Palace side window I found myself looking into the muzzle of a six-pounder gun concealed in the hedge. I slipped the four panel screws of the WS 19, took out the PA and threw it out into the road. I then hastily detuned the set, picked up the message form, screwed it into a ball, AND SWALLOWED IT!!.

Along came the enemy Intelligence Officer with my CO. My message pad was scrutinised and I was asked for the coded message. My CO told me to pass it over as we had been captured. I told him that was not possible!.

On Battalion Part II Orders the next day and for a week following, a Commendation to 1431337 Rfn. L.W. Salaman, Driver/Operator Class II appeared.

It took an awful long time to live that down. However, I was not charged for the 807!!!.

ALSO

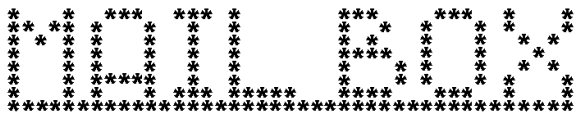
Prior to training as a Signaller, I had to undergo three months Corps Training. The last few days were spent tramping over Penistone, until we came to the heights above Sheffield where a Rifle Range existed. Swirling clouds just cleared the ridges. Like a good Rifleman I fired my sighting shot - and a very elderly, scrawny goat fell - DEAD!

It took me a long time to live that down as well!!.

REPORT FROM SCARBOROUGH.

G3XHA/0336.

Scarborough will be known to many members, perhaps from serving days, perhaps from holidays. Scarborough is the old home of the Rhine Signal Company, later to become 5th Divisional Signals. (In later days it was home to a Mixed A.A. Signal Regiment and, as the Editor knows only too well, after spending 6 agonizing weeks there, the Northern Command School of P.T.!). Cyril Ginders, G3XHA/RSARS 0336 sends along the following QSP's from the Scarborough area. "This is probably the time to get our Christmas Greetings out to our overseas friends, and, therefore, a special greeting to Ken Cook, ZL1AXM/RSARS 0534 and his family from all at Scarborough and from all members of the Scarborough Amateur Radio Society (G4BP). Also from the following members of R.S.A.R.S. : Len Pearson, G3JFE/0845 Secretary Royal Signals Association, Scarborough Branch, John Cutter, G3VAN/0543, Chairman, Scarborough Amateur Radio Society, Peter Bateman, G3LCG/0917, Past Chairman, SARS, Jack Hargreaves, G5VO/0052, RSGB News Reader & SARS, Cliff Renshaw, G2AQN/1044, Past President, SARS, Bill Woolcott, G4FVR/1261, SARS, Skim Simpson, G3CAA/0976, Vice Chairman and Area Rep. SARS, Cyril Ginders, G3XHA/0336, P.R.O. and past President, SARS. To ZL1AXM de G3XHA - Have heard you working on CW at 0800 on 20 Metres. So who knows it may happen yet!. Many thanks for the book you sent - still doing the rounds of the 50 or so SARS members. To G3YSZ/0179 from G4FVR/1261 - Looking forward to contacting you around 3740, 1400 GMT weekdays, this still being the SARS frequency + or –. To G2TT de G3XHA - Wishing you all the best.



Brian Harris, G3XGY, writes from 4 Flamingo Crescent, Work, Weston-super-Mare, Avon, to tender his resignation fro R.S.A.R.S. due to the cost of inflation and the rigours of buying a new house. He takes this opportunity of sending his 73 to Mick, G3PCW. Good Luck, Brian, and thanks for your support in the past from both 9V1 and G.

From : Ted Womack, G3LZR/RSARS 0594, 339 Rush Green Road, Romford, Essex, RM7 0NJ. "Thank you for your good wishes on my retirement, pleased to say that I am enjoying it, although very busy "Catching up" with outstanding jobs. The "DX" part of my retirement is doing very well, as I've had several "eye-ball" QSO's with an old friend, Fred Cuton, of VK2ABQ antenna fame. He suddenly popped up quite unexpectedly after I began my retirement. He helped and supervised in the making of the latest version of his antenna, and I must say it works very well, with 3 VK areas the first time I used it on 20M, and quite a goodly number of VK's and others since on all three bands, 10, 15 and 20M. With the ability to operate at any convenient time, now that the "Salt Mine" doesn't come into the picture, I'm ready to go places!!!." FB, Ted, and how about some more details of the VK2ABQ Antenna?.

From : Pete Sheppard, G4EJP/1065, 24 Grange Road, Leconfield, North Humberside, HU17 7LE. Pete has been out of touch for a while but comes back on parade with a few Service and Amateur Radio details. On the Military side he has served as follows : Jan. '64 - Dec. '65 Junior Leaders Regiment RASC/RCT, Jan. '66 - Nov. '66 17 Port Regiment RCT, Marchwood (as a Heavy Crane Operator), Nov. '66 - Apr. '67 8 Railway Squadron RCT, Longmoor (as a Breakdown Crane Operator), Apr. '67 - Nov. '68 - H.M.S. Intrepid (Dock Operating Troop), Nov. '68 - Nov. '75 17 Port Regiment RCT (as a Heavy Crane Operator). During this time he took his Driver/Radio Operator B III Course (Feb. '71), Driver/Radio Operator B II Course (Oct. '71) and his B I Course in Jan. '73. In Mar. '73 he attended a Regimental Signals Instructors Course and in Nov. '75 moved to Signal Training Troop RCT at Aldershot. The move to A.S.M.T. Leconfield came in May '76. On the Amateur Radio side, Pete started as a SWL in 1971 using a variety of receivers including IMR 54, 9R59DS and an FR400. He took the RAE in May '75 with the Southampton RSGB Group and was licensed in August of the same year. Early days were spent mainly on Top Band and 80, although of late 2 Metres has been the favourite band. Economics have meant the recent sale of the FT-101 and excursions on HF have been made using Club gear. He is, however, active /M on 2 Metres using a multi-mode IC-245-E. Hopes to be back on 80 shortly when HF gear becomes available at Leconfield. Welcome back, Pete, and we'll be looking for you on the HF bands soon.

From Ex-VS5MG, now Mick Groom who gives his new address as 20 Kipling Close, Thatcham, Berks, comes a note to say that he is now settled in the Thatcham area and is again active under his own call since February this year. Before returning to the UK Mick had a spell in Rangoon, Burma, instructing Burmese Signals where he re-established old ties with soldiers and officers who were in Boys service with him in 1952.

A 'newsy' letter comes from VU2MD, Dady Major, Petit Mansion, 85 Sleater Road, Bombay, 400 007. "Nothing much of importance to report - a little operating. a little riding, a little outdoor work, but most of my time is taken up with work around the house. The house is as old as I am - 71 years!, and requires a lot of looking after. The rig a CE-20A exciter, LA-400B Linear, 458 VFO and an AR-88D and SX-28 receive set-up (latter two of WW II vintage) is also getting old and occasionally gives trouble. I shall continue to use it as long as possible. New amateur radio equipment is very hard to get and its import is banned, so we have to make do with what we have. In November last I worked HK0BKX (San Andres Island) and this has taken my score a little nearer the 300 confirmed mark. It is still surprising that the 'G's' are still so hard to get.

MAIL BOX - Contd.

Occasionally one can work Europe but not a chirp from the UK. W's, K's. VK's and ZL's come rolling in and are no trouble. Regarding G2NA's suggestion of listening to commercia1 stations just outside the band, I listen to WCC on 13,033·5 to check on 14 MHz. My regards to all members. 73. Dady, VU2MD.

J. Rimmer, G3VSD/RSARS 0784, 2 Moss Close, Helmshore, Rossendale, Lancashire, writes to tender his resignation from R.S.A.R.S. due entirely to lack of interest in the hobby on his part. Please delete G3VSD/0784 from your lists.

SHEEPSKIN DEPARTMENT.

Another piece of parchment to cover that damp spot on the shack wall. This time it is THE WORKED GERMAN LARGE CITIES AWARD issued by the Diplom Interessen Gruppe of Germany. It is available in three classes and there is no restriction on mode used. No band endorsements are made as more than one band must be used in qualifying for WGLC. Each city may be listed once only in the claim. The three classes are :-

Class	DX Stations	EU-Stations
3	10 Cities	20 Cities
2	20 Cities	40 Cities
1	30 Cities	60 Cities

QSLs are NOT required for this claim, but a list certified by 2 other radio amateurs or an officer of a National Radio Society should be submitted together with DM5.00 or 10 IRC's. The Award is also available to SWL's on a "Heard" basis. Claims should be sent to :-

Karl-Heinz Kümmerie, DL2JB, 694 WEINHEIM, Postfach 23, Germany.

German Large Cities are : Aachen, Augsburg, Berlin, Bielefeld, Bochum, Bonn, Bottrop, Braunschweig, Bremen, Bremerhaven, Darmstadt, Dortmund, Dusseldorf, Duisberg, Essen, Frankfurt/Main, Freiburg, Gelsenkichen, Gottingen, Hagen, Hamburg, Hannover, Heidelberg, Hellbronn, Herne, Karlsruhe, Kassel, Kiel, Koblenz, Köln, Krefeld, Leverkusen, Ludwigshafen, Lübeck, Mainz, Mannheim, Monchengladbach, Mulheim/Ruhr, Munchen, Munster/Wstf., Neuss, Nurnburg, Oberhausen, Offenbach/Main, Oldenburg i. O., Osnabrüek, Recklinghausen, Regensburg, Remscheid, Rheydt, Saarbrücken, Salzgitter, Solingen, Stuttgart, Trier, Ulm, Wanne-Eiekel, Wiesbaden, Wilhelmshaven, Witten, Würzburg and Wuppertal.

WELL, WHAT DO YOU KNOW?

Old-Timers will doubtless remember working KR6's on Okinawa Island. Semi-Old-Timers may remember hearing a KR6. Young-Timers will know that Okinawa is now KA6. For 5 points - what year did the change from KR6 to KA6 take place? For another 5 points, what month? To make the total 15 points - what date/day? And if you really want to go for the 20 points - what time? (GMT, of course!). Answers over the page, somewhere. Keep the points scored in a plain brown envelope! 73 "Historian".

HEARD ON 80.

From a G4F-- "Must go QRT now, the XYL is going to do some washing, and I cause problems to the washing machine". (Can one REALLY - get WMI? - Ed.).

REPORT FROM THE DEPUTY NET CONTROLLER.

GW3ASW/GW4CCF.

THE SSB NETS.

That Band conditions - on 80 in particular - have not improved much is no secret, at least during the daytime!. However, despite, or perhaps in spite of this, the LF SSB Nets persevere and the "lows" reported in the last, two or three issues appear to have passed. The Sunday and Tuesday Nets in particular have been, and I hope still continue to be, well patronised. They have not yet reached the "high" of a few years back when Nets of 30 - 40+ were common, but they frequently reach the quite presentable figures of 20+ and a few weeks back I had hoped that we would have reached 30 again. It was not to be, however, and "only" 27 went into the log book.

GW3ASW alternates with GW4CCF so if at any time a station requires the other call it can easily be arranged - though NOT please during Contests (see below). Since December last year when I commenced using the AAF54 call I have entered just over 500 entries into the log and issued 95 QSL cards though I regret to note that only 20 have materialised in return. 18 of these have come via our own Bureau and 2 via RSGB.

With the coming Contest season and with the 5-59 starting up in November I shall be using, both calls, my own for the first hour, and GW4CCF for the second. Please do not call me for the other call when I am using either one of the calls, as it will only mean disappointment. Thank you. If you require a QSL card please indicate and one will be despatched via G3YSK.

For the foreseeable future, due to domestic arrangements, I can only make brief appearances on Thursdays or Saturdays so please do not wait for others to call, start off by calling "CQ RSARS" on the nominated QRG - you'll soon be joined by others I'm sure. When G4RS appears he will take over if you want a break.

Where the Overseas Nets are concerned, virtually nothing is known of Wednesday activities, if any, but during the week overseas members do appear, but on diverse frequencies and times. Up-to-date news of these are best obtained from G4RS or the LF Nets Control Stations who can usually bring you up-to-date with the latest news. This information will be more accurate than any published here. Stations known to be active at the time of writing are : ZL1AXM, ZL4IJ, VP8MQ, VP1APC, TJ2P, 9G1KU and 3D6BP. If there are any others that you are aware of, please let HQ know as many details as you can. (If overseas members would care to drop a line to the Editor - address inside front cover - such information as operating times, frequencies, modes, etc., will be passed on to HQ and the nets. Why not make at least ONE call on the RSARS frequencies listed inside the back cover every time you switch on the rig?).

Finally - FRONT RANK DRESSING. No, nowt to do with that 'orrible man, the Drill Sergeant, nor a recipe for a salad dressing, though it could. well be!. No, Gentlemen, I am referring to that impression we create in the Listeners mind when they hear our Nets. Yes, I'm back on my old stallion - NETTING!!.

As a Controller I too often have to request stations to "Net on". This request is not always, I regret to say, complied with. Next time you listen to one of our Nets just close your eyes and try to visualise what the effect would be if the order of netting was physical instead of electrical. What an array of disorder!!. I frequently have letters in reference to this and I can only agree 100%.

Let us have pride in "belonging". With a little care it is possible to get those separates locked on, or the IRT/ ITT correctly adjusted, and please remember that the Control stations' QRG IS THE ONLY FREQUENCY TO BE USED - he is the Right Hand Marker in the drill sense. We are, as far as I am aware, the largest Net to form up on any QRG and the more we are, the more important it is to present the FRONT RANK APPEARANCE. Generally our Net discipline is excellent, so let us, with that little bit of extra care, announce with pride "We ARE - the Royal Signals Amateur Radio Society"...EYES F-R-ONT!.

Cwmbach Aberdare September 30th 1978.

THE OWL REPORT

DORAN Electronics Limited will discontinue supplying electronic components after about September this year. At the same time they will be issuing their new catalogue which will consist of Micro-processor based and other kits, Electronic Projects and Hobbyist books, Electronic and other Tools, and Audio and Car Accessories.

The planned Repeater, GB3CF, for the Leicester area will be on R0. Could be a problem, particularly during 'lifts', if stations continue to use this as a Simplex frequency.

The UK FM Group (London) has published a booklet "A Newcomer's Guide to FM Simplex and Repeater Operation on Two Metres". This includes the "Due Compliments" Code for use through Repeaters. Why "Due Compliments"? Because the Code is based on 5 Readability standards and 5 Strength standards and the old Telegraph Code listed '55' as meaning "With Due Compliments". The Code is arranged as follows :-

Readability		Strength	
Perfectly Readable	5	Full quieting	5
Readable with Slight Difficulty	4	Slight Noise	4
Readable with Considerable Difficulty	3	Noisy	5
Barely Readable, Occasional Words Distinguished	2	Very Noisy	2
Unreadable	1	Too Noisy	1

So "5 & 5" is what one should aim for when working through a Repeater (and NOT 5 & 9).
(Tnx, UK FM Southern Journal).

Gerry Gearing, G3JJG, Secretary of The Cheltenham Amateur Radio Association, has moved QTH and can now be found at 158 Leckhampton Road, Cheltenham, Glos. Gerry has managed to get Planning Permission for his HF Beam, but had to amend his proposals somewhat before agreement was forthcoming.

Congratulations to Apprentice Tradesman Colclough of Penney Squadron, Army Apprentices College, Harrogate, otherwise RSARS 1546 who is now the owner of a brand-new call-sign G8RDI, Rob is using a Standard C-146A hand-held with a Modular Electronics PA giving 20 Watts to a Dipole. He hopes soon to be on 2 Metres SSB.

Congratulations also go to Steve Turner, RSARS 1110, not for moving QTH to 28 Patrick Road, Westbridgford, Notts., but for a change of call-sign from G8IXD to G4EQB. See you on the Nets, Steve??.

Douglas J. Carson, RSARS 1516 has now left school and has moved to 17 Montrose Way, Drymen, Glasgow, G63 0DR. He is to be congratulated also on the award of an Army University Cadetship and he will soon be starting at Glasgow University studying Electrical and Electronic Engineering. Doug also aims to join the University OTC. We wish you luck with the studies, Doug.

We were sorry to hear via the Owl that Steve Morrison, GM3HXF had a severe nervous breakdown during May/June this year, which has caused his early retirement. It was better to hear that Steve is now apparently well on the way to recovery and has managed one or two contacts on the air. Unfortunately, he has a neighbour who has a TV set whose time base plays havoc with the receive side of the hobby. Get well soon, Steve, and may you find a way of overcoming the QRM.

Another member "on the move" is Buddy Chambers, now resident at 437 No. 110th Street, Apache Junction Arizona, 85220, U.S.A. Having only just moved at the time of writing, Buddy has not yet managed to get an antenna up, but it shouldn't be long. Buddy also mentions that his XYL is also licensed and both are looking forward to getting back on the air. How about letting us know your best time for 'G' contacts, Buddy??

THE OWL REPORT Contd.

A letter signed "G. Jaekson ex 2359458 (1941-1946)" tells us that RSARS 1262 has swopped GW8NPB for GW4HGA. Congratulations, OM.

VE1UN/RSARS 1246 has also been on the move and is now located at Wilfred G. LeBlanc, 17 Dewitt Acres, Site 3, Box 12, RR No. 8, Fredericton, New Brunswick, Canada, E3B 5W5.Wilf queries if there are any RSARS Nets operational on his side of the Atlantic but as far as we know there are none, OM. Mention a time and frequency and we'll publish.

ELECTRICITY.

"HOG".

(The following article first appeared over one hundred years ago in a publication entitled "A CYCLOPEDIA OF AGRICULTURE, PRACTICAL AND SCIENTIFIC, IN WHICH THE THEORY, THE ART, AND THE BUSINESS OF FARMING ARE PRACTICALLY TREATED, BY UPWARDS OF FIFTY OF THE MOST EMINENT PRACTICAL AND SCIENTIFIC MEN OF THE DAY". The publication, in two volumes, was edited by John C. Morton, and published by Blackie and Sons, Frederick Street, Glasgow, South College Street, Edinburgh and Paternoster Row, London to whom all due acknowledgements are hereby made. The Cyclopedia was published in two volumes and dated MDCCCLXIII. - Ed.).

This science (Electricity - Ed.) is one of very modern origin, and not withstanding the activities of its investigators, remains in many important relations of nature very obscure. The general occurrence of this force, its grand and fearful demonstrations in thunderstorms, and the physiological effects which it is known to possess, have always led to a vague belief that it must be connected in some manner with the process of vegetable life. Doubtless this is true, and important indeed must be its connection with the process of vitality both in animals and plants; but unfortunately we know nothing of its mode of action on vegetable organisms. Works, indeed, have been written, and experiments have been made and believed, on the influences of electricity on vegetable growth, but the results are so vague in some instances, and so utterly unworthy of credit in others, that we are obliged to confess our total ignorance of the manner in which electricity acts in the promotion of vegetable life. "Electroculture", the word coined by some writers to signify the methods they employ for bringing the electrical forces to bear on the process of agriculture, is in fact a misnomer; a confession that implies that we have not yet ascertained the modes by which its influences may be regulated. In fact, the experiments already made on this subject possess so little practical value that an article on this subject scarcely comes within the limits prescribed by this work. Without, therefore, occupying an unnecessary space by recounting the hypothesis or unsatisfactory experiments which have been from time to time made on this subject, it may be desirable to confine attention to what is known of the electrical condition of the atmosphere, as a means of directioning attention to the only class of philosophical observations which are likely to communicate to us the practical knowledge so much to be desired.

There are two theories of electricity; one which assumes the existence of two kinds, the vitreous and the resinous, or the positive and the negative; the other which explains electrical phenomena by supposing that electrical excitement is due to an excess or diminution in the quantity of electricity possessed by a body, and a desire to attain a state of equilibrium represented by the possession of an amount equivalent to that retained by surrounding bodies. Whichever of these theories be the true one, the language of the first is most generally understood. The two kinds of electricity may be readily obtained, the negative by rubbing a stick of sealing wax with a dry silk handkerchief, the positive by substituting a rod of glass for the wax. These two opposite electricities, when resident in bodies, exhibit attractive power, and if sufficiently light, the two bodies approach; while bodies charged with electricities of the same nature are mutually repulsive to each other. Static electricity, or the force at rest, is of much more frequency and of greater philosophical importance, so far as regards the atmosphere, than dynamic electricity, or the force in

ELECTRICITY - Contd.

a current condition, as it is in thunderstorms. The dynamic condition exhibited in the working of the thunderstorm, and associated with its terrible effects, has led to a general conception that this represents the phenomena of atmospheric electricity. But it in reality happens that thunderstorms occur when there is the least quantity of electricity in the atmosphere. The local disturbances which produce thunderstorms by no means indicate the amount or intensity of the electricity in the air. Recent observations made by Quetelet of Brussels, by means of an instrument invented by Peltier, have thrown much light on the subject. Attention has been drawn to them in this country by Faraday, some of whose illustrations we will use (here represented in tabular form due to difficulties in reproducing from the original - Ed).

A metallic ball electrometer is raised in an elevated position, then lowered, and by known means yields the degree of electricity which it has acquired in the atmosphere. As a general result, the electricity increases according to the distance from the earth's surface. A vertical change in the instrument at any distance alters the electricity, but a horizontal displacement does not do so. The annual and diurnal alterations in electricity are very remarkable. Contrary to all expectation, it attains its maximum in the coldest months, being least in amount in the hottest part of the year. The following relative numbers exhibit the different amounts of electricity in the different months of the year, as ascertained by observations from 1844 - 1848.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
605	378	200	141	84	47	49	62	70	131	209	507

It will be seen that the degree of electricity in the air in January being 605, that in June was only 47. The electrical changes during the day are illustrated in the following table.

A.M.	VI	VII	VIII	IX	X	XI	NOON
	17	27	36	27	20	14	12

P.M.	I	II	III	IV	V	VI	VII	VIII	IX	X	XI
	10	5	3	5	11	18	24	30	32	30	19

It will be seen from this table that the electricity is greatest in quantity at eight o'clock in the morning, and at nine o'clock in the evening. The nature of the wind makes a decided alteration in the amount of electricity, as will be seen by the following table.

NNE NE	ENE E	ESE SE	SSE S	SSW SW	WSW W	WNW W	NNW N
139	184	312	261	243	220	272	102

Hence the amount of electricity in the air is greatest when the wind is from the SE to ESE, and from WNW to NW; whilst the least quantity of electricity is from N to NNW. The state of the weather seems to influence materially the quantity of electricity, as is shown by the following observations.

Month	State of the Sky		Month	State of the Sky	
	Cloudy	Clear		Cloudy	Clear
January	268	1133	August	56	64
February	220	493	September	42	76
March	129	261	October	75	168
April	71	149	November	109	220
May	46	63	December	181	571
June	36	37	Whole Year	106	273
July	41	35			

It is therefore, obvious that there is much more electricity in clear than in cloudy weather. In fog or snow, the amount of electricity is always great, approaching the mean maximum of the cold months, and double that of rain :-

In fog - 64 In snow - 64 In rain - 35

ELECTRICITY - Contd.

The electricity of the air is generally positive, or is that obtained by the excitation of glass with silk; in only 25 cases in 5 years did Quetelet find it to be in a negative state, and then those exceptional cases were either immediately before or after rain or a thunderstorm. These interesting results of Quetelet, obtained by careful investigations at Brussels, form the first precise knowledge which we possess of the electricity in the atmosphere. His results may be modified for this country by repetitions of observations here; but as they form the only precise data we now possess they are of interest as enabling the observant farmer to notice whether his experience in any way connects itself with the phenomena now described. In fact, the knowledge of the philosopher is much too limited on this subject, to allow him to hazard any speculations. It has indeed been conjectured that the celestial space is positive to the earth while the globe is permanently negative to it: these terms being used in the peculiar sense of Peltier. In consequence of this state, all pointed objects, such as trees and human beings, are streaming forth their peculiar electricity into space. When local disturbances happen, as, for instance, when an electric cloud charged with electricity of the same nature approaches the earth, this streaming into space is disturbed, and this disturbance of our electrical relations with regard to space, cause those peculiar uncomfortable feelings which so often occur previous to thunder-storms. But even this is a hypothesis of a very vague character. After having given this general account of the electrical state of the atmosphere, it is scarcely necessary to enter into the details which would be necessary to explain the more striking, but really less important, phenomena of thunderstorms, because their effect on vegetation is entirely problematical. It is true that, after a thunderstorm, vegetation springs into an unwonted state of activity. But this is due, not to the electricity itself, but to its concomitant circumstances. Such storms usually occur after long drought and sultry weather, when the air is charged with carbonic acid and ammonia, the constant products of organic decay. The fiery flashings through the air also produce some nitric acid which, combined with the ammonia, form a strong nutriment to plants. These, refreshed by the rain thus charged by this powerful fertilizing ingredient, spring into vigorous action, and the improvement in their growth, frequently ascribed to electrical action, is in reality due to these accompaniments of the storm.

(All that now needs to be determined is whether good DX conditions depend upon a surplus or a deficit of "electricity" in the air, if the former then, perhaps we should call "CQ DX" at 8 o'clock (GMT, of course) on a January morning when the wind is ESE or SE with a clear sky, or, if the latter, try listening in June around 3 p.m. when the wind is N or NNW when it's cloudy. -"Hog").

QUICK-QUIZ (Based on an idea in "Mathematical Puzzles and Diversions" by Martin Gardner). A radio amateur buys all his components from 2 shops, one to the North of his QTH and one to the South. He decides to share his custom between the two shops by catching the first 'bus (Northbound or Southbound) that comes along outside his QTH. The buses both run at 15 minute intervals and never arrive at the bus stops at the same time. He finds that he is visiting the Northern shop a far greater number of times than the Southern one - Why??? No prizes for this one but you might drop the answer in the post to the Editor with your next "Mercury" contribution!.

"STOLEN FROM THE RNARS NEWSLETTER."

From a Liverpool newspaper - "No water - so the firemen improvised". Could this have been a Catterick Detachment during the recent Fireman's strike???

A photograph shows a radio controlled duck (yes! - the feathered variety) on display at the recent RNARS Mobile Rally. There is no truth in the report that it was later shot by a poaching "Squaddie" from Aldershot!.

We take this opportunity of extending a hearty welcome to the following enlistments and re-enlistments and trust that their stay will be long and happy.

DAVID JOHN ARCHER - G4GKE/RSARS 0941 - 16 CULLINGHAM ROAD, IPSWICH, SUFFOLK. David reports that he was 24087401 Sigmn Archer. D.J. and joined Royal Signals as a Boy Entrant at Troon on 11th September 1966, moving to Catterick in late 1967 where he served his (Amateur Radio) time as an SWL with Ron Cox at G3CIO. He was later posted to DL-land and joined 12 Brigade HQ & Signal Squadron in May 1968 where he met (then) Lieut. Tony Sugdon who was active as DL5ZS. He spent four months with the K.O.S.B. when he was with 523 Signal Troop. Posted back to 'G' in late 1971 he joined 5 Brigade at Tidworth before spending 4 months in Northern Ireland. David finally obtained his discharge by purchase after serving as Driver/Operator BII. His interest in Amateur SWL-ing was carried on in DL-land by listening on a C11 when on exercise. Marriage intervened for a while, but after meeting G4BJO (who force-fed him with RAE statistics) the RAE was passed in May '77 and the Morse Test was "overcome" at Humber Radio during the honeymoon period of his second marriage. Other interests include cars and model railways. He would very much like to contact Tony Sugdon again.

MICHAEL PLUDEK - RSARS 1363 - 18 PURKESS CLOSE, CHANDLER'S FORD, EASTLEIGH, HANTS. SO5 2ED. Our first re-enlistment for this issue. Mike was previously a member of the RSARS having served with 11th Signal Regiment (1965), 24th Signal Regiment (1965), 640 Signal Troop at Blandford (1966), 30th Signal Regiment, Blandford (1966) and 644 Signal Troop at Nicosia (1969). Mike is now out of the Service and is busily engaged in the small boat industry. Mike is also a member of N.F.S.E. (which your Editor must admit, is an 'unknown quantity' to him!).

JOHN COOK - GM3OPW/RSARS 1365 - 6 CHEMISS ROAD, METHILHILL, FIFE, SCOTLAND. John, who is also a member of the Glenrothes & District Amateur Radio Society and the R.S.G.B. was once known as 22725746 Sgt. J. Cook who served as an Operator Wireless and Line Instructor at 3 Training Regiment, Royal Signals at Richmond and Catterick from 1952 until 1955. He was a member of the Catterick Garrison Amateur Radio Club and mentions G3CIO and G3JNF. (The latter call is an 'unknown', to the Editor - any further info, John?). He then completed 5 years with Royal Signals T.A. in Chesterfield, Derbyshire. John is interested in all facets of Amateur Radio from 160 Metres to 432 MHz and he is equipped for all these bands both Fixed and Mobile. The main interest at the time of joining is the use of phased verticals for 20, 15 and 10 using 12AVQ high gain verticals. He is also an avid 2M FM Mobile operator. So, whatever your band, you should bump into John somewhere.

WILLIAM JONES - G3JXL/RSARS 1366. It. is regretted that we do not have Bill's present address at the time of typing, but it is in the Richmond (Yorks.) area, and Bill will be known to many members as he is another 're-enlistment'. Very active Society member in the past and a most welcome contributor to 'Mercury', Welcome back, Bill.

JACK BARRETT - G4GQV/RSARS 1367 - 402 BLACKBURN ROAD, ACCRINGTON, LANCASHIRE, BB5 1SA. Jack passed his RAE in 1970 but was not licensed until December 1977. He is active using an AR88 (nice receiver, Jack, providing you don't want to carry it too far!!), and a KW Vanguard, running 50 Watts. Interested in electronics in general and photography, Jack saw service from December 1942 until December 1944 with OSDEF (Orkney and Shetland Defence Force) later moving to India with HQ Southern Army Signals in Bangalore and HQ Southern Command Signals in Poona between January 1945 and May 1947.

LIEUT. COL. (Retd) RONALD T.W. PAIN - P29NRP/RSARS 1368 - P.O. BOX 6124, BOROKO, PAPUA, NEW GUINEA. All the membership application paperwork for Ronald was kindly completed by Ken Taylor, RSARS 1176. It would appear that Ronald joined Australian

WELCOME - Contd.

Signals in 1934 and was commissioned in 1936. He served in the U.K., Middle East and New Guinea theatres of war between 1939 and 1944. He re-enlisted after the war in the Indian Army and was appointed a Company Commander in XIV Army Signals, which later became Malaya Command in Kuala Lumpur. Served for a while as 2 i/c to Lieut. Col. John McNeil and, when Col. McNeil returned home, Ronald assumed the command. He was discharged in 1945 and returned to Sydney. He is interested in contacting any RSARS members, particularly those overseas.

KEVIN PHILIP HAND - G8NTJ/RSARS 1369 - SOUTHLYN, QUARRY BANK ROAD, MARKET DRAYTON, SALOP, TF9 1DR. Kevin has served with HQ 30 Engineer Brigade (V) TAVR Signal Troop as 24426057 which has since been renamed HQ 30 Engineer Group (V). During this time he completed a 2 weeks Recruit Course at 11th Signal Regiment. He passed C & G 765 (RAE) in May 1977 and his licence was issued in August of the same year. At present he is busy building the "Wireless World" 2 Metre synthesised rig. The shack contains at the moment a Lafayette HA600A RX, a home-brew 2 Metre/28 MHz Converter and a "Practical Wireless" 1 Watt phase modulated 2 Metre TX. The antenna system consists of a home-brew 4 element beam and a J-Beam Halo. The QTH is a good one from the Repeater point of view, apparently, as Kevin reports that the following are 5/9 or better: GB3BM (and sometimes GB3SN), GB3MH, GB3HH, GB3MP and GB3PI although the last two are often unusable being on the same frequency. Other interests include Sailing, (worked three seasons as a Tidal Waters Dinghy Instructor), Driving (12 Car Rallies, Navigational Competitions, etc.) and Electronics (Digital and Analogue).

IAN McGOWAN - G8OFZ/RSARS 1370 - 1 LOVELACE WAY, FLECKNEY, LEICESTER, LE8 0TT, LEICS. Ian is a S/Sgt (F of S) with 87 Squadron, 38th Signal Regiment (V) having transferred from R.A. TA in 1967. He was licensed as G8OFZ in September 1977 and is currently active on 2 Metres Mobile using a modified G.E.C. RC600TR Radio Telephone on S0, S20, S21, S24, R4 and R5. In civilian life G8OFZ is an Assistant Executive Engineer with Post Office Telecommunications and is a member of The Institute of Post Office Electrical Engineers. When not working or on the air, the main interest is playing Squash purely at a "For Exercise" level.

MICHAEL WALTER WRIGHT T.D. - G8NWU/RSARS 1371 - 49 THIRLMERE DRIVE, LOUGHBOROUGH LEICESTERSHIRE, LE11 3SX. Michael has served in Royal Signals TA and TAVR since 1959 as a Sgt Radio Technician until 1968 with 64th Signal Regiment. From 1968 onwards (he was commissioned in October 1968) he has served with 38th Signal Regiment (V). He was licensed in August 1977 as G8NWU and is at present running a Trio 7500 both as a Mobile and a Base station. By the time this is read he should have a 6 element quad and rotator at a height of about 36 feet. This will have replaced a vertical 4 element Yagi at 16ft which is pointing N/NW towards GB3HH. Other interests include Stamp Collecting.

MICHAEL LEE - G3VYF/RSARS 1372 - 11 STURROCKS, VANGE, BASILDON, ESSEX, SS16 4PQ. Older readers may well say "I recognise that call-sign" and, doubtless, they will. Mike was a previous member of the Society and was known "on the books" as RSARS 0327. We have no up-to-date information of what is happening around Vange these days, but take this opportunity of welcoming yet another "re-enlistment".

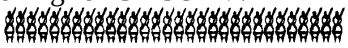
CHRISTOPHER IAN HARMAN - G8PBT/RSARS 1373 - 286 CAMROSE AVENUE, EDGWARE, MIDDLESEX, HA8 6AQ. Christopher's application was dated 5 May 1978 and the details given are rather brief. On 2 September 1964 he was with 11th Signal Regiment, moving, in April 1965, to 261 Signal Squadron (AS) and then a year later to 262 Signal Squadron. He apparently finished his time in 1967 at 24th Signal Regiment. Welcome, on parade.

DAVID GEORGE CRANE - G8NGD/RSARS 1374 - OXNEAD HOUSE, OXNEAD, NORWICH, NR10 5HP, NORFOLK. David mentions that he is an Officer Cadet with Oxford University O.T.C. but gives no further details.

WELCOME - Contd

L/CPL JOHN SLONE - ZL1BMG/RSARS 1375 - THORNT0N ROAD, R.D.l, CAMBRIDGE, NEW ZEALAND. John served in Royal Signals from 1953 until 1956 and was attached to HQ Squadron, Royal Horse Guards, Combermere Barracks, Windsor. No other details regarding rig, operating times, etc., but he did have a spell in the UK, in the Stoke Poges area, until July this year. John is a member of both the N.Z.A.R.T. and The Ex-G Club.

STANLEY GEORGE CASPERD - G3XON/RSARS 1376 - 14 DAGDEN ROAD, SHALFORD, GUILDFORD, SURREY, GU4 8DD. Stanley is also a member of the Guildford A.R.S., R.N.A.R.S., R.S.G.B., M.I.E.E. and M.I.E.R.E. From 1939 until 1946 he served with the Directorate of Scientific Research (DSR) as an Experimental Officer. He worked in close liaison with both Royal Signals and the Royal Navy as well as the War Office and Ministry of Supply on many projects including land and magnetic mines, transmission of signals by radio, cables, etc., including measurement, assessment and activation as required. He is active on all HF and VHF Bands and is very interested in home-brew but "accepts (and uses) some commercial equipment". Stan operates Mobile on Top Band, HF and VHF. Other interests include Amateur Dramatics (Sound effects, etc.) and photography, both Still and Cine. He is particularly looking for GM3OYV.



WARC '79.

(Last issues Editorial contained a reference to this article regarding the state of our hobby after WARC '79. G3EJF is an amateur of long standing who takes his hobby very seriously and who has taken time to seriously consider the possible outcome of the forthcoming Conference. You may not agree with his comments (and if you don't why not drop the Editor a line saying why?) but you must surely agree that this could be a critical time in the history of Amateur Radio. Have YOU given it as much thought as G3EJF??? - Ed.).

Have you decided what hobby you are going to take up in a couple of years time when Amateur Radio as we know it ceases to exist? So far none of the relevant organisations have done anything other than make vague warning noises about the outcome of the World Administrative Radio Conference. Perhaps they don't wish to spread alarm and despondency or is it that they are unwilling to face up to their own demise?

It seems to me that there are two questions; are we likely to keep our share of the frequency spectrum and do we deserve to keep it? To both of these I would answer NO, if you can spot the flaws in my reasoning I hope that you are right and I am wrong.

Amateur Radio is essentially a hobby of developed, science based societies. The vast majority of members of the U.N. are the emergent nations, underdeveloped countries, call them what you will, where the only amateurs are expatriates whose presence is tolerated but who have little or no say in government. This immediately demolishes the arguments of those who quote the total world population of amateurs; they are concentrated in countries such as the U.S.A., Japan and the U.S.S.R. How many amateurs are there in Ethiopia, the Malagasy Republic or the South Yemen? Yes, they say, but look at the purchasing power of the amateurs, all that money being spent on new equipment. Peanuts, compared with other purchasers of electronic equipment, Citizens Band in the U.S.A. is a far bigger market for both equipment and publications than the same countries amateurs. Notice how many component shops have changed over to Hi-Fi - that's where the money is. Did you see in RadCom that the RSGB were bemoaning the sale of Japanese 144 MHz equipment for military use in the Middle East? How naive can you get, these people are in electronics to make money and would not turn a hair if all the amateurs in the world boycotted their equipment. Besides, the average amateur takes care of his equipment once he has forked out all that money for it, the average soldier is just as likely to drop it off a truck or stand on it. Can't you hear those cash registers ringing? No, the population and economic arguments are self delusion.

WARC '79. - Contd.

If we accept that the majority of the voting nations know nothing of amateur radio what chances have we of convincing them of its benefits, which we usually classify under the heading of self-training, communication with other people, investigation and experimentation. Judging by the results of the Space Communications Conference in 1971 many of the nations with large amateur populations are far from convinced. In any case, how valid are our claims bearing in mind that the radio frequency spectrum is of finite size?

SELF TRAINING - The vast majority of amateurs are radio telephony operators, in other words they know how to use the machine but are vague about its technicalities. Any worthwhile training organisation can produce better radio telephony operators in a matter of weeks. As for the telegraphists, a quick tune across the non-amateur HF spectrum during normal working hours will show how few hand-speed morse stations there are nowadays. So, as operators, we have little to offer.

INTERCOMMUNICATION - The interationa1 friendship angle is vastly over-rated, most of our overseas contacts are of the rubber-stamp variety and in any case it is not the ham in the street, not even the man in the street, who determines international relations. We are often reminded that we live in a democracy; the majority of member states of the United Nations have authoritarian regimes which would not wish their people to communicate freely. One member of our Society seconded to a certain country was refused an amateur radio licence with the words "If we gave you a licence our own people would want licences and we can't allow that on security grounds"

INVESTIGATION AND EXPERIMENTATION - What proportion of active radio amateurs actively carry out a reasoned programme of experimentation? Many do none at all, they use commercially built equipment which they send back to the dealer when a fault occurs. Others build pieces of equipment to published designs, this is no more experimentation than your wife following a knitting pattern. Certainly there are amateurs doing worthwhile work but they are only a very small proportion of the whole. Can it honestly be said that their work is of greater value than that of the many people whose hobby involves logic circuits; the amateur computer hobby is growing very rapidly, and they do not require part of the precious spectrum. We must try to equate the technical work done by amateurs with the amount of the spectrum occupied by amateurs; I find this impossible to do.

Having dealt with the arguments for and against our continued existence let us see what opposing forces we have to contend with. Some optimists suggested that the use of satellites would reduce the pressure on the HF spectrum; this has not happened. Any professional communicator will tell you that traffic expands to fill the channels available for its transmission. So we use the satellites to bring us colour pictures of the World Cup in Argentina and we either relegate the HF equipment to lower priority traffic or sell it to a new nation. What we do NOT do is close it down and scrap it. It is not possible to deal with every other user so let us just consider two services, HF broadcasting and mobile radio. In the November 1976 "Wireless World" Jim Vastenhoud of Radio Nederland showed that the present frequency allocation to broadcasting within the HF spectrum was 2350 KHz which, on a basis of 5 KHz channel spacing, gave some 400 channels at high sunspot numbers and some 300 channels nearer the sunspot minimum, this frequency space being LESS than that allocated to radio amateurs. He went on to suggest that it would be reasonable to expect the present allocation to be doubled in view of the increasing number of countries operating high power broadcasting transmitters. Many new nations consider a Short Wave broadcast service to be as essential to their nationhood as their own airline. We have all said that this Short Wave Broadcasting is a waste of time and that nobody listens but we must accept the world as it is, not as our prejudices would like it to be. Governments from whatever motives want to broadcast their ideas, propaganda, call it what you will and we just have to accept it. The same issue of "Wireless World" contained Part 1 of a review of VHF and UHF Mobile Radio communication in the UK and what applies here will also apply to other advanced countries. The author, D.A.S. Drybrough

WARC '79 - Contd.

shows that the number of stations increased from under 2,000 to over 100,000 in the 25 years from 1950. The number of base stations per available channel has varied between 8 and 17 and was about 11 at the end of 1975. The vast increase in numbers of stations has been accommodated by reducing channel spacing but a further 44 MHz of allocation would be necessary to reduce occupancy to 8 base stations per channel. It may well be argued that further channels would be made available if SSB was used instead of FM. However, users are now demanding, or are being offered, data and facsimile facilities which won't decrease bandwidth will it!!?

Finally, let's consider each band in turn and see what the crystal ball turns up.

1·8 MHz - Yes, possibly we may be allowed to keep an allocation near this frequency since much of the short-range shipping traffic has transferred to VHF.

3·5 MHz - Vastenhoud, referring to the congestion on the lower frequency broadcast bands, states that a waveband in the vicinity of 4 MHz is badly needed.

7 MHz - Vastenhoud again - "The 7 MHz Band, now prohibited for broadcasting into the American region, should be made available on a world-wide basis just like the other broadcasting bands".

14 MHz) - Considerable pressure from broadcast and other users.

21 MHz)

28 MHz - Yes, after all, it's not much use to the professional communicator being neither a truly ionospheric nor truly direct waveband.

70 MHz) - Pressure from military users who have bought Japanese 144 MHz transceivers, from

144 MHz) business mobiles and public services, to say nothing of the Citizens Band lobby.

420 MHz)

Above) - Despite increased occupancy for microwave telephone trunk circuits, etc., we may be
GHz) able to hang on to some of our allocations.

Summing up, we might just keep Top Band, or part of it, 10 Metres, and some of the microwave bands. Even this assumes that the majority of UN members can be convinced that there is a place for amateur radio in 1979.

Is there such a place in the last quarter of this Century?. Amateur radio has changed, compare a current RADCOM with the BULL of 25 Years ago, it is now a fun hobby and the whole ethos of the advertising is based on the need to have the latest model and compares with Hi-Fi and Caravan magazines. At the dictates of the suppliers we have become channelised and work through repeaters with the minimum of individual effort. Not only are beams bought ready made, ordinary wire dipoles are sold "off the shelf". We have allowed ourselves to become mere users of commereia1 equipment because technology has advanced so fast that the amateur cannot keep up, nobody has the time to build synthesised broad-band auto-tuned equipment and to continue to use the techniques of the '40's is hardly a scientific hobby.

Don't get me wrong, I enjoy my hobby and find it great fun, but I find it impossible to justify other than on the grounds of its amenity value. The majority of the nations voting in 1979 consist of people who are interested in finding enough to eat; amenities mean little to them.

Yours Aye Johnny, G3EJF

SAFETY FIRST.

We have all had something "half-inched" at some time in our lives, but if your gear was stolen from the shack, could you give a good description of it?. More important, could you give the serial numbers of your equipment?. Of course, we all hope it never happens, NOW, and keep them somewhere safe.

OSCILLATORS.

H.L. WILLIAMS G3WZS/0781.

(In the following article the author has covered the subject of oscillation in an informative, easy-to-read way designed to give that extra bit of technical information to the reader who is interested in rather more than just following a circuit diagram. - Ed.).

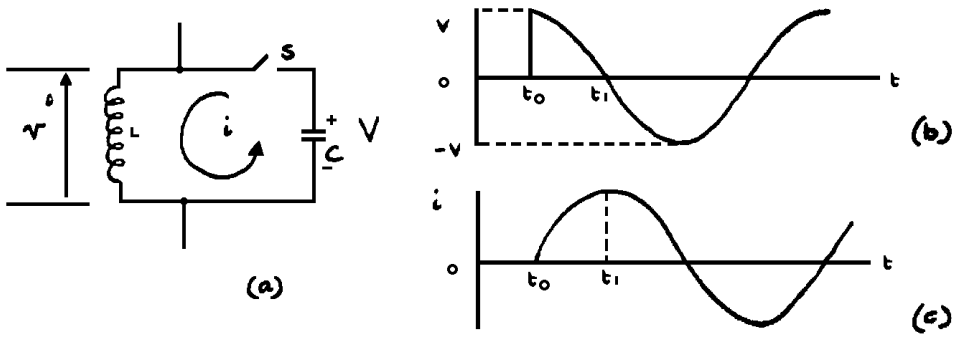
INTRODUCTION.

An oscillator generates its output through the conversion of electric energy at DC to electric energy at a high frequency. They are classified in terms of their output waveform, frequency range, components or circuit configuration.

Oscillators use both active and passive components. The active device provides the energy conversion mechanism and the passive elements normally determine the frequency of oscillation and stability. Capacitors used in oscillator circuits should be of high quality. Because of low losses and excellent stability, silvered-mica or ceramics are preferred. Frequency drift is greater for low-Q circuits; therefore loaded Q's should be high - usually the loaded Q is determined by coil or transformer losses.

In addition to frequency stability, performance measure may include amplitude stability, output power and harmonic content. If the output amplitude is to be maintained at some desired level then AGC can be used. Generally an oscillator is required to produce a clean and stable waveform with the power level being raised through successive stages of amplification.

The active devices in a sinusoidal oscillator may be biased Class A, B or C. Class A outputs are virtually free from harmonics whilst Class C operation is the most effective but is also the largest producer of harmonics. By correct filtering the required harmonic can be selected.



An elementary oscillator is shown in (a). The inductor and capacitor are capable of storing energy, i.e. C stores energy in its electric field whenever there is a voltage across its plates, and L stores energy in its magnetic field whenever current flows. Both C and L are considered lossless and energy can be introduced by charging C to voltage V. With S open C cannot discharge and so i = 0 and v = 0.

With S closed at t = 0, v rises from 0 to V as shown in (b), and is across L and C. According to Faraday's Law if there is a voltage across L then the current must be changing. This is shown in (c) and represents electrons leaving the bottom plate of C, flowing through L and altering the upper plate of C, i.e. C loses charge and energy, the energy being transferred to the electric field of L by the flow of current.

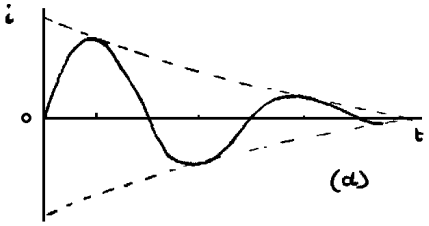
As the charge and v decreases, this means a lower rate of change of current through L. At t_1 all charge has been removed and v = 0, so that i has reached its peak value and all energy is stored in the magnetic field.

OSCILLATORS - Contd.

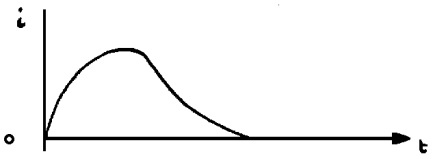
The current for $t > t_1$ charges C with a polarity opposite to that of (a). Thus i begins decreasing and v increases in the opposite direction. The frequency of oscillation is given by :

$$f_o = \frac{1}{2\pi\sqrt{LC}}$$

The circuit of (a) is not practical because even if lossless components were available we could not extract energy without introducing resistance. This would produce DAMPED oscillations as shown in (d). If we remove too much power then the energy may be completely consumed before the first cycle of oscillation, i.e. the OVERDAMPED response of (a).

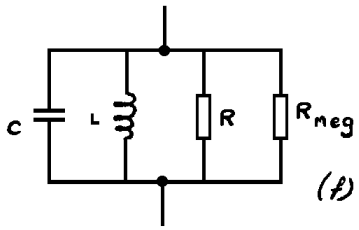


(d)



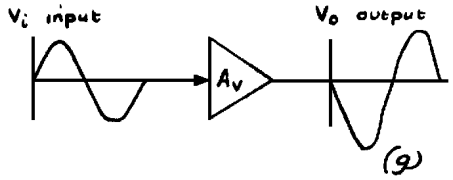
(e)

It is possible to supply energy to the tank for all losses, thereby maintaining oscillations of constant amplitude. Since energy lost is related to positive resistance, it follows that energy is gained if an equivalent negative resistance were available. See (f).

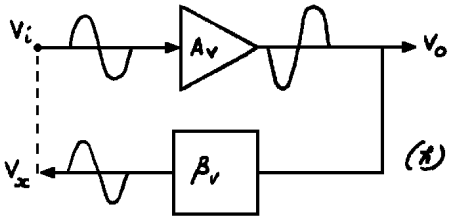


(f)

Certain devices, such as tunnel diodes, exhibit, over a limited range of their characteristics, an increasing current for a decreasing voltage, i.e. the energy supplied by the negative resistance to the circuit actually comes from the DC source that biases the device in its negative resistance region. Another technique to maintain oscillations is to use positive feedback as shown in (g) and (h). The amplifier of (g) is phase-inverting. In (h) the feedback path provides a further 180° phase-shift and some attenuation so that Vx can be in phase with, and equal in amplitude, to Vi.



(g)



(h)

Hence Vx can be connected directly to Vi and the applied input signal can be removed.

Note that the overall voltage amplification from Vi to Vx is 1 and the total phase shift is 0°. The product of Av and Bv is called the Loop Gain.

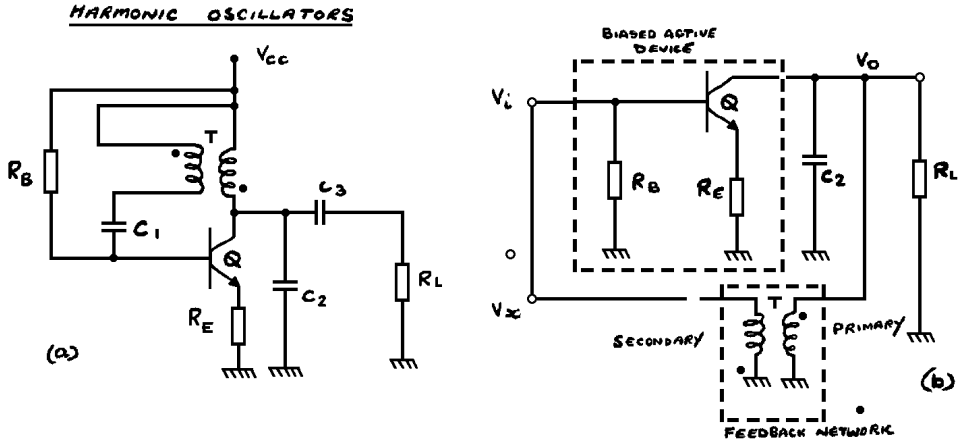
$$B_V = \frac{V_X}{V_O} \qquad \text{and} \qquad B_V A_V = \mathbf{1\angle 0^o}$$

The last equation is the BARKHAUSEN CRITERION FOR OSCILLATION and when satisfied the closed loop gain is infinite, i.e. and output is produced without an external input.

The criterion should be satisfied at only one frequency, the frequency at which we want oscillations.

OSCILLATORS - Contd.

In a practical circuit the oscillations are self-starting through the mechanism of noise. Noise is composed of all frequency components so that, at switch-on, there is already some energy present at f_o. Only at this frequency is the loop-gain slightly greater than unity and the loop phase shift 0^o. The magnitude of the f_o component is amplified each time it completes the loop. It soon becomes the dominant component and eventually is limited by circuit considerations, e.g. saturation, cut-off, etc.



HARMONIC OSCILLATORS

Typical feedback oscillator layout is shown in (a) along with its AC equivalent circuit (b). The DC operating point is set by Vcc, Rb and Re.

Transformer T provides a 180^o phase-shift. Re stabilises the gain by negative feedback. C2 and the transformers equivalent inductance make up the resonant circuit. Feedback factor Bv is equivalent to the transformer tuns ratio.

If the load is resistive then the Q and loop gain, are affected and this must be considered when the minimum gain for oscillation is determined. If the load has a capacitive component then C2 should be reduced.

(To be continued)

DID YOU KNOW?

The ARRL holds a handsome carved trophy which will be awarded to the first amateur making contact between Earth and Mars (that's the other Mars - not the one mentioned in the foregoing article!!).

DO YOU COLLECT STAMPS?,

A note from Barry Scott, G3YEU/DA1BS/RSARS 0625 mentions that he has received a letter from VU2BK (a lapsed RSARS member, but one that we hope will rejoin us before long) asking if members who are stamp collectors would care to swap stamps (mainly English, Dutch and American Commemoratives) for similar Indian issues. VU2BK can be often heard on 15 for which he has a FB antenna layout and he is always pleased to work G stations. If you would prefer to write, drop a line to : Major General R.Z. Kabraji, 55 Anand Park, Aundh, Poona 411007, India

A HIGH POWER VISIT. G3EKL/0046.

It was another unexpected 'phone call one evening that set me off on a very pleasant trip. I was asked if I would like to see over the local IBA TV transmitting station - I jumped at the offer!.

And so, in the company of G2HNL and G3DMK, in the middle of Summer 1978 (June 1st - do you remember that beautiful week?) we headed toward Bilsdale. Bilsdale, a remotely controlled unmanned station located some 12 miles to the East of Northallerton high up on the Yorkshire Moors, is readily identified by its large 7' diameter, 1000' high mast which frequently disappears into the clouds. This particular day there were no clouds and the mast beckoned us temptingly.

I say this because the way to the station is not signposted, apparently to satisfy the local National Parks committee who seem to think that a signpost at road level would detract from the beauty of the area!!.

So, with the aid of a map that didn't show the station, three pairs of eyes watched the mast as we weaved our way to the station. It was soon agreed that one pair of eyes should watch the road - it was safer!!.

Meanwhile 'DMK and 'EKL looked in vain for a signpost (we didn't know that there wasn't one at that time!). As the great finger in the sky slipped behind us we decided to stop and recheck our bearings - no doubt the mast was behind us, equally we were confident we hadn't passed an IBA/BBC sign. By luck we had pulled into a farm entrance and looking carefully into the hillside we thought we could see a track wending its way up the side of the valley. Looking around we saw a farm track that seemed to connect, clearly marked "PRIVATE - Entrance to ..... Farm only". We looked again but could see no other road or track so decided to investigate. The B 1257 road we were then on was at 460' ASL, the "PRIVATE ...." sign leered at us and we moved in.

It proved to be the way and, with a mixture of farm track, tarmac surface, 'S' bends and cattle grids, we climbed 800' in 1000 yards and were very glad of the Summer day.

And so to the site, located on a small plateau on top of Bilsdale West Moor at 1260' ASL and commanding an inspiring view. The station, being in a National Parks area, has been built in local stone and is very pleasant to the eye. Spotlessly clean, both inside and out, the IBA section of the site houses two 25 KW video transmitters, two PYE 5 KW FM transmitters and two Marconi 1KW FM transmitters together with the associated monitoring and telemetering equipment necessary to control the two services, "Tyne Tees" ITV and "Radio Tees", from a remote point. The TV service is provided, monitored and controlled from BURNHOPE, where GB3NEE and GB3TW are located, together with the 405-line Tyne Tees service, some 59 miles away, whilst Radio Tees is watched over from STOCKTON-UPON-TEES, 16 miles to the North. The TV service is received at Bilsdale by micro-wave link and, after down-conversion to video and audio, signals at something less than one Watt are fed into reconstitution circuitry which corrects any picture variation or distortion and, once perfect, then passes to linear amplifiers until 10 Watts is available to drive the PA. Up to this point everything has been solid-state, all circuits neatly presented on P.C.B's in sliding drawers which are accessible top and bottom whilst actually in use. The PA is a massive water-cooled klystron operating across a 20 KV supply and producing 20 KW at peak. The outputs of the two video transmitters are combined, together with the outputs of the two audio transmitters producing 40 KW of video and 10 KW of audio which is then passed by co-axial cable (two feet in diameter!) to the BBC aerial combining room. The feeder route is not very long, but even so the reflected power from the main video transmitters is minute, one transmitter showed 200 Watts and one 60 Watts I wish I could get as low an SWR!. I was assured that as low, if not lower, reflected power level was usual between the combining unit and the antenna proper - and that is about 1000 feet of feeder!. There is certainly little wasted effort and, together with the antenna gain, an ERP of 500 KW is radiated in an omni-directional pattern.

The "Radio Tees" stereo transmissions are received from Stockton over separate radio circuits, one per stereo channel, checked for purity, combined and fed to the 1 KW transmitter which in turn

A HIGH POWER VISIT - Contd.

feeds a stacked Yagi array beaming on Teesside. The array, nearly 900 feet up the mast looks very small from ground level but has stood up well to the wicked wind and icy conditions prevalent at that elevation.

Because of the remoteness of the location, plus the fact that it is in National Parks territory, the mains feed to the station is buried for some miles and isn't duplicated. Instead a "Stand-by" generator is "on site", designed to run itself up and automatically take load within a minute of a mains failure - impressive indeed, particularly when one realises that the generator is a 1 Megawatt 11 KV gas turbine set. The same machine will transfer the station back to the public supply twenty minutes after the mains have been restored - twenty minutes delay, just to make sure that the restoration is permanent.

This particular station, Bilsdale, is a BBC site and so the responsibility for the buildings and general maintenance is that of the Corporation, whilst the IBA hall is rented from the BBC. Separate 11 KV mains transformers feed the two transmitter halls each marked "IBA" and "BBC" - the transformers not the halls!. Doubtless, each has its own monitoring system to keep the two organisations solely independent of one another!. Elsewhere in the country, now that a common transmitter site pattern has been accepted for the UHF services, one may find an IBA station renting to the BBC. Whoever owns the site is responsible for the buildings, services and the mast - a vital part of the station. But back to Bilsdale and the mast.

All the UHF Band IV TV antennas are totally enclosed against the weather - that's BBC1, BBC2 and IBA with space available for the fourth channel once a decision has been made!. This particular mast is the second highest in the UK in terms of height above sea level, the top being slightly lower than that at the Winter Hill site on the West side of the Pennines. The VHF Band II aerials for "Radio Tees" and "Radio Cleveland" are also on the mast, together with various microwave dishes which are totally enclosed with what looks very much like a meringue topping on each dish!. It is reputed to "give" up to two feet from the vertical at the top - we were NOT allowed to prove this. The erection engineers have the luxury of a lift to get up and down the mast, which operates within the enclosed mast casing.

All in all we had a very interesting couple of hours and were most grateful to the two engineers who so kindly looked after us.

Ray, G3EKL

P.S. For those readers in North Yorkshire served by the Bilsdale transmitter, any connection between the four hour transmission failure on the next day and our visit was purely coincidental - it really was a NEEB overhead route failure - as reported in the local press.

EVEN MORE ON THE B2.

I find it difficult to resist flattery of Mr. Brown and his B2 (your issue 7/78, page 6 refers). From 1949 to 1968 as an impoverished operator, I possessed only the B2, yet won the RSARS Senior CW Award Shield on it, worked everything, and was also FOC on it. Nothing approaching the fun I had with it has ever entered my shack since!.

The final set-up was as follows :

1. The set was totally screened in a biscuit box, with a trap-door for tuning.
2. I constructed an ECO VFO in a similar box and keyed its HT via a relay.
3. HT keying of the EL32 HT+ line also cut off the 500V on the 6L6 anode, because this EL32 anode also fed the 6L6 screen.
4. A Keyer-control valve unit was made, with variable bias, for the HT+ line to the EL32 and this produced the well-known "note" (a "note" that has never been recaptured!).

EVEN MORE ON THE B2 - Contd.

5. An ATU and balanced antenna system was always used (the biscuit-box case being earthed).
6. A valve TR switch was always used for BK (near the tank coil).
7. VFO HT switch was foot-controlled.
8. As a RX I finally used an HRO with screen input and a new RF valve.
9. When the EL32 was not on "Xtal" it was switched for use as a buffer.

By the way, the CO is a Tritet, so it is not necessary to double in the PA, though I did this on 28MHz. The simplest and best modulation method was cathode mod. At the old "Key" spot which was normally shorted. I used one valve as in "Technical Topics" 1965, but I never enjoyed using a microphone. Some earlier experiences with the B2 had been gained with G6ZO during the war at Caserta.

48th DIVISION.

In a recent 'Mercury' mention was made of 48th Division and the question raised as to whether the Division ever served out of the U.K. Two very interesting letters have reached the Editor, one from Harry, G3NUR and one from John, G2YS which go to show that a lot of military history is tucked away in the individual RSARS archives - Ed.

From : Harry Tucker, G3NUR.

"The reason I am putting pen to paper is with reference to the small item regarding 48th (S.M.) Division on page 9 of the last 'Mercury'. I joined 48th (S.M.) Divisional Signals in 1937 at Cateswell House, Hall Green, Birmingham when it was a T.A. Unit. We were called to the colours on September 1st 1939. After two or three weeks we went down to the Newbury-Hungerford area for intensive training. I was then a member of 'G' Section attached to 99th Field Regt., R.A. and was billeted in the stables at Benham Park, about two miles from Newbury, from where we were 'bussed' daily for training at 48th Divisional Headquarters at Hungerford.

After Embarkation Leave over Christmas we entrained for Southampton and from there we landed at Le Harve. This was about the second week in January 1940. I am not certain of exact dates (I never kept a diary!). After a number of moves we ended up at a small village near the Belgian frontier. I think it was called Ostracourt near Orchies.

About a week after this we were informed that we were no longer part of 48th Division as the 99th Field Regiment R.A. had been transferred en bloc to 2nd Division, in exchange for one of 2nd Divisions' Field Regiments (I am not sure which one, now). From then on I served through to 1946 with 2nd Division. 'G' Section, in 1940, was composed entirely of 'Brummies' with the exception of about four Regular Army Reservists who joined us at Newbury. On return from France in June 1940 I was transferred to 'A' Wireless Section, where I stayed (except for a spell with 'C' Section for about a year). Also served in India and Burma but will say no more about that now, but I think that this will confirms that 48th Division certainly did serve overseas during WW II. I can't confirm the Div. sign as we didn't wear any Divisional identification at the time, presumably to confuse the enemy - Hi!." 73,

Harry, G3NUR.

From : John Swinnerton, G2YS.

"With reference to the note on page 9 of 'Mercury' 7/78, I can assure you that not only did 48th (S.M.) Division TA serve abroad but it was the first Territorial Division to join the B.E.F. in Dec./Jan. 1939/40. At the time I was Signal Officer of the 67th Field Regiment R.A. which sailed in January with the Division. The Regiment had one Battery of 18-pounders from WWI, and one Battery of 4·5-inch howitzers. In order to equalise the strength of the Divisional artillery two R.A. Regiments were swopped with one Regiment from each of 1st and 2nd Divisions because they had the new 25-pounder gun. Thus we found ourselves in '1 Div.' where the Adjutant was Eric Cole (SU1EC) who later became G2EC.

48th DIVISION - Contd.

The 'Blue Parrot' referred to became the Divisional sign a real bird of this plumage (whatever its botanical name) was a feature of the GOC's Mess at Hungerford. The Divisional Signals had a Training School in the grounds of the Wills family home at Chilton Foliat, and hither every day we were taken in buses from our outlying areas to spend the day in imitation Signal Offices - which were lean-to wooden sheds open on one side - bashing out landline traffic on a Divisional cable network. Wireless was not used except very occasionally, even when we received supplies of the "wonderful" new No.11 set, and it was this lack of W/T training (largely through fear of enemy intercept) which caused difficulties for us in the May 1940 campaign.

I often wonder whether anyone from 1 Div. or 48 Div. in those days, are still active in amateur radio. My Section Sergeant took it up when he retired - he died a few years ago. We also had in 48 Div. Dennis Flower, G8TO, of the brewing family. He was posted to 51 Division and was put 'in the bag' at St. Valery, and spent his imprisonment taking brewing exams!. I hope the above is of some interest.

73, John, G2YS.

MEASLES, MORSE AND MOBILISATION.

A.D. TAYLOR G8PG.

(Being another interesting episode in the Amateur Radio history of RSARS members. This time we hear from G8PG and how he got started. How about telling us how the bug bit YOU! - Ed.).

At least my excuse is original. It was measles that started it all for me!. The year was 1933, the measles attack was a bad one, and I was 13 years of age. In those days they made you lie in a darkened room as part of the treatment, and reading was forbidden. It was summer, and hot and sticky, but the worst part was the family wireless set - you could just hear it when things were quiet, but if a car passed - as it always did at the vital moment - it was drowned out. It was thus that the GREAT IDEA slowly took shape. Once I was better I would build a radio of my own, and be free to listen as I wanted.

Partial recovery came at last (it was two years before I was given a final clearance) and work began on the GREAT IDEA. I knew absolutely nothing about radio or electricity, but I had lots of copies of "Chums Annual", a famous boys book of the time, which carried a regular feature for radio constructors by a gentleman who signed himself "5YM". These taught me a lot. I also bought a copy of "Wireless World" (weekly, and four old pennies in those days) and didn't understand a word of it!. A later visit to the newsagent turned up the old "Popular Wireless" (later amalgamated with "Practical Wireless") and this proved a life-saver for the next couple of years. But what about the building of the receiver?

Oh yes, I was building receivers alright. There were quite a few components and valves lying around at home, brought over from the States by sea-going uncles, and I built circuit after circuit with them - but not a single circuit worked!. In my innocence I did not realise that the valves were 6 Volts filament bright emitters, and that they would just not work with a 2 Volts accumulator! At least this five months taught me how to read simple circuits and put them together, but none of the end products produced a single signal!. (This period probably also taught me the most important attribute of a good operator - perseverance against any difficulty). I had been saving pocket money, however, and my fancy had been taken by a "Popular Wireless" design called "The Iron Core 2", a simple BC receiver using a detector and one af stage. 1933 was the year that dust iron cores first appeared in quantity, and this design used a dual-range version.

Finally, on New Year's Eve 1933, the receiver was finished, Father Christmas having been fairly generous with hard cash that year!. At 2200 hours the miracle of modern technology was switched on. This time the 2V dull emitter valves settled down happily on 2V from the acc., and the second- hand 120V mains unit bought from the local radio shop for a quid was pushing out the necessary HT. And there was the old BBC long-wave transmitter Daventry 5XX belting in Switching to the

medium waves produced not only the BBC Regional station, but also strange voices talking in languages like French and German. At that moment a DXer was born.

Already my reading had shown the existence of the short waves, and within three months (probably as a result of some cash contributions to my birthday in March 1934) I was building my first sw receiver. Someone was flogging iron-cored dual-range coils cheap and I sent for one. The vendor knew what he was doing - the coil never worked on its lower range, and only worked for a short while on its higher range before it packed up. During the time it did work, Moscow and one or two others were heard on 19m, however, and the bug had bitten. Another receiver was built with a different coil, and by the Summer we were in business and beginning to log the real SW BC DX such as KDKA and other North Americans, a bunch of Venezuelans, the new All India Radio station at Bombay and so on.

At this point a word about equipment may be in order. Virtually all the SW receivers in use at that time were straight sets. The reasons for this were mainly economic, but also partly technical. The cost of a imported superhet - and virtually no commercial communications receivers were made in the UK at that time - was around £25. Very cheap by present day prices, but equivalent to eight weeks wages for a skilled man in pre-war days!. So the simple but highly effective straight set which could be built for a pound or two was the popular choice. Apart from cost, at that time the highest intermediate frequency in use in superhets was 465 KHz so images were a great problem even if an RF stage was fitted. Mixers also presented difficulties. The triode-hexode had not yet appeared, and mixer noise was a real problem. A further headache was that capacitor manufacture was far from perfect, and almost all cheap superhets suffered instability early in their life because of leaky decoupling capacitors (rotary wave-change switches were also in their infancy and could produce an endless crop of problems as they became worn). A simple but effective code was used to describe receivers on QSL cards and during CW contacts. The basic unit of the straight receiver was taken as the detector valve, designated 'V' this could have RF stages in front of it, and AF stages placed after it. These were designated by their quantity, zero being used if none were fitted. Thus 0-V-0 indicated a one valve receiver, 0-V-1 a two-valve receiver consisting of a detector and an audio stage, 1-V-2 was a four-valve receiver with an RF stage, a detector and two AF stages, and so on. For superhets one used 'SH' followed by the number of valves used, for example, SH6 indicated a 6-valve superhetrodyne receiver.

The detector used in the straight sets was always a leaky grid detector, fitted with reaction, probably the most sensitive detector ever invented. Fig.1 shows such a detector using a directly heated triode valve. In this circuit the valve actually performs three functions at once. The cathode (in this instance also the heater) and control grid act together as a diode demodulator, in which the audio variations produced by the incoming signal appear across the grid resistor (known as the "grid leak"). But as the grid is also part of a triode the variations of potential produced across the grid resistor are given AF amplification by the valve as well. LR and CR form

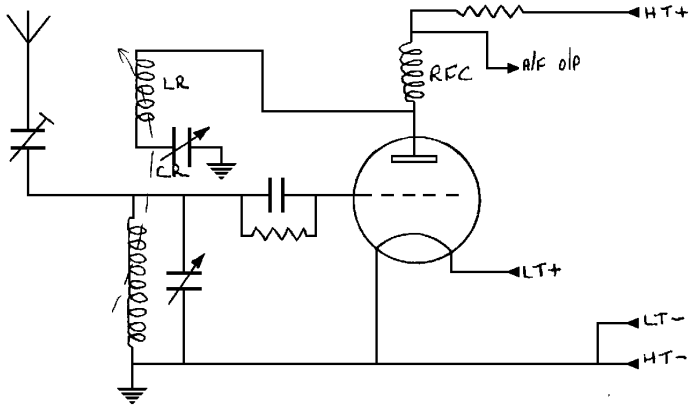


Fig. 1 Leaky Grid Dectection with Reaction.

a positive feedback reaction circuit, LR being coupled to the grid tuned circuit and being connected in the right sense to produce positive feedback. The amount of feedback was controlled by CR. As the value of CR was increased, feedback was increased and a negative resistance effect was produced in the grid circuit which overcame the effect of damping losses and caused the sensitivity and the selectivity to increase greatly. Maximum sensitivity for voice reception occurred just below the point at which the circuit starts oscillating. If the feedback is increased beyond this point the valve begins its third role, that of an oscillator, and if the grid circuit is detuned 1 KHz or so either side of the incoming signal the valve acts as its own BFO, thus allowing CW signals to be read. In the hands of a good operator this circuit can produce amazing results.

Returning to the main story, with the advent of the first reasonable SW receiver, serious log-keeping commenced. It is looking at these logs over 40 years later that allows the writer to state categorically that the first amateur signal he ever identified was G6JL (G6JL still appears in the latest Call-book - Ed.). This was on 40M phone at 1909 hours GMT, 26th April 1934 at RS 56!. Short-wave activity was nothing like it is now, and 1934 was a year of low sun-spot activity, so one really had to search for the stations. A log of 14 or 15 BC or Amateur stations often represented a good day's listening. But the DX could be winkled out and the country total slowly increased.

Construction methods were quite different in those days, particularly as far as impecunious schoolboys were concerned!. Electric soldering irons were in their infancy, and most construction was with components, which had screw terminals to which the wires were connected. Special components for SW work were also a problem unless you lived in London or Birmingham. Going into shops outside these areas and asking for, say, a 100 pfd air spaced variable capacitor was usually met with either incredulity or jeers!. The answer was to make do with the standard 500 pfd capacitors, preferably scrounged, strip them and reassemble them with half the number of plates, double spaced. Construction, apart from the lucky few with metal working tools, was with wooden front panels made from plywood, and a wooden baseboard. This lead to many hand capacity problems, especially with reaction circuits. In my own case I had not even got access to a good drill, so the holes in the plywood front panel were made with the aid of a red-hot poker heated in the kitchen fire. Looking back I now realise what a long suffering person my mother was!. Even so, the crudely constructed gear still worked, and bearing in mind that most SW stations, including BC stations, used only a fraction of the power that they do today, many present day owners of sophisticated communications receivers would be very happy to pull in some of the stuff that we used to hear. Aerials were also simple - a 50 or 75 feet end-fed wire hung to a tree or pole.

During 1935 a G station who was kind enough to QSL my listener report added a slip of paper suggesting that I buy "A Guide to Amateur Radio" from the RSGB. In those days it cost sixpence plus postage. This marked a turning point for me, as it opened up a new world in both the operating and technical sense, and my listening began to get more and more orientated towards the Amateur Bands.

One problem for the beginner in those days was sheer lack of contact with other enthusiasts, unless one was very fortunate. I started SW work at the beginning of 1934, and did not meet a fellow enthusiast until the beginning of 1936. It was certainly a case of soldiering on and learning the hard way. Morse is a good example of this. I had several goes at it during those two years, and at the beginning of 1936 had reached some amazing speed like 2½ words per minute. Then I read in the magazines that a Club was being formed in our area, came into contact with a number of other enthusiasts overnight and everything happened at once. Within 8 weeks I was a member of the RSGB, was getting regular Morse practice and, to my amazement, was the proud operator of artificial aerial experimental station 2BDT. (I say "operator" deliberately because being in the eyes of the law a minor at 16 years of age, the Post Office insisted that the actual license, was issued to my father on my behalf. Dad did not know a Key from a Kilocycle, but being the great chap that he was his only remark when I presented the papers for his signature was "Don't do anything to get me

MEASLES, MORSE AND MOBILISATION - Contd.

into trouble".)

In those days there was no such thing as an Amateur License in the UK. Instead, the PO issued experimental Licenses to those who they considered worthy of them, and at times they had been very selective indeed. By 1936 the writing was very much on the wall, however, and looking back it seems fairly obvious that licenses were being issued as part of the defence build-up. Three years later young men with "live" operating and technical experience suddenly became a very valuable commodity. As apart from the Morse Test there was no formal technical exam for the licence, the PO insisted that most applicants hold an artificial aerial license for at least a year before they applied for the full license. No Morse Test was required for this license, and it empowered the holder to own transmitting equipment and to operate it into a non-radiating dummy load, usually on the 1·8, 7 and 14 MHz bands. Call-signs consisted of the figure '2' followed by three letters. No 'G' prefix was used. My own licence was issued for the purpose of experiments in the frequency stability in oscillators (not that I did many!). It is probably true to say that at some time just about every AA licence was used with 66 feet of wire instead of the dummy load, plus an un-allocated 'G' call, but that is another story!!!....

TO BE CONTINUED.

(Lots more to come - CW Signals from VK, a PA with a type 42 Pentode, the "Amateur Bands 2", the 40ft 'A' frame mast, crystal calibration certificates, RSGB Calibration Service, conditions during 1937, the RNWAR, a Woolworths breadboard, etc., etc. - Ed.).

B.B. (Before Beacons).

(The recent light-hearted article on Beacons, which likened modern Signals techniques to the medieval beacon usage, has prompted a letter signed "73, Wireless Section, G9NBG, 10 A.A, Workshops". The accompanying letter just says "The enclosed will prove that Moses was provided with a Xtal Oscillator long before the Beacon Boys played with Suppressed Carriers. Of course, R.E.M.E. was there in support with their expertise on Signal gear". It must surely come from someone connected with those soldiers whose cap badge tells that they work like horses, move like lightning, are chained to the job, etc. - Ed!).

".....And the voice said unto Moses "Come ye up into the mountain and receive ye the Ten Commandments of ye operating. So Moses picked up his portable rig and toted it up the hill, setting it down on a handy stump, he adjusted the cats-whisker, stuck his cans on his bonce, and thus covered his lug-'oles. He fished out his hammer and chisel, for, verily, he was no mean chiseler, only an 'ammerchewer. He grabbed a bit of flat rock, and he quoth "K please, I am ready to receive". And the thunder rolled and the lightning flashed and Moses said "QRN, QRN. Send louder please as there is much QRM. Please QRO for there is mighty skip distance, or I must QRT because there is bad QSB. QRV....." And Moses copied on the stone:

(1) Thou shalt NOT make six dots for ye letter 'H' .
(2) Thou shalt designate they that call thee, and sign thine own call-sign at least every hundred CQs.
(3) Thou shall multiply not thy harmonics.
(4) Thou shalt not cause thump to be heard in broadcast receivers - much.
(5) Thou shalt not modulate more than 300%.
(6) Thou shalt not say "Roger, Roger" when thou hast not got it.
(7) Thou shalt not moan at the Cadet-type kids, for, verily, they too must learn.
(8) Thou shalt love him that blankets thy frequency, even as thou dost his.
(9) Thou shalt enter into all Contests and shall give TRUE reports therein.
(10) Thou shalt keep thy lash-up in the bands prescribed for thee, so that thy days may be long in the Call Book that is published for thee and thine own kind.

CW NETS REPORT.

G3ADZ/0039.

There is not a lot to report on this occasion. Activity level continues to be about the same, and we still hope that more people will call in. At least two fairly new members, G2AYY and G4GLL have become regular supporters on 80 Metres. The average noise level on Top Band is still a problem and may discourage a number of stations, but those who do use the Net find that reasonable communication is possible on most evenings, including GM, GI and GW.

The big disappointment is the almost total lack of response to my appeal at the AGM and repeated in the last 'Mercury' notes for news of CW activity from overseas members. Quite a number of our CW stations are spending time each week on or near 14085 and 21085 but the results are little better than nil!. An exception to the general pattern is 9G1KU who is on 14 MHz most Monday evenings from 1950 hours GMT. I am on most Monday evenings between about 2000 and 2250 hours GMT on 14 and 21 MHz and call "CQ RSARS" on or near '85 - to be answered always by U's or W's but NEVER by members (my RX is not all THAT bad!!). May I again ask overseas stations to note two things - we are always keen to make firm skeds at any time - notifications/requests to me, please. And, as most of our CW members are not yet in the "Retired" category, I would remind you that it is more difficult to provide sked cover between 0750 and 1900 hours GMT on week-days. Secondly, I do not know how the DX stations fare, but 14085 is nearly always very difficult for reception in 'G' land. There are two commercial teletype stations on or very near the frequency for most of the 24 hours, both S9 plus, and one with a very wide bandspread and some strange "noises off". I am not suggesting to Ray that we change the basic QRG at this time as this may well add to the confusion, but I do request everyone to regard 14085 as very much an indication of "that part of the band" and to search and call widely when necessary - as much as + and – 7 KHz. If you call spot on '85 the chances are that the 'G' station will not hear you, even if band conditions are reasonable. 21085 does not seem too bad and also remember that 28 MHz is fast becoming a good DX band again.

Two further reminders - when I do not get on the Nets, and this is usually because I have been called away on business at short notice, Doug, G3KLX, takes Control of the 80 Metre Net, and either he or Frank, G5BM, look after Top Band. On most Wednesdays Doug is also willing to take
over the 80 Metre Net from me at 2115 when I close for my break and if there is an activity demand. The change from BST to GMT happens on 29th October this year, but remember that we work on "Clock Time" for both Nets, so it will be all 'Z' for the rest of the Winter season.
3.10.78

73 Dennis G3ADZ/0059

AWARDS AND CONTESTS MANAGERS REPORT.

G3EKL/0046.

I mentioned in my last report that G4RS would be entered in the RSGB 3·5 MHz Field Day contest - your HQ station was placed second overall. In the 144 MHz CW Contest G4RS came 15th out of 32 entries with a creditable 282 points from 44 QSO's. In both Contests the operator was G3EJF/0004. Well done, Johnnie, and a sincere thank you from all our members. There has been one Society contest since the last 'Mercury', the VHF Contest which proved to be something of a personal disaster. I "aired", or maybe it should have been "wetted", G4RS and meandered off to a high point in between Wensleydale and Wharfdale. The WX was atrocious, I raised four members G3CIO, G3VSA, G3ZFZ and G4GOZ, got soaked, and the old car didn't take too kindly on the return journey to the flooded country lanes!. Luckily, Daphne and I were both sporting gum boots and got back in time for "The Onedin Line". But seriously, one log submitted for the VHF Contest and so I declare the winner as G3VSA who this year operated from his home QTH. The Top Band Contest will have been and gone by the time this reaches you and so will the first leg of the 5-59 Contest. I hope the bands were favourable!.

AWARDS AND CONTESTS MANAGERS REPORT - Contd.

With the HF bands opening up more, an attempt to stimulate more interest for the overseas members is being made by resurrecting the monthly Activity Sunday. Activity Sunday is the Sunday of the second full week-end of every month and the intention is to work as many of our overseas members as possible. It is difficult to pin down firm calling times, but I suggest members listen and call on our listed frequencies "on the hour" depending upon the propagation pattern. There are some 50-odd overseas call-signs listed and most are active sometime or another so you should be able to find someone somewhere!!. I realise that Activity Sunday is the same weekend as our various Contests but how about a concerted effort, each Activity Sunday, on the hour and see who you can work?. To add a little more spice to it all, I am introducing another Award - the RSARS WAC Award - based on the six Continents recognised by the IARU - Africa N&S Americas, Asia, Europe and Oceania. All I need is 6 QSL cards proving contact between one member AT ONE QTH and six other members, one per Continent, QSO's can be taken back to the beginning of the current Awards scheme, 1 Jan 1969. I believe one or two members may already be able to claim this Award, but the aim is to interest the other 99%+ of he Society!.

I've had a very quiet period as Awards Manager recently and have no changes to report, so I'll introduce a regular feature and offer an up-to-date ladder each 'Mercury'. Let's start with the CW Ladder as at 1st October 1978 :

250	-	G3UAA.
150	-	G2KK.
100	-	G8VG, G3ADZ, G3EKL, G3YSK.
50	-	GW3ASW, G3YBT, G3XSN, GW3XHJ, G3NVK, G3NT, GM3HGA, G2WQ, G3EJF, G3BWX, G3MKR.
25	-	G3VIR, G3FGN, G2HKU, G3FMW, GM4ELV, G3TKX.

Now to a crunch point. Would members who are genuinely interested in the VHF and Le Touquet Contests be good enough to drop me a line - are they needed?, can they be altered to get a better catchment?, should they be dropped? The Awards and Contests are instituted at your request and for your enjoyment, I only administer them!. If changes are needed please let me know - if the Contest isn't required, let's cancel.

Ray, G2BPC/0118 has logs and blank cards for his pleasant days in the sun as 5Z4IR from 1962 through 1969. Any member requiring a QSL from 5Z4IR, please drop Ray a line with an SAE and he'll he glad to oblige.

That's it for now, so until the next time I would like to wish you all a very Merry Xmas and a Healthy 1979; may you get whatever you want from the hobby!.

73 Ray G3EKL/0046

SPECIAL DELIVERY.

(By Special RSARS Inter-Office Memo comes the following. - Ed.).

3, Hillcrest, Scotton, Catterick Garrison, North Yorkshire.
To : The Editor, "Mercury".
From : The General Secretary, RSARS.

Dear Sir,

In reply to the letter from Ted, GM3LWS, in the 7/78 "Mercury" page 16, I Feel I must accept some responsibility for the phrase "UK CLOCK TIME" displayed here and there.

All Society Contests are timed in GMT as they are "fixed feasts", but the LF Nets advertised on the inside back cover of "Mercury" have to change times twice a year when the clock moves fore and aft and so are deliberately shown in UK CLOCK TIME. I suppose it could be spelt out in the November and March "Mercury" that "All times are GMT until the clocks go forward when LF Net

SPECIAL DELIVERY - Contd.

times are to be advanced by one hour" or "All times GMT unless the UK is on Summer Time, when add one hour for LF Nets" or "Adjust LF Nets to suit the clock" or "Come and find us - time is no object" but all these variations are longer than "UK CLOCK TIME" and I honestly think that the way it is expressed is clear enough, caters for a varying BST sequence, is as brief as can be, and allows me to slip up with the posting of "Mercury" without causing too many hiccups!!.

Ted, I'm open to any (polite) suggestions!.

73, Ray, G34EKL.

TREASURY NOTES.

Contributions to Society funds are gratefully acknowledged from the following members : 0119/G3VDR, 0292/G3VSA, 0390/VK6UV, 0418/G3VIY, 0452/GW3LAD, 0461/G2BQ, 0557/WA6CEB, 0726/3D6BP, 1274/G4FKZ. This covers the period 1st June - 1st October. Our sincere thanks to you all.

THE CATTERICK GANG ASSEMBLE AGAIN!

G3EKL/0046.

(A) Mid-July saw another pilgrimage to NOSTERFIELD, fifteen call-signs being present, together with a further eleven interested(?) spectators. Amongst the gathering was member 0245, G4EDH, who frequently radiates as TJ2P. Luckily, there was a free-hanging lamp in the bar which 0245 had oscillating quite well!. He is on two months leave from the Cameroons but by the time this is in print he will be back again in the sun signing TJ2P on 14160 and/or 21160 KHz (he doesn't believe in any unnecessary tuning effort!!) using an FT-101-E and a TH-33 Junior 3-element bean. Those who answered the CQ to prayers were G2HNL, XYL and Harmonic - G3NT and XYL - G3DBU - G3EJF and XYL - G3EKL and XYL - G3FMW - G3GEJ - G3IBB - G3JZP and XYL - G3POB and XYL - G3VMW - G4EDH and XYL - G4EMX and XYL - G8KOX and XYL and G8NIV and XYL.

(B) Another session took place in September at the same QRA and just in time to catch 0245 before he flew out to TJ2-land. The ladies took themselves off to a separate room this time, whether the attraction was the fire or a one-armed bandit I am not really sure but I suspect it might have been to get away from the male voices!. It was agreed to run a coach to the Amateur Radio Show at Leicester at the beginning of November and also to partake in the RSGB Affiliated Club Contest again. Call-signs in attendance were : G2HNL, XYL and Harmonic, G3DBU, G3EKL and XYL, G3FMW, G3GEJ, G3IBB, G3POB and XYL, G3VMW, G4EDH and XYL, G4EYP, XYL of VP1APC. (Both times 'EKL was a passenger - thank goodness!!)

(Why not try the same thing in YOUR area? -Ed.).

WELL, DID YOU KNOW?.

The answer to the KR6/KA6 question was 1500 hours GMT, on 14th May 1972. Doesn't seem that long ago does it?

THE INLINE WATTMETER - PART II.

By

FIVE - 59.

(Part 1 of this article appeared in the Autumn 1977 issue of "Mercury". Sufficient theory, together with its practical application, was discussed and herein will not, bc reiterated, except, perhaps, to make a point of emphasis. The copyright of both articles remains with the author. Any queries regarding copyright, republication, etc., should be addressed to : C.R. Mountjoy, Esq., GW3ASW/GW4CCF, "Pant Villa", 55 Aberdare Road, Cwmhach, Aberdare, Glamorgan, CF44 0PG.).

Though purporting to show just how PEP readings could be improved, the previous article did not claim that any PEP readings taken were accurate, in fact, emphasis was made to the opposite. This article continues from there, to show how, by the addition of a few extra components and switching, a very comprehensive RMS/PEP Meter can be constructed that is not only as accurate as many instruments now on the market around the £100 mark, but very, very much cheaper. Most commercial instruments in this class claim an accuracy in the 8% region and this figure can certainly be improved if care is used. Also, unlike commercial instruments an optional extra is included for a separate SWR that can be used on ranges of power not calibrated on the meter, and controllable from the front panel.

To readers of Part 1, apologies are due for two errors that "just crept in". The first is the reference throughout to μμA and μμammeters...., Tut, Tut!! – please amend to read μμA and μAmmeters. The other error is in the diagram of the completed meter. In this, the switch contacts of the right-hand meter should be altered so that the 20W and 2000W positions interchange. I am prostrate with grief!!!

CIRCUIT DIFFERENCES.

Study of Part 1 and its circuit and those which follow show the alteration to the components of the RF HEAD and the extra unit for the measurement of PEP (SSB) with its associated IC and Power Unit.

THE RF HEAD.

Electrically there is no difference between the two types, but constructionally there is quite a lot. Gone are the tricky resistors associated with the original toroid which itself is now centre-tapped, The touchy voltage sensing capacitors have been reduced to two, and the only components still requiring care in selection are the two diodes, D1 and D2, and this problem is easily taken care of by buying manufacturers matched pairs of AA119's.

THE TOROID.

Wound on a similar ferrite toroid ring as before, it is wound exactly as one would wind a 4 : 1 Balun with 16 - 18 double turns (see sketch). Opposite ends are joined together and form the centre-tap. The whole toroid is mounted on a printed circuit board so that the ends are kept very short. In fact, all the components shown in this unit can be mounted on the same board, which is about 2" X 2" maximum. If this is done, however, it is imperative that the whole is screened effectively from the remainder of the unit. Neither, R1 or R2 are critical values, although the value of R1 will effect the actual voltage appearing at the diodes. In my unit I use 560 Ohms for R1 and 56 Ohms for R2, but values for R1 can range from 330 to 1200 Ohms and those for R2 from 47 to 75 Ohms, This latter resistor must, for ranges above 500 Watts, be at least 1 Watt rating. The capacitors C1 and C2 are now 10 μμfd and 250 μμfd respectively, with the latter variable. The adjustment of this ratio was always "touchy" particularly C1 when it was "hot" with RF and C2 I found often hard to determine. During tests it was found that if C1 was made about 8 - 10 μμfd and C2 was changed to a compression type capacitor (ceramic), the aforesaid "touchiness" was non-existent, due, no doubt, to the fact that the screw side of the compression cap was at earth potential. It might, however, be found in certain designs that this capacitor, which is nominally 250 μμfd, may have to be paralleled with another small fixed ceramic in order to obtain a null on REFLECTED POWER.

THE INLINE WATTMETER - PART II - Contd.

THE RF CHOKE.

These have been found unnecessary if the unit is well screened. If desired they should he inserted between the diode outputs and the feed-through capacitors.

THE PEP/SSB MODE.

This is, I suppose, the point upon which the instrument commences to become a little more complex, yet study of the resistor chains show that they are only duplications of the RMS chains and it is only the extra switching that appears disconcerting. The IC itself is, very simply, a voltage follower, which, when connected as shown very accurately reflects upon its output applied to its input. This with an almost nil drain of current from the input yet permitting, quite a drain from its output. It is therefore, a very high impedance to the input voltage. So high, in fact, that a bleeder resistor has to be deliberately placed across the input (R17) in order that the meter will return quickly to zero when the applied signals are removed. A full description of the operation of such devices is given in contemporary publications such as the ARRL Handbook, etc. C6 is a small electrolytic/tantalum capacitor of about 2·2 μfd which charges up rapidly to peak voltage where it holds. The period of "hold" is dependant upon the value of R17. If C is made 2·2 - 2·5 μfd and R is 1·5 Mohms, the peak "hold" will last about 3 seconds. D3 is inserted into the line in order that the applied voltage to the IC input is kept strictly positive. IT SHOULD NOT BE OMITTED. C5 is another by-pass capacitor.

THE IC.

During the whole of my tests I have used the μA 741 op. amp. which is easily obtainable and has the advantage of being cheap. No doubt there are other op. amps. more suited to this particular operation. One that has been brought to my notice is the CA3130 thought I have not used it to date, but understand that any voltages applied to it will have to be stabilised at a maximum of + and – 5 Volts. Also it seems that the variable resistor voltage divider on pins 1 and 4 will have to be changed to 100 Kohms. I have found the adjustment of VR1 simple and it can be set up using a voltmeter (AVO) simply adjusting it until the voltages applied to these pins are exactly half that applied to pin 4 (negative voltage).

THE POWER UNIT.

This is simple and straightforward and for the μA 741 can be 6 - 12 Volts. Ensure that the zeners suit the voltage and that the capacitors C7 and C8 are not less than 100 μfd for adequate regulation. Current drain is small and should certainly be less than 25 mAs. Both mains input leads and the AC LT output should be bypassed against RF. I have used tubular ceramics of 470 μμfd to BS 415 in his position at 1 kV W.

The resistor network will depend upon a) the toroid winding, etc., b) the meter used and c) the scaling required on the meter. I am using a 100 μA meter and scales of 10/100/1000 watts. In my case VR5/6/7 is 10 Kohms, 50 Kohms and 200 Kohms when in series. If these, are connected up as per the circuitry of the suggested switching these would become 10 Kohms, 50 Kohms and 250 Kohms. VR3 and VR4 are panel mounted potentiometers for the separately adjusted SWR section. Two obvious questions here will be "Why the scales?" and "Why the separate SWR facility?". Probably for the British amateur a maximum of 500 watts would suffice, but, having scaled one meter so, due to mal-adjustment of the appropriate resistor, the needle "bent" itself on the FSD stop. At least with a 1KW FSD 500 Watts is approximately 70·5% of the scale so giving a little laxity. 400 watts is also in the useful part of the scale at 63·25% or so - See the scales tables. Finally, although the problem is a personal one, each of the scales 0 - 100 etc., are of three decimal decades permitting readings on the 100 scale down to 0·25 Watt, and on the 10 Watt scale down to 0·025 Watt. This is very useful for checking driver circuits, etc. (See page 44 for meter calibration figures).

THE INLINE WATTMETER - PART II - Contd.

SWR SCALE.

Whilst in use it is hardly likely that one would set up a transmitter on the 100W scale even if initial tuning might be done on the 10 W section, if high SWR ratios are likely to be present. Therefore, the extra section can be used with any convenient intermediary power from 5 watts to the maximum of the controls themselves. It is particularly useful to have, at the flick of a switch, immediate reference to RMS levels presently in use on the station. The controls VR3/VR4 can be ganged if care is taken in selection, so saving the onerous task of changing over the INPUT/OUT RF cables to obtain a null reading on reverse.

CALIBRATION.

The reader should refer to comments on Part 1. However, in this respect, very good accuracy can be obtained by simply calibrating on the 50 Watt marker (when using a 50 Ohms Dummy Load). The first task is to zero in the RF head. After thoroughly checking the circuitry apply a small amount of RF to the input terminals whilst connected to a dummy load. The Power Switch should be at the 10 Watts position and both potentiometers (VR5/VR8) should be at MINIMUM setting. Carefully advance the RF until FSD is reached (RMS scale) on the meter. Switch to REVERSE and if not reading ZERO then carefully adjust C2 until a null is reached. Re-check at least twice. (See above notes on RF head as well). The meter is now ready for calibration. Switch meter to 100 Watts range with control fully on (VR6/VR9) FORWARD reading. For this test an RF Ammeter must be connected between the output and the dummy load. Now comes the test of the accurate marking of your meter (see table below).

CAREFULLY apply full RF until the RF meter reads exactly 1 AMP. Now adjust VR6 until the 50 watts reading is reached on the meter. Reverse RF input, switch to REVERSE and repeat, adjusting VR9 as above. Switch to FORWARD position and reading should be ZERO. Return switch to REVERSE position and reduce RF to indicate 10 Watts on the meter. Switch to 10 Watts on the POWER switch and adjust VR8 to FSD. Reverse RF IN/OUT again. Return to the 100 Watts position, apply 1 Amp RF, check readings including the REVERSE reading which should be zero, then reduce RF to read 10 Watts again. Turn to 10 Watts position and adjust VR5 for FSD. Check the reverse readings as above. TWO scales are now calibrated. The 1 KW readings can now be made in a similar manner. Switch to 100 Watts and adjust for 1 Amp RF. Switch to 1KW and adjust VR7/VR10 to the 5 Watts reading on the scale (about 22·5% of scale), repeat check on REVERSE scale and re-check. If calibration marking of the meter scale has been accurately performed a quick advance of the RF current through a Linear) to 2 Amps should show a reading of 200 Watts RMS on the meter. This check should be made quickly, for obvious reasons. It is suggested that this procedure be gone through at least 3 times in all by which time other checks can be made scale to scale to prove the accuracy, not only of the markings but of the operators ability to calibrate, and interpret, the meter.

SWR PRE-CALIBRATION.

Part 1 fully explained the method where comparison of two power readings would, with a little mathematics, readily give the SWR readings. In use, this is liable to be a little complex and for rapid reference requires either pre-calculation and dial-marking or the use of a graph. There is happily a simpler method, particularly when using a well marked 100μA meter, i.e.

$$E(\text{Reflected}) = \frac{E(\text{Forward})(SWR - 1)}{(SWR + 1)}.$$

Now, if E(Forward) is taken as 100, then the result will be a percentage of the full scale deflection of the meter. For instance :-

$$\frac{100 \text{ X } (3-1)}{(3+1)} = 100 \text{ X } \frac{2}{5} = 50 \text{ or } 50\% \text{ of the full scale reading.}$$

THE INLINE WATTMETER - PART II - Contd.

IMPROVEMENTS

The completed unit, in various forms, has been in use now for many months and has proved to be a versatile and useful instrument and has certainly made obsolete all other SWR meters at this QTH. If the price of the meter used is disregarded (I've had mine at least 10 years) the whole lot was built for less than £4 and that mainly went on the IC and PCB plus variable resistors, etc. This compares very favourably with present-day meters on sale at this time - AND I've had the satisfaction of finding out how they operate!. There is one observed drawback only at this time and that is that the discharge rate of R17 is slow in the PEP position for rapid checks to be made in the REVERSE PEP position. For common applications this would not matter but as this facility is included - and I need it - I have introduced a spring-loaded switch across R17 to ground with 3·3 Kohms in series. This now permits virtually immediate return of the meter to zero. The resistor simply prevents instantaneous drain of capacitor C6 when the switch is pressed.

SCALING A 100 μA METER IN WATTS.

From Part 1 the formula for WATTS scaling can be obtained or reference made to data elsewhere in that article. For members who may not have seen it, this is done by:

$$S\sqrt{\frac{x}{W}}$$

Where S = FSD of the meter
X = The power to be calculated, and
W = Watts coinciding with the meter FSD

Approximate voltages expected at the outputs of both D1 and D2 will be :

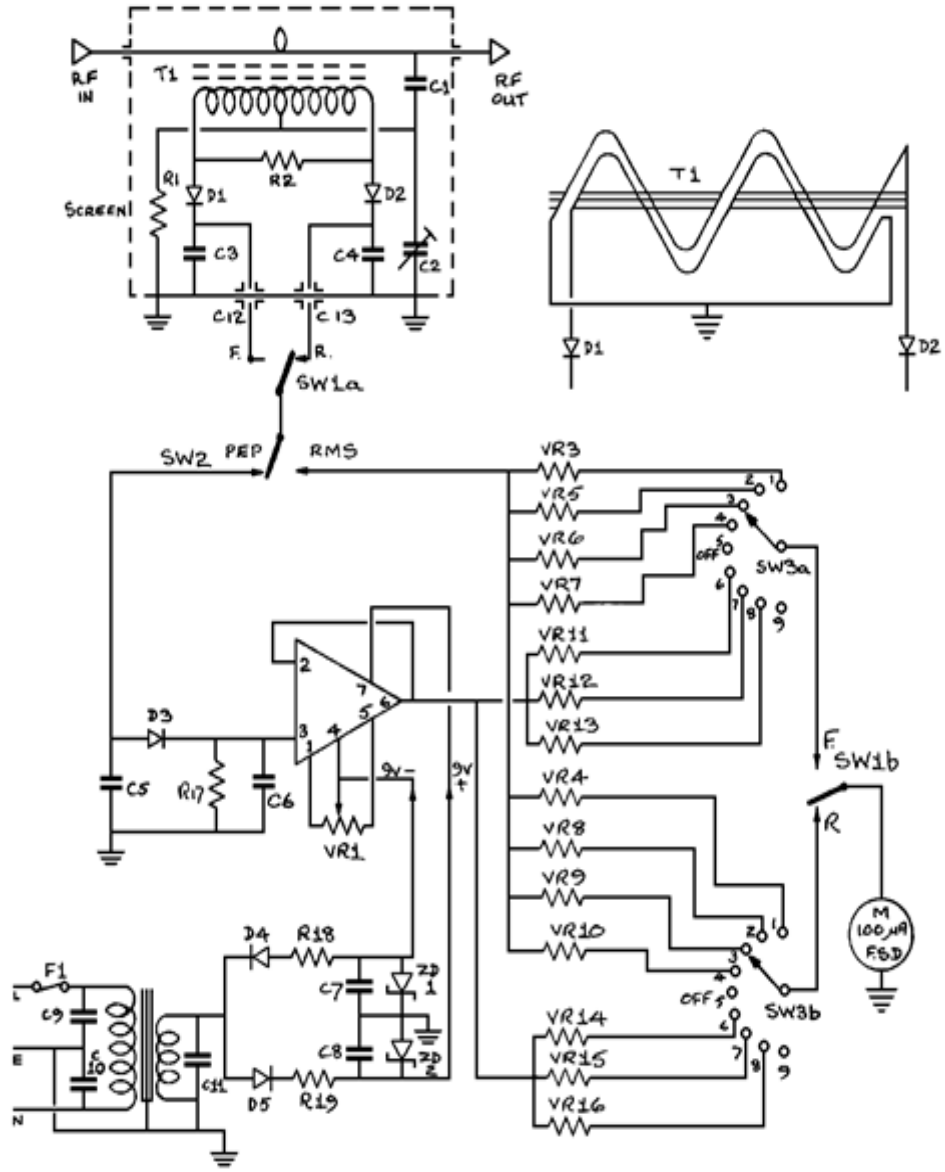
10W RMS = 0·75V, 20W RMS = 1·4V, 40W RMS = 1·95v, 50W RMS = 2·2 - 2·25V, 200W RMS = 4·4V. These are variable, depending upon the toroid windings, etc. they are, in themselves, unimportant, and are given simply for information.

THE IN-LINE WATTMETER - PART II - APPENDIX.

WATTS	METER READING IN μAs	WATTS	METER READING IN μAs
1	10·000	30	54·772
2	14·142	40	63·245
3	17·320	50	70·707
4	20·000	60	77·459
5	22·360	70	83·666
7·5	27·386	75	86·602
10	31·622	80	89·442
15	38·622	90	94·868
20	44·721	95	97·467
25	50·000	100	F.S.D.

Switch Positions.

Position 1 = SWR
Position 2 = 10W RMS
Position 3 = 100W RMS
Position 4 = 1000W RMS
Position 5 = OFF
Position 6 = 10W PEP
Position 7 = 100W PEP
Position 8 = 1000W PEP
Position 9 = not used.



Switches - SW1a/b = dpdt Toggle, SW2 = spdt Toggle, SW3a/b = 2 Pole 9 Way Wafer, SW4 = Mains On/Off (not shown), SW5 = See Text.

R1/R2 = See Text, R3/4 = Panel Mounted Potentiometers 100-250 Kohms minimum, VR3-VR16 = Miniature PCB-type pre-set potentiometers (see text), R17 = 1-5 Mohms (see text), R18/19 = Nominally 100 ohms but to suit Zeners in use, ZD1/2 = 400mW type Zeners to siut voltage in use, D1/2 = Matched AA119 diodes, D4/5 = Small Silicon type rectifiers, T1 and VR1 = See Text, C1= 10µµfd 3kVW, C2 = 250µµfs ceramic pre-set, C5 = ·01 ceramic,

C6 = 2·5µfd Electrolytic/Tantalum, C7/8 = 200 µfd Electrolytic (16 VW), C9/10/11 = 470µµfd tubular ceramic to BS415 (1 kVW), C12/13 = 1000µµfd feed through capacitors, OP-AMP = µA741 (but see text), T2 = Suitable mains transformer, F1 = 100 mAs or less, Meter = 100 µAs FSD. A 4 wafer switch can replace SW3a/b but will make switching arrangements more complex. GW3ASW can supply a schematic if required, but the above arrangement has proved more than satisfactory.

"HURRICANE GRETA"

or

How it can be done

(Compiled by G3EKL)

This report has been quickly assembled to inform members of yet another aspect of assistance offered by amateurs to the public. The report centres around John Hutchinson, Member 1393 and the service offered by the MIAMI WEATHER BUREAU.

John, who was licensed as G8NIV last year, obtained his full ticket, G4HHD, at the end of August and was sent to Belize early in September where he has been operating as VP1APC, He joined Royal Signals in 1964 and trained as a Radio Operator in 24th Signal Regiment, His first posting was to 639 Signal Troop in Celle where he stayed until he rebadged to the Dental Corps in 1968. He has been with the RADC since and is leaving the Service next year, He was "persuaded" to join the Society last August because the NOSTERFIELD beer is good!!.

The story is virtually "as written" and makes very interesting reading.

"So, you want me to tell you all about this commendation!! Well it all started with the formation of "HURRICANE GRETA" on the 16 Sept. We were given the warning order to start to batten down camp in case the hurricane came our way, Now I knew that the KW 2000E had been brought from Masirah to be used on the Ham "storm net", which operates throughout the Caribbean, Royal Signals did not want to know as they had more sophisticated equipment! So that afternoon I tuned in to the Hurricane net, checked in and was relaying info from the Miami hurricane centre 30 seconds after it was coming through on the teleprinter to K4RHL, ELLIE HORNER, In Fort Lauderdale. The CBF (Commander British Forces) came across to find out how I had so much accurate and up to date info before he did - at one stage we were 6 hours ahead of CBF's official source of information! Any way, he said carry on and keep going. On Monday the 18th the hurricane was 150 miles from us, torrential rain came down and I was given the OK to try and set up the KW in the storm shelter. So I checked out and closed down for an hour while I moved. The 20 metre dipole was slung between an iron fence stake and an above ground slit trench, I had enough UR67 to reach the hut and all was OK until some clown decided to drive a L/Rover into the feeder and snapped the centre core from the plug. A quick repair, I reloaded the set and checked into the net once again, took the latest sit Rep and all was OK. The storm actually broke with 95 mph winds at 1800 our time and lasted 7 hours while the eye passed within 30 miles of us over STAN CREEK, An hour after the hurricane broke the Signals boys lost all communication, including to UK, for 18 hours and although I didn't realise it at the time it turned out that I was the only means of communication in and out of Belize!

My contact was with K4RHL. and WA1KKP, LYNNE, from Rhode Island with stations in Washington and Barbados acting as relay when propagation was poor. The "Hurricane net" ran for 84 hours! The two girls Eleanor and Lynne, took it in turn to sleep snatching only 4 hours each day, The CBF, through the ADC, thanked the girls for the way in which the net was handled and the way they helped to keep people informed so well. It was also commented as to the professional way we went about this net, working through vicious QRM at times and still getting the messages through 100% first time.

I was also the sole contact for the whole of Belize thru' other amateurs as internal communications had been out for many hours. Damage was kept to a minimum with very little at Airport Camp and only four houses down in Belize City. Four people ware actually killed although "Greta" passed through five countries.

I must say how grateful I am to K4RHL and WA1KKP who ran the net so ably for 3½ days. It really opened my eyes the way other amateurs kept tabs on us, keeping the frequency clear and generally helping, it was great to be part of it all.

73

John"

Our President sent his warmest congratulations to John and the local British Commander in Belize made the following commendation,

COMMENDATION OF
COMMANDER BRITISH FORCES BELIZE
23998459 CPL J D HUTCHINSON RADC

During Hurricane GRETA, CPL HUTCHINSON, an amateur radio operator, established contact not only with the Miami Weather Bureau but, also with a network of operators along the path of the hurricane. He was then able to keep the Operation Cell informed of the progress of the hurricane and of the damage that it was causing. This information was of great help to both British Forces Belize and the Chilean Government. CPL HUTCHINSON is to be commended for his initiative and general conduct; he contributed to the successful efforts to keep the effects of this hurricane to a minimum.

AFFM ROBERTSON
COLONEL
COMMANDER
BRITISH FORCES BELIZE

2O SEPT

Well there you are folks - an excellent example of co-operation amongst the amateur fraternity. From all of our members John - well done!!

This is also a superb example of what can be done under adverse conditions when the determination to "get through" is sometimes lacking in other quarters. I hope this short report is seen by those who should be concerned and note taken that, with improvisation and ingenuity "it can be done",

"TAIL END CHARLIE"

Being bits and bobs collected in G3EKL's postbag.

a. DA QSL Bureau - new manager, again!!

MIKE, DA1UO, POSTFACH 1771,
763O LAHR/SCHWARZLAND,
WEST GERMANY.

(The QTH is the same as before, just the bloke in charge has changed!')

b. 9G1KU - John, Member 1378, is active on both CW and SSB but will only be out in 9G1 land until next March. In other words John's stint as 9G1KU will have finished before the next issue of 'MERCURY". His operating habits are:

Monday 1930Z	14085
Saturday 1100Z	14085
Sunday 0900Z	21085/21210

The Sunday period lasts for an hour or so, the other two, 15-30 minutes.

The 80 metre nets will offer any up to date news on John,

"TAIL END CHARLIE - Contd.

c. We (I) seem to have been given a bum steer at the AGM when a request from the floor to move the 2 metre RSARS frequency was suggested. We landed on 144·23 and this where the Slow Scan TV chaps congregate. G3WW is virtually "line of sight" to me and has regularly lifted my squelch; I have also heard G2BAR when he is beaming to the Midlands. Little wonder I have not heard any Signals members!! So 2 metre A1 and A3j members, please note that the RSARS collecting point drops to 144·22 as from now - thank you,

d. OPERATION DRAKE

I have received no further information nor requests for assistance from the communications Manager for this Expedition. It will have started by now, but the Society may be asked to assist in the later phases.

e. RSGB HF Manager

Those of you who read "RADCOM" will be aware that the RSGB have elected three frequency spectrum managers. The HF Manager, Dr John Allaway, G3FKM, has written to the Society enquiring if we would like to appoint a liaison officer between the Society and the RSGB on "any HF band matters of concern to members".

For any non RSGB member in the Society, Cyril, GW3ASW, has agreed to act as link man and any niggles, intrusions, suggestions regarding HF frequencies only may be passed to him. Of course Cyril can also co-ordinate any RSGB members of RSARS who have comments to make should they not wish to work straight into G3FKM.

f. CAN YOU HELP PLEASE?

Here, at HQ Catterick I find that we do not have a complete set of "MERCURY's". Hopefully, I am listing copies which we will gladly accept to complete the HQ Library.

If any member can spare any of these copies I would be more than grateful. Postage can be refunded if requested. Numbers required are:

JANUARY 1967
WINTER 68/69
DECEMBER 1967
SPRING 1969
JUNE 1968
JANUARY 1972
AUTUMN 1968

DECEMBER 77 NEWSLETTER

g. Please note that the 80 metre Tuesday net has slipped back to 1900 hours Clock Time, the same as Thursday.

h. I am casting wide and deep now. Can any members advise me who was occupying the Sandhurst Block A, B and C in VIMY/MESSINES Lines between 1939-1950? Any snippet will be of use, Band/Depot/'F' Coy/School of Signals - whatever. I am confident from records held who lived where after 1950, but it is from the building of the three blocks, 1941/1940/1939 respectively, until 1950 that I am trying to pin down. Any hopes please?

j. An old Club Station should be re-activated by now - Blandford ARC, G3VXX with John Hobden G4FBQ holding the reins. John has had a great struggle getting 'VXX off the ground so please give him a shout should you hear him on. The F number is F44.

k. Advanced notification of AGM to be held PM Saturday June 30th 1979 at Catterick. This is the Saturday of the Annual Reunion Week-end. Further information to follow.

"TAIL END CHARLIE - Contd.

l. At last G4RS is active on FSK from it's new HQ - any member wanting a sked, 80 thru' 15, please contact G4RS/G3CIO/G4EMX.

m. WANTED by Jacques Baume, F3WL, (RSARS No 1162), either for purchase or loan (to be photocopied) all radio illustrated catalogues issued since World War I to 1930. Returns guaranteed by registered letter and refund of postage expenses.

n. Please remember - subscriptions for 1979 are due in January '79 thank you.

o. INFORMATION - VE3DJF

VE3DJF, G BARRETT, would like to hear from any Royal Signals member who operated in CAMPBELLPUR with 25th Indian Infantry Brigade during 1947/8/9 - possibly a SGT BARRETT and CPL DINES and two or three others? Any ideas? QTH 12 San Greco Drive, Hamilton, Ontario, Canada.

p. RSARS Stores

Any stores needs are dealt with by Ron G3NKO who operates from his work QTH, which is given on the inside cover of "Mercury". Please don't write to Ron at his home QTH, it only causes confusion!!

q. FORGOTTEN LAST TIME!

I promised a sheet giving details of the various Society contests, which could be pinned up on the shack wall. It was missed from the last edition for which my apologies. You'll find it as the next sheet after this one backed by an up to date stores price list.

And that conveniently fills the last page - have a good Christmas.

73 Ray

G3EKL
General Secretary
R.S.A.R.S.

SUBS FOR 1979

ARE

DUE JAN 79

ROYAL SIGNALS AMATEUR RADIO SOCIETY

Resume of Society Contests

All contests are held over the second full weekend of a month - all times are GMT.

SERIAL	MONTH	CONTEST	DAY	TIMES - Z	METRE BAND	MODE	REMARKS
1	JANUARY	5 - 59	SUNDAY	1400 - 1630	80 only	PHONE	Section 3) 1,2,3 & 4) are
2	FEBRUARY	5 - 59	SUNDAY	1000 - 1230	40 only	CW	Section 4) additive
3	MARCH	LE TOUQUET	SAT/SUN	1200 - 1200	ALL	CW/RTTY	
4	MAY	HF ANNIVERSARY	SAT/SUN	1200 - 1200	Top thru' TEN	ANY	
5	SEPTEMBER	VHF	SUNDAY	0900 - 1200 1300 - 1600	FOUR DOWN	ANY	
6	OCTOBER	TOP BAND	SATURDAY	2000 - 2300	TOP ONLY	ANY	
7	NOVEMBER	5 - 59	SUNDAY	1000 - 1230	40 only	PHONE	Section 1) 1,2,3 & 4) are
8	DECEMBER	5 - 59	SUNDAY	1400 - 1630	80 only	CW	Section 2) additive

RSARS STORES PRICE LIST - Effective 1 Jan 1979

		Price		UK/BFPO Postage & Packing		Total	
		£	p	£	p	£	p
100	Sheets of Headed Notepaper	1	00		30	1	30
500	Sheets of Headed Notepaper	4	00		60	4	60
1000	Sheets of Headed Notepaper	8	00		80	8	80
100	Basic QSL cards or index cards		75		25	1	00
250	Basic QSL cards or index cards	1	80		60	2	40
500	Basic QSL cards or index cards	3	00	1	00	4	00
1000	Basic QSL cards or index cards	5	70	1	30	7	00
500	Overprinted QSL cards	5	50	1	00	6	50
1000	Overprinted QSL cards	9	00	1	30	10	30
1	Flat RSARS Badge (enamelled)		40		10		50
1	Call-sign Lapel Badge (enamelled with pin on reverse)		90		10	1	00
1	RSARS Tie	1	90		10	2	00
1	RSARS Station Log Book		40		15		55
3	RSARS Station Log Books	1	00		30	1	30
5	RSARS Station Log Books	1	60		40	2	00
1	RSARS Mobile (Pocket size) Log Book		40		10		50
3	RSARS Mobile (Pocket size) Log Books	1	00		15	1	15
5	RSARS Mobile (Pocket size) Log Books	1	60		25	1	85
1	RSARS Dymo Badge (1 Row)		25		10		35
1	RSARS Dymo Badge (2 Row)		40		10		50
1	RSARS Retractable Ball Pen		15		10		25
3	RSARS Retractable Ball Pens		40		10		50
5	RSARS Retractable Ball Pens		65		15		80
1	RSARS Windscreen sticker		30		10		40
2	RSARS Windscreen stickers		50		10		60
Great Circle Bearing/Distance Chart		1	50		50	2	00

'Q' and 'Z' Code List - FREE - SAE

Awards and Contest Rules - FREE - SAE

Membership Call-sign List - FREE - SAE

"SIGNALS NETS" or Where you might find them!

ALL TIMES are UK CLOCK TIMES except the 20 metre Overseas Net which is in GMT.

ALL FREQUENCIES are PLUS or MINUS the QRG shown - search boldly.

L.F. NETS	PHONE.		
SUNDAY	1100	3720 kHz	Controlled Natter Net, with 3740 alternative
MONDAY	1300	7075 or 3740 kHz	Natter Group for approximately 15-30 minutes
TUESDAY	1800	3740 kHz	CONTROLLED NET
THURSDAY	1900	3740 kHz	CONTROLLED NET
SATURDAY	1100	7075 kHz	CONTROLLED NET. If conditions on 40m do not permit inter-G operation net will move to 3720 MHz at 1115 hrs.
L.F. NETS	CW		
WEDNESDAY	1930	Prim 3565 kHz Sec 3526 kHz	CONTROLLED NET: Net terminates at 2115 exactly and re-opens at 2200 on TOP BAND.
	2200	Prim 1837 kHz	This net is again CONTROLLED.
SUNDAY	1000	3565 or 3526 kHz	European natter net
HIGH FREQUENCY NETS		PHONE	
WEDNESDAY	1300 GMT	14130 kHz with an alternative 14275 kHz	Though primarily a CONTROLLED NET the UK controller usually requires an overseas station to assume co-control, if more than 2 overseas stations join in. 14275 kHz is for the benefit of those USA and other members who prefer this part of the spectrum. Please monitor both QRGs

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

14085, 21085, 21375 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 70·22 and 144·22 MHz Please notify locally arranged nets for Mercury publication.

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.

All modes : Call 'CQ RSARS' or 'CQ ROYAL SIGNALS AMATEUR RADIO SOCIETY'. During a QSO sign 'G1ABC de G1DEF BT BOTH RSARS K' or 'ON0NO de G1GHI BT RSARS K'. DO NOT join 'RSARS' to your call-sign in any way (i.e. G1JKL/RSARS). 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.