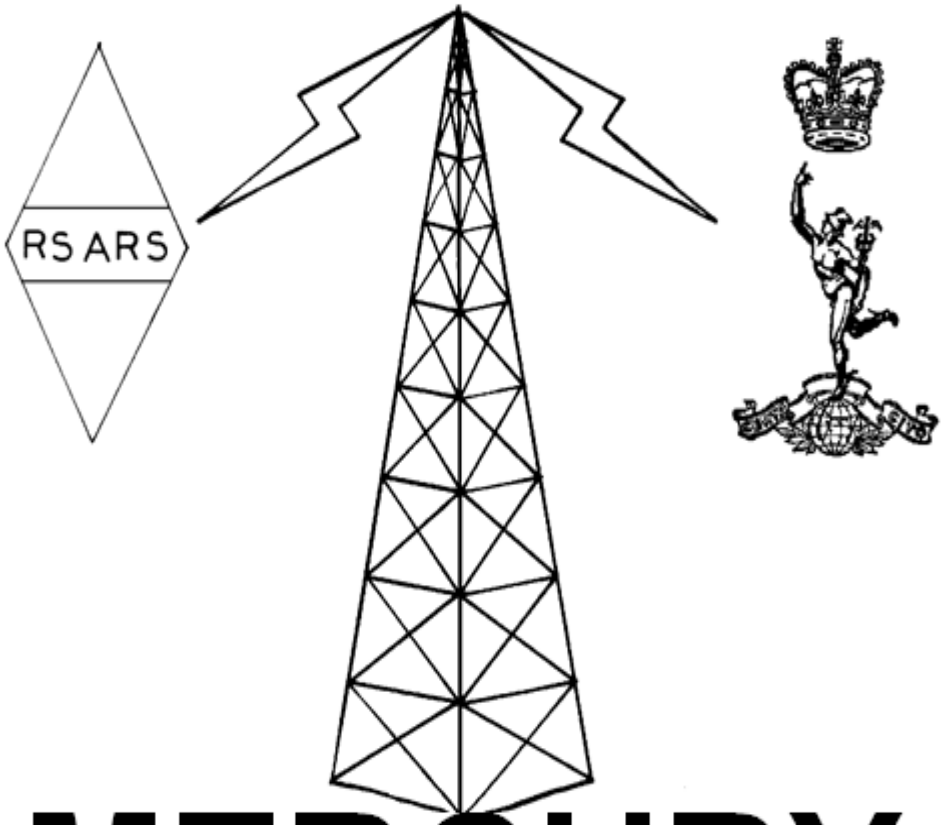

MERCURY

THE JOURNAL OF THE ROYAL SIGNALS AMATEUR RADIO SOCIETY

COMBINED EDITION

NUMBER 53 AUTUMN AND WINTER 1975

ROYAL SIGNALS AMATEUR RADIO SOCIETY

(AFFILIATED TO THE RADIO SOCIETY OF GREAT BRITAIN)

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TREASURER : Major G. Howard Royal Signals, CD Wing, School of Signals, Blandford Camp Blandford Forum, Dorset, DT11 8RH. Telephone : Office - Blandford 2581, Ext. 230.

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ACF/CCF SECTION MANAGER: Captain M.J. Buckley, RSARS 0391, 62 Ballards Way South, Croydon, Surrey, CR2 7JN.

ACF/CCF CALL-SIGN : G4CCF (Being transferred to J.B. Jenkins, 18 Hawthorn Drive, Topcliffe Barracks, Thirsk, Yorkshire. YO7 3EY).

STORES SECTION : As GENERAL SECRETARY.

EDITOR "MERCURY" : As GENERAL SECRETARY.

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STATION MANAGER (HQ) : Sgt. L. Thompson, G3VYZ. Telephone : Blandford 2581 Ext. 298.

HEADQUARTERS STATION : Normal call-sign - G4RS.
Special call-signs : GB3RCS, GB2AAD/GB3AAD, G4CCF.
Locations : G4RS at Blandford Camp, or /A as necessary.
GB2AAD/GB3AAD At The Aldershot Army Display, Rushmoor Arena, Aldershoot.
GB3RCS : As required.
G4CCF with G4CZJ, Topcliffe Barracks, Thirsk, Yorkshire.
Blandford Camp: Grid Reference (1" Ordnance Survey Sheet No.179) 921091. QRA Locator : YK10e. WAB Area - ST 90.

SOCIETY FEES : £1 (One Pound Sterling) per annum or equivalent. Life Membership : £15 (Fifteen Pounds Sterling) or equivalent. Fees for affiliation by Clubs, etc., are the same. These fees become effective from 1st January 1976. Annual Membership fees become due on 1st January annually irrespective of the month in which member joined. Members joining after 1st September are granted the remainder of that year FREE providing that fees are paid for the following year at the time of joining. Fees may be paid by Bankers Order (forms are available on request from RSARS HQ). In the event of non-payment of fees no "Mercury"' after the Winter edition will normally be forwarded and the members name will be removed from the membership list on June 30th. The Editor of "Mercury" reserves the right not to forward copies of "Mercury" in the event of two or more editions being returned undelivered indicating an un-notified change of address. Membership dates from the 1st of the month in which application is made, subject to the application being approved by Council.

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PRODUCTION : "Mercury" is produced at The School of Signals, by kind permission of The Commandant. Distribution to members only plus complimentary copies.

CONTENTS

AUTUMN AND WINTER 75

Note pages 61 to 81 were loose attachments with the Autumn/Summer edition of Mercury.

IMPORTANT NOTCE

THE ATTENTION OF ALL MEMBERS IS DRAWN TO THE FOLLOWING PROPOSITIONS PASSED BY COUNCIL

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The following propositions, put to the Council by the General Secretary, have, after amendment, been passed unanimously. The amended propositions are shown below.

1. IT IS PROPOSED that with effect from 1st January 1976 the membership subscription for Full, Associate and affiliated Membership shall be One Pound Sterling (or equivalent) per annum, payable on January 1st each year and not later than 30th June. In advance subscriptions at the new rate will be accepted.
2. IT IS PROPOSED that all trading prices of the Society stock shall be raised by 10% (rounded up to the nearest 5 Pence for final values under One Pound Sterling, and rounded up to the nearest 10 pence for final values above One Pound Sterling, for ease of accounting purposes).
3. IT IS PROPOSED that applications for Life Membership after 1st January 1976 shall be accepted (providing that the application complies with Society rules as published and/or amended) at the rate of Fifteen Pounds Sterling.
4. IT IS PROPOSED that subscriptions from Senior Citizens (Male over 65 and Female over 60 years) remain at the present rate, i.e. 50 Pence per annum and Five Pounds Sterling for Life Membership.

ALWAYS PROVIDING THAT where a member has paid ;

a) Annual membership subscriptions in advance at the 50 Pence rate these shall stand him in good stead until the expiry of such subscriptions, after which subscriptions shall be due at the new rate, or rate applying at the time of renewal

b) Life Membership subscriptions at any rate applicable before 1st January 1976 these subscriptions shall hold him in good stead for life, and no further subscriptions shall be demanded or required.

AND ALWAYS PROVIDED THAT the membership are informed that the Society has existed for 14 years during which time the subscriptions have been raised ONCE only - from 5/- (25 Pence) to 10/- (50 Pence) for Annual membership, and from £2-2-0 (£2-10p) to £5 for Life membership.

PROPOSED By ; J. Cooper, General Secretary.

VOTING FOR ; The President, The Vice-President, The General Secretary, The Treasurer, The Awards and Contests Manager, The School of Signals Liaison Officer, Non-Serving Members Representative, The QSL Bureau Manager.

VOTING AGAINST ; NIL.

****

The above subscription and price changes will take place with effect from 1st January 1976. The co-operation of Annual members is requested when renewing subscriptions on January 1st for 1976 or after and they are asked to ensure payment at the new rate. All members are requested to inform prospective applicants of the new subscription rate. It is hoped that the above changes will overcome the increases in the cost of RSARS Stores and general expenditure in running the Society. Any member whose membership subscription becomes due on January 1st 1976 and who does not wish to pay the increased fees are requested to inform the General Secretary as soon as possible. (Existing Rule 4 applies ; "ANY class of Member may resign from the Society by giving a minimum of one months notice in writing to the General Secretary").

As a comparison over the last two years, expenditure has increased as follows:

Item	1973 Balance Sheet	1975 Balance Sheet
HQ Maintenance	£60 - 39p	£89 - 59p
Society Maintenance	£64 - 84p	£103 - 83p
Awards.	£25 - 40p	£77 - 12p
Special Events	£9 - 77p	£14 - 90p
Mercury	£30 - 00p	£59 - 01p

EDITORIAL

G3GPS

It isn't often that the Editorial is relegated to Page 2, but with this combined issue it was felt that the Council decision to increase prices must come first and the details are given overleaf.

Raising prices has been put off to the very last minute, and, although we might well have managed to carry on for a while at the old prices an increase was inevitable. Prices to the Society have risen enormously - a recent re-order of Society Ties (for which we paid £1 in "the good old days") has now risen to around £1 - 45p each. No comment is necessary on the increased postage rates!. We sincerely hope that members will bear with us over these increases - the Society will continue to keep profit margins as low as possible in order to give the member a fair deal. All increases (membership and stock) take effect with effect from 1st January 1976. WILL MEMBERS WHO PAY SUBS BY BANKERS ORDERS (Bless 'em) PLEASE COMPLETE A NEW BANKERS ORDER FORM AND SUBMIT TO YOUR BANK AS SOON AS POSSIBLE. Annual RSARS membership fees still mean only 3 packets of cigarettes less a year!!.

Officially, this is the last 'Mercury' I shall edit, as my resignation takes effect from 1st January 1976. The same goes for the posts of General Secretary, Stores Manager, etc. To all members I would like to say a sincere "Thank You" for the way in which you have been so helpful, so considerate and so tolerant. Difficulties have arisen in the past with stores deliveries, Mercury issue dates and sometimes in the replies to your letters. All these problems have been due to two things - insufficient hours in a day and, generally speaking, only one pair of hands at Blandford. If and when a replacement is found, I know that members will give him the same support that they have given me. The time spent in office has been hectic, interesting, instructional and, among other things, very satisfying. I look forward to the continued friendship of the many people I have come to know during the 'Gen. Sec.' period and hope now to have more time for personal contact both on and off the air.

Just to show that things are not standing still at Headquarters, I must mention the very generous grant which has been approved by The Royal Signals Institution of £200 towards antenna equipment for satellite working. It is intended to obtain a pair of 10 element crossed dipoles with phasing harnesses, together with a suitable tower and rotators. It is hoped that very shortly G4RS will clock up its first member-contact via oscar-7.

How does one sign-off an editorial under these circumstances?. Perhaps the best way is just to say "73 es BCNU".

ORDERS FROM THE PAST.

(Recently, Peter, G3UXR, looked in at G4RS with a couple of friends. He brought along a copy of "STANDING ORDERS FOR THE RIFLE BRIGADE (THE PRINCE CONSORT'S OWN) - 1925" which had been issued to his Uncle, ex-Rfn K. Prior, 'C' Coy, 1st Battalion. The booklet makes interesting reading, some extracts are reproduced below - Ed.)

"An Officer or NCO will be detailed to march the men to the train or steam-boat (when proceeding on draft or leave - Ed.) according to the size of the party, and the balance of money due to the men so proceeding should not be paid over until the men parade for this journey".

"The best Shooting Company will always stand first on parade and occupy the front line of tents when in Camp".

"Men who have been in hospital over seven days will, whenever possible, on discharge be put through a graduated course of training in marching until they are fit to take their place in the ranks of the Battalion. (i.e. to march 15 miles in "Marching" Order without difficulty or distress)".

"Smoking is not allowed until after one hour from the commencement of a march; cigarette smoking is always prohibited while actually marching but MAY be allowed at halts".

"It is to be distinctly understood that as the authorised halts (on a march) afford men ample opportunity for all purposes of nature, falling out between halts is ABSOLUTELY FORBIDDEN".

"Riflemen are reminded that nothing is more unsoldierlike than making a noise or shouting on a railway train. Singing is permissible when the train is in motion except when passing through stations and inhabited places when quiet MUST be maintained".

"All ranks are cautioned regarding the danger of losing their head-dress. As the loss of that article, particularly when proceeding on Field Service, may render a man worse than useless, such case should usually be dealt with by Court-Martial".

"The wives of Sergeants and Paid-Acting-Sergeants are not allowed to wash for the men. Those of Unpaid-Acting-Sergeants are".

"Washing must not be allotted to any woman who does not do the work herself".

"All Officers must make themselves thoroughly acquainted with all the country and roads within a fifteen miles radius of their barracks".

"Marksmen and classified Signallers (provided they are not 3rd Class shots) will, as far as possible, be excused all fatigues".

(Times have changed!! -Ed.)

HERE AND THERE.

Bill Western, G3TDW/RSARS 0388 has completed a geographical QSY from Sandy, Beds., to 181 Topsham Road, EXETER, Devon. A land-line call to Exeter 70936 should find him OK.

A nice letter from Philippa, XYL of the late G3SUK. She is endeavouring to clear all QSLs due from G3SUK, but is also busy with the harvest on the farm.

Barrie, G4CZJ/0701 is now settled at 18 Hawthorn Drive, Topcliffe Barracks, THIRSK, Y07 3EY, Yorks., and mentions that the QTH looks good for VHF. Hopes to complete his Linear and then move on to a 2M Transverter.

The OWL reports that Dick, G3NVK, recently heard about Jack Cox who is a quadraplegic due to a road accident some years ago in which he lost both hands. Dick and his friends went along to see Jack and arranged to buy a RX on his behalf. They have arranged to have this modified for use with a mouth-stick and, it is reported, a 'ticket' for Jack will probably be the next thing on the agenda. As the OWL remarks "All this was done without anyone asking Dick and his friends to help - they just heard about him". Well done, Dick & Co, the spirit of Amateur Radio still prevails.

HERE AND THERE - Contd.

Ron McGill, G3WZQ/RSARS 0361, having got rid of all the HF gear, will be found around 144·310 MHz. Ron is another victim of the "Redundancy" axe, but is making good use of the extra time available.

Francis Rose, G2DRT/RSARS 0322 has four RF meters (0·5 Amp RF) which are in need of repair. Any member who might have information as to where Francis can get these repaired, is asked to contact him at 84 Cook Lane, High Wycombe, Bucks, HP13 7EA.

ZS6BMU, otherwise A.J. Hodgkinson has completed a short-distance move and is now located at 64 Queen Alexander Road, Lombardy East, Johannesburg, 2001, S. Africa.

Congratulations to RSARS 0095, John Harvey, who is now G8KLO. Hope to hear you on the Bands, John.

D. Dnmbleton, G3HCM/RSARS 0016, has sent along his original D2 licence, D2II, issued by none other than RSARS 0589/G8KW way back in 1947. This shows that the 'D2's' were allowed 10 Watts on Top Band (1800 - 2000 Kc/s) and 25 Watts on the other bands. These were listed as 3500 - 3635, 3685 - 3800, 7000 - 7300, 14000 - 14400, 28000 30000 and 58500 - 60000 Kc/s. One stipulation was that the HT supply should not have more than 5% ripple. Para. 13 reminds the licensee that The British Signal Communications Board may impound the station "at a moments notice" and that the licensee shall not be entitled to any compensation should this happen. The licence was accompanied by a British Forces Call-Book, which shows the following Army licensees (suffix letters and surnames only), A.A - Parker, AH - Davey, AJ - Wilson, AR - Furguson, BC - Frost, BU - Porter, BV - Stevenson, BW - Bais, BX - Dawson, CB - Gittins, CH - Collins, CJ - Bateman, CK - Kidd, CN - Limpens, CO - Platt, CU - Shaw, CX - Nailor, DB - Juniper, DC - Burden, DF - Hancock, DN - St. John-Beale, DS - Howe, DT - Foster, DU - Severs, DW - Golledge, DX - Woodmore, FA - Craggs, FB - Harwood, FD - Rodwell, FF - Wright, FL - Smith, FQ - Kingsbury, FR - Parker, FT - Shaw, FV - Mason, FW - Walker, FZ - Chater, GA - Bertie, GC - Garforth, GD - Lane, GG - Omer, GH - Portch, GJ - Neale, GK - Brown, GL - Smith, GN - Le Hardy, GO - Soott, GV - Durham, GX - Power, HA - Bridgwood, HF - Simpson, HG - Gray, HJ - Crerar, HL - Kay, HN - Ewen, HO - Barry, HP - McCauley, HR - Dent, HS - Gibson, HT - Wood, HW - Wolfendale, HZ - Robinson, IA - McCraig, IB - Simpson, IF - Hole, IH - McLean, II - Dumbleton, IJ - Stephenson, IK - Copley, KW - Shears, YZ Runeckles. Many of the above names are instantly recognisable from the present RSARS List. Wonder what happened to all the others???.

Congratulations also to Dominic Smith, RSARS 0919, who has also passed RAE and is awaiting a call-sign.

The "Guess Who" photo displayed at the A.G.M. attracted only one entry - from a member who shall be 950-less. His guess was "The Gen. See." which could be taken to mean a wealth of military service or the fact that his age shows!!!. The photo was of G2UV, as a handsome young man in WWI adjusting a Mark III Tuner (I think Ed.). To all those members who had a look at the photo and didn't have a guess, mark your Confidential Reports "Powers of Observation - POOR" as the same photo complete with all details was displayed in the other room!!!.

Welcome back to Ted, GM3LWS, who has returned from Aphrodites Isle, the Land of Keo, to cooler climes in Glenrothes. Ted is looking for a KW2000B?PSU/160 ATU. If you can help, drop a line to Ted at: E. Rose Esq., 24 Ettrick Way, Glenrothes, Fife, KY6 1JL.

From 26 Weald Lane, Harrow Weald, Harrow, Middlesex comes a letter from Tim Harrowell, G3IMI/RSARS 0703. Tim has obtained a B44 MkIII Transceiver and is hoping to get it going on 4 Metres. However, he would like some more information on this equipment, particularly the Intermediate Frequeney(ies) and the crystal multiplication factor for the TX. If you have any info or a circuit diagram, or have converted this piece of "demobbed" equipment for 4 Metres please drop a line to Tim. He is active at the moment on 2 Metres, /M and Fixed and he hopes that the B44 will give him a second band.

HERE AND THERE - Contd.

Whilst on the subject of the B44, similar information is required by G3ZFZ, Gordon, of 22 Thwaitville, Arrowthwaite, Kells, Whitehaven, Cumbria. He is particularly interested in getting going /M with a B44. Info, please, to the above address.

VS5MG, Mike, who is now Inspector Groom at Headquarters, The Royal Brunei Police, Gadong, Bandar Seri Begwan, Brunei writes to mention that he is looking for RSARS contacts particularly on Wednesday afternoons (UK). He was having difficulties with antennae mounted on the roof of the Police mess until he realised that it was constructed of Ferrous Concrete, thus giving a good earth plane almost immediately under the antennae. A change to a Ground Plane brought an immediate reduction in SWR and a similar increase in the number of contacts. He hopes to enlist VS5PG who is a local and who was an operator during the War and represented Brunei on the Victory Parade in 1946. He had a pleasant surprise recently when he found some photos in his office showing your Editor, together with Maurice Caplan (ex-VS5MC) and Dennis Bowden (ex-9M2NF) taken during the Royal Signals DX-pedition to Brunei in '68.

An interesting letter is to hand from member No. 0077, P.S. Harris, of 41 Yarnolds, Shurdington, Near Cheltenham, Glos., GL51 5SJ. He writes "As another old "Knob Twiddler" I found the article on the trials of the No.1 Set by fellow member M.B. Morgan, in the Spring number of 'Mercury' of great interest, for, like him, I also was closely involved in the those trials - at the Aldershot end.

These were carried out by the newly formed No.4 Wireless Company attached to 'A' Corps and was our first 'job'. Commanded by Captain (later Brigadier) F.W. Nichols, with Troop Sergeants Webster and Bremner, the Company was formed mostly of ex-2 Wireless Company members just home after tours in Baghdad and Sarafand. The No.1 Set was, I believe, the first Army Wireless Set to work on the shorter waves (around 100 - 200 Metres) and certainly the first to use screened grid valves (a longish object with three pins at each end). I met up again with the No.1 Set in India, in 1934, where it was in use on regular schedules around the frontier garrisons, and again, I believe, was the first Army Set to work regular schedules using 'cut' aerials and making use of 'skip distance'.

I also remember the old No.2 Set well, and had an interesting spell on them on road control during the Mohmand campaign of 1935, before being rushed back to 'Pindi to pack, and catch the November boat back home for the 1936 Foreman of Signals Course".

(Our thanks to 0077 for another piece of history regarding the early range of Wireless Sets - he passed the Foremans Course, by the way, later becoming a Technical Officer Telecommunications. - Ed.).

Shane G. Fahy, who signs himealf "Ex-0432" sends along his subs and apologies for the oversight, but points out that since the middle of last year he has been abroad but regulations do not permit him to say when or where. However, during this time he has had NO MAIL FROM THE U.K. hence our reminder did not reach him. Fully understood, OM, and we are happy to "reinstate" you as 0432!!. On a more serious note, Shane notes that the cause of his rather shaky handwriting was a rather serious car crash from which he is still recovering. We wish you a speedy recovery, OM.

RSARS 1140, on the books as Roy Ritchie, GM3OYV, of 35 Castle Avenue, Edinburgh, EH12 7LB, sends along a "PPH" (Potted Personal History) which reads : "A member of S.C.U.3 and served, as 2603093, at Barnet during 1943/44 later serving in S.C.U.4. Indoctrinated into amateur Radio at Barnet by G6CY and others, but had to wait until 1962 for the opportunity to take out a license. Interested in QRP and Portable working. Home station is a KW Atlanta and Dipoles for 80 and 20 Metres". Tnx, Roy. Members should keep an ear open for GM30YV - he hasn't ordered that stack of overprinted QSL cards for nothing!!.

Due to a misunderstanding, the call-sign of RSARS 1147 was entered on one or two early sheets as G3ZGO. This should read G3ZGD (Zulu Golf Delta). Our apologies, OM.

Ted, G3UUA/0449 has been on the move and is now located at 4 Ousel Rock, Fence, Near Burnley, Lancashire, BB12 9PT.

HERE AND THERE - Contd.

Dick, G3NVK, attended the AGM and left his departure to the last minute, which meant a hair-raising dash across Dorset and Hampshire in a car "piloted" by G3WKM in order to catch a train to join his XYL on holiday. He made it and joined the family just after midnight. Dick's XYL has been in hospital but is now back 'in command' at home, We all wish her well and trust that any further holidays will not suffer similar interruption.

To put the record straight - C.V. Knight, G2AZW/0820 is a fully paid up member (and always has been). Due to tabular numerical misinterpretation (I put down the wrong number - Ed!) it did appear on one or two early lists that '2AZW might have been a defaulter. Not so - our apologies.

The OWL reports that, following a recent visit to Catterick by H.M. The Queen, the Guards of Honour should not 'Stand Down'. A certain G5GH is believed to be planning a visit in 1976 - his first since 1930!!.

Dave, DA2PS/0264, sends an interesting letter saying that the Spring/Summer 'Mercury, on tapes for our White stick Platoon are ready for despatch (This before the last 'Mercury' has slid into the Letter Box). Dave also passes along a couple of possible addresses in the 'Address Unknown' series. Tnx, Dave, a FB effort.

From Captain M.J. Buckley, RSARS 0391, 62 Ballards Way, South Croydon, Surrey, CR2 7JN. "....I'm prepared to take over the RSARS ACF/CCF Section if required. I think that I am fairly well in touch with other ACF/CCF Signals Units (Platoons/Squadrons/Regiments, or whatever they wish to call themselves!!). Two weekends ago, I managed to get together 32 Signal Instructors and Officers (this is their order of priorities - not mine!!) for the first ACF Signal Instructors Convention sponsored by UKLF and CSO London District. This was a very great success and considerable help given to all concerned. The problems of equipment are not only those of your correspondent, but of everybody in the ACF. We have 88/31/62 sets issued only to selected Units, and then in no great quantity. However with a careful ear to the ground, and the surplus market, one gets by. (Anyone seen any Clansman available on the Surplus market yet???).

Anyone able to help the ACF would be most welcome. Needs probably are:
Instructors for Signals subjects - either on strength, as civilians or as helping hands.
Morse Instructors.
Mechanics with a knowledge of 19/62 Sets or others of similar period.
Assistance with equipment.

(Headquarters extends thanks to Captain Buckley for his FB offer and are happy to accept his offer of RSARS ACF/CCF Representative. Thanks are also extended to the other member who kindly offered to take over. If YOU have a little time to spare why not donate it to the ACF/CCF from whom are likely to come tomorrows Royal Signals members. If you feel you can help in this worthwhile project, contact your local ACF/CCF Unit (check in the Telephone Directory (not always listed in the Yellow Pages) under Army Cadet Force). If you live near Captain Buckley, his details are as follows: Signal Wing, South London Army Cadet Force, Cadet Training Centre, Mitcham Road Barracks, Croydon, Surrey, CR0 0LB. Telephone, Comcen: 01-681-0635, Office: 01-657-4778. Parade times are Sunday morning and activity on the ACF/CCF National Net is under call-signs 21A, 21B and 22B. Drop a line, telephone or call at your local Cadet Centre - your Military training could be a valuable asset to these up-and-coming young lads. Mention your RSARS membership. - Ed.).

Chas, G3XTL, mentions that he has cleared all outstanding QSLs for G3SIG. However, if replacements are required he will try and oblige with some form of confirmation although all 'SIG QSLs have now been used. It is thought that G3LOV now has custody of G3SIG. As Chas remarks "It would be a pity to lose such a pertinent call-sign".

C. Brookson, RSARS 0739, has left the Cadet Forces and feels that he should resign from RSARS, He has enjoyed his membership and 'Mercury' and, to show his appreciation, leaves the Society with a £5 donation. Many thanks, OM, and nice to have had you with us.

HERE AND THERE - Contd.

More CCF news comes from one of our latest Affiliations, Solihull School CCF. Apparently, their system is to introduce (next year) a pre-Signals course for their new recruits in their first year in the CCF. The letter continues ".....During the past two years the Section has fostered an interest in the Radio Amateurs Examination and our Chief Cadet Instructors tackle this at the local Technical College as well as obtaining Cert 'T' at Blandford. The assistance and encouragement we have received from our local Signals Unit at Stoney Lane, Coventry has contributed to great enthusiasm in learning the only high-level military skill left in APEX. The Senior NCO Sgt. Rider was very impressed with a training course recently at Blandford and brought our attention to the existence of the Society and the obvious value in joining for the benefit of future CCF Signallers."

From, Gus Taylor, G8PG/GW8PG. Gus kindly sent along the requested information and "made the Museum Curators day" regarding the fitting of a WS62 into a Jeep. Many thanks, Gus. 'PG goes on to say ".....Very interested to read the article by Maurice Morgan, G8JU. If my memory is correct he and I did some brass pounding together at Liverpool Airport (GJQ) immediately after the last War. So delighted to see he is still going strong. Also happy to read the note re Vic Greensleaves - every time I hear of him he is nearer the North Pole!. He might be interested to know that I passed the old camp at Ogbourne St. George only a few weeks ago, and most of the buildings we used during the Suez Crisis are still standing, although looking a bit the worse for wear. 117 Heavy Wireless Troop seems a long way in the past nowadays!!". Changing the subject to his beloved QRP Gus mentions that he has had a SWL Report from UL7-016-155 of Celinograd who copied his QRP at 5-5-9 on 3·5 MHz. Input was 2 Watts and the distance over 3,000 miles. Gus ends on a note of mystery ".....I am currently experimenting with a simple, readily available antenna system that requires no supports and no wire strung out. It also does not cost a penny. First trials brought contacts at around 800 miles on 14 MHz with 2 Watts input." We await further developments with interest - Ed. P.S. Gus would like to obtain a WS62 in working order - any ideas?.

A nice letter from Stan, G2DPY who, among many other items of interest, mentions that he lives in "the genyewine Old Shoreham Road in Old Shoreham - not to be confused with the 'so-called' Old Shoreham Road which is part of the A27 and about 7 miles long. Stan's Old Shoreham Road is about ½ a mile!!.

It's an ill wind ..... A.T. Francis, RSARS 0774, like the majority or other members, had a label produced by the computer for his "Mercury". In programming his County was spelt "Suffork". The computer didn't like this, so, in addition, it produced a blank label as well. Your Editor saw the blank label and filled it in by hand. 0774 received two "Mercurys". 0774 passed the spare copy along to his work-mates to show an example of how good a Society magazine can be...". In appreciation he also sent along a nice fat cheque as a donation to the Society. Many thanks, OM.

Now that John Worth, G3ZKA has dropped the "Sergeant" and taken up "Mr" he has applied to rejoin the Society. Welcome back, John.

Thanks to Jim, GM3GFO, for some interesting photographs taken at GHQ, New Delhi, in 1943 - 5 showing the SWB 11s, Workshop (including the crystal grinding section), the stand-by generators, and the high-speed receivers (a bank of 24 (!) AR 88's).

A member writes regarding the comments made by The General Secretary at the AGM regarding the founding of the RSARS, when he mentioned 1961. This member mentions that he was under the impression that we "developed" from the old Catterick Amateur Radio Club set up by G2BPC and G5KW in the old 1 T.R. in 1947/48. Possibly so, although your Editor has a membership card for the Catterick Club (No.11) dated sometime in 1946. Another member has pointed out that the Catterick Club was founded before the War and yet another that we developed from The Army Wireless Reserve A.R.S. We are certainly of mixed parentage, but the Secretary's statement was meant to indicate that this was when the name "ROYAL SIGNALS Amateur Radio Society came into use. Other views on this point would be appreciated as no records exist at HQ for our early years.

HERE AND THERE - Contd.

A comment in the Spring "Mercury" about restricted information on certain members ("Details withheld...") was read by G4BXF and, thinking someone was enquiring after him writes "I would very much like to know who this someone is. Could it be the beautiful blonde I knew in Tripoli in 1955?. Or maybe my ex-Commanding Officer has left me something in his will?. If it's a debt collector, I'm absolutely broke!...". No, OM no-one was looking for you. As you probably remember, you asked for your details to he withheld - perhaps it was because of a beautiful blonde you knew in Tripoli in 1955!!!. G4BXF has now given permission for his details to be published. His address is 58 Broadmead Road, Woodford Green, Essex. (No panic, OM, we have no members in Tripoli!).

G3VZP, Bob Morrison, RSARS 0233, after quite a long "quiet period" drops a line to HQ to say that he is now located at 11 Draycott Drive, Cheadle, Stoke-on-Trent, Staffs., ST10 1NH. Bob left Royal Signals in March 1974 to train as a Radio Officer with The Civil Service. Bob and family are now settled in at the given address and he hopes to be on the air "once the garden is dug". The rig is a KW2000A, now 5 years old but with only 3½ hours "on the clock" with an 18AVQ-WB for 80 - 10 Metres. On 2 Bob runs a much modified Pye 2207 Ranger. This VHF rig gives about 40 Watts of Xtal or VFO FM and at the flick or FOUR switches ("I really must fit some relays.....") acts as a transverter from 10 Metres for SSB. A large field at the rear of the QTH and a friendly farmer means that he may well be getting up some reasonable wire antennas soon ("perhaps even a Rhombic for 160....."). The antenna for 2 is a 5 over 5 at 30 feet rotated by the Armstrong method. We'll be looking for you, Bob.

ZL1AUI sends along a delightfu1 postcard showing his QTH at The Bay of Islands - one of New Zealands leading tourist and deep sea fishing regions. Apparently, there are about 150 islands with many inlets and minor bays. Bob is now operational on SSB on 80, 40 and 20 and is looking for RSARS contacts both "at home" and "overseas".

Dave Hogan, RSARS 0800, is very keen on RTTY but, as yet, has been unable to obtain a Terminal Unit. Any news, views, ideas to Dave, please, at "Samosir", 7 Valley View, Landkey, Barnstaple, EX32 0LW.

Brigadier C.R. Templer DSO, G3RDX, RSARS 0678 has also resigned from the Society.

REDUCING THE FREQUENCY OF CRYSTALS.

(The following article was stolen from SPRAT, the journal of the G-QRP-CLUB. It was written by Allan Jones, G3XJO. Acknowledgements are hereby made to SPRAT and to Allan).

It is often useful to be able to reduce the frequency of a crystal and I have found a way of doing this which is much better than the use of a pencil on the plate. This is to use ROTRING ink (available cheaply from most stationers. It is like Indian ink which could perhaps also be used, but has not been tried). First, a spot, as small as possible, is applied to the centre of the plate - an 0·2mm ROTRING nib or similar will make this simple, Wait for about 30 seconds, and wipe the crystal face with a paper handkerchief. This will remove surplus ink and leave a very thin smear across the face of the crystal with a more solid spot where the ink spot was applied. (For some reason this combination seems more effective than either a simple smear or a dot on their own - hence the 30 seconds delay). This is repeated on the other side - after the ink is dry, re-assemble, and the crystal should be found to have moved some 100 Hz. The procedure may be repeated as required, with further dots of ink (not on the same spot, as far as possible). Generally, about 10 KHz shift is possible; if it is known that a larger shift is required, several dots may be applied at once. The frequency may drift a little in the first hour or so, but generally by the next day the crystal will be steady. Finally, remember that a crystal may be pulled quite considerably by the use of a 50 pfd trimmer in series with about 10 turns of wire on a ⅜" former in series with the crystal.

COMMAND, CONTROL AND CO-ORDINATION.

G3NWZ

(The following article was found among the effects of the late Major Donne, G3NWZ/RSARS 0045. We are indebted to Mrs Donne for giving permission to reprint in "Mercury". Although not dealing with "amateur" communications, it is felt that the article will be of interest to any members who have been, are or will be concerned with military communications. -Ed.).

INTRODUCTION.

Since time immemorial man has tried to copy nature in various ways from the first ill-fated attempts to fly, to the comparatively more recent awareness of the basic principles of flight. Numerous examples can be cited; radar from the bats night flying; the tank from the armadillo; camouflage from the squids inky screen and many other natural examples taken from the world of natural history.

Invariably, where man has copied nature he has first made the error of trying to imitate the exact item rather than search for and simulate or apply the basic principles; here flight is a prime example where the first attempts were made to copy exactly the form of bird's wings from wax and feathers. Where the basic principle has been appreciated from the first man has made rapid advances, as in radar, thus showing that where these principles have been grasped initially man has taken advantage of millions of years of evolutionary processes.

In the field of intercommunication the pattern of development has been similar to the development seen in flight, the nervous system of man is parallel in many aspects to the development of line communications. A cross section of a nerve or bundle of nervous tissue functions in the same way, and looks like a cross section of multi-pair underground cable; conductors, insulating sheath and outer sheath are all similar. The imitation of the original in nature has been faithfully and satisfactorily copied.

AIM.

This paper will consider command and control of the modern army in the field in comparison with the nervous system. It is assumed that, being man, one is aware of the efficient and adaptable human nervous system. Although we look upon the human system from a prejudiced eye we can say that it is the most highly evolved system to be found in this world of nature. This paper will, therefore, deal primarily with the human nervous system.

THE HUMAN NERVOUS SYSTEM.

This can be divided as follows :-

(a) The Central Nervous System consisting of :-

(i) The Brain.
(ii) The Spinal Cord.
(iii) The Nerves

(b) The Sympathetic Nervous System.

Group (a) above deals with movement, sensations and special senses such as sight, hearing, taste and smell, and group (b)with regulating automatic functions of the body.

THE BRAIN.

A highly developed continuation of the Spinal Cord it consists of :

(a) The Cerebral Hemispheres in which are received all sensory impressions of the body and from them depart all voluntary movements. "Here appreciations are made" and the area consists of millions of nerve cells in a layer covering the surface. The surface of the Cerebral Hemisphere can be allotted to various activities. i.e. a Speech Area, a Visual Area, etc.

These can be compared to the Operational and Intelligence Staff in a Field Headquarters and, if the parallel is closely applied, should consist not only of the Staff officers who make the appreciations but also a single but complex computer to assist and store factual information.

COMMAND, CONTROL AND CO-ORDINATION - Contd.

This computer should be closely linked with every other Staff branch. Since the human nervous system is used to full capacity constantly during waking hours then, similarly, this computer should be constantly fed with information from all parts of the field force.

The intelligence communication system to be used to the full, and reports constantly received, including "Nil Returns" and "NTR". By this means the fullest use is made of the computer and the system is capable of presenting the most up-to-date data from every section of the army to form the most accurate appreciation possible.

The Visual Area of the Cerebral Hemisphere which is concerned with the visua1 sensations received from the eye can be equated to the long range patrol reports focussed on to a particular area to gain additional information from it. This area, although separate from the other areas of the Hemisphere is, however, closely linked within the Brain and here again can be said to consist of a specialised interpretation staff dealing with battlefield surveillance, drones, etc. The vital factor is, that while this staff controls the focussing, the information is fed direct to the computer, therefore any appreciation made by any branch of the Staff with the aid of the computer is based on constantly changing, but up to the moment, data. The idea can then be envisaged in a drone aircraft transmitting data direct to the computer, possibly several items, wind, humidity, ground conditions, etc., the staff merely controlling the focussing on a particular area without processing the data before it is fed into the computer.

The other areas of the Brain can similarly be applied, the motor and sensory areas controlling the best position of the limbs are equivalent to the Staff determining the best tactical location of forces dependent on the numerous factors portrayed by data from the computer.

(b) The Cerebellum - this controls balance or co-ordination of complex movements such as walking. It is considerably smaller than the cerebral Hemispheres and when applied to the Staff could be called a Study Group or Methods Control. Once a new activity has been found to be necessary and learnt (i.e. an air strike) a "drill" is perfected and applied when necessary. New factors affecting a change in co-ordination are considered and the most efficient method adopted. In the present Staff concept the ratio of specialised staff in this group to the planning staff is well below that shown in the human brain.

THE SPINAL CORD.

This is the central trunk cable of the nervous system and from it 31 pairs of nerves run to different parts of the body. The Brain gives rise to 12 pairs concerned with sight, hearing, taste and smell.

(a) Apart from this main central nervous system there is also the sympathetic nervous system. Whilst the former is concerned with sensations the latter deals with all purely automatic functions, in fact, the automatic day-to-day administration. This shows an increased layout for the services in the field to that layout at present employed. The central nervous system allows for two types of nerve impulses, the afferent and the efferent, incoming and outgoing messages. Since the nervous system covers the whole body then it can be seen from the foregoing that two types of messages are constantly transmitted to the brain, sensations concerned internally with the body (states of fuel, fluids etc.) and external sensations (the hand in contact with an object). All this data is constantly fed to the computer.

(b) Reflex action, this allows for immediate automatic action to be taken when necessary with the Brain as information addressee. Here one envisages all Battalions of a field force being pre-briefed for 12 hours action on drills to be carried out in the event of a series of enemy actions, patrol activity, attack, etc.

The drill is automatically carried out at the lowest possible level with reference to a higher HQ.

THE NERVES.

These, apart from making up the system of control, are also spread over the whole body area, those portions of the body which receive the most sensations are the most liberally supplied and the

nerves themselves become specialised (the rod and cone cells of the eye, the particularly sensitive finger tip). The nerves are also in direct contact with the muscular system and here an interesting comparison can be drawn in comparing the ratio of intelligence (sensory afferent) nerves to operational command (efferent nerves).

It is interesting to note also that in the distribution of the nerves thick webs (ganglia) are formed in certain areas but apart from reflex action all intelligence and control are linked directly to the Brain.

Delay or consideration at a lower headquarters would not be acceptable, we could not afford to have a small brain at each elbow controlling, under the direction of the Brain, the movement of each hand. From a security point of view this could not be tolerated because co-ordination between these two subsidiary brains may be faulty.

PHYSICAL SECURITY.

As we know, the Brain in securely protected in the skull, as likewise the Spinal Cord is encased in the vertebrae. In a communication network covering an area, however great the electronic security is, there is an increased danger to the physical security of each communication centre, particularly where specially trained deep and long range enemy patrols operate. A communication centre held by such a patrol could disrupt a large section of an area layout.

There is no question of a similar physical security of field communication to that of the human brain, the parallel is electronic security to avoid any possibility of the enemy interfering with or intercepting the communication system.

OTHER MEANS.

One further means of communication should be mentioned. This is the secretion of hormones, they form a chemical method of co-ordination, secreted from glands in different parts of the body they may be likened to specialised officers. The hormones act as stimulatory agents to various parts of the body in order that certain functions may be carried out such as digestion and overall increased activity when experiencing rage or fear.

A COMPLETE RE-APPRAISAL.

This paper has so far considered the basic principles of communication as found in the human body. It is now suggested that the system be applied to the full in a field force.

Firstly, the present system, in principle, is some way down the evolutionary scale, a system to cover an area of a battlefield would lead to an amoebic speed of the forces. In the Hydra, a relatively simple animal, the nervous system consists of a network of nerves covering the whole body area, capable only of reaction to stimulus; in a higher animal, the earthworm, these are formed into ganglia and are similar to a chain of command headquarters.

(a) Headquarters.

There should only be one headquarters serving the whole force however widespread, this headquarters necessarily sited out of reach of the immediate battle area, copiously and continuously supplied with information of every description gathered from battlefield surveillance, intelligence reports, long range patrol reports and battle contacts. All this information to be directly available in a readily assimilable condition to be fed into the computer. The flow of information traffic to be continuous even if "NTR" (this has the advantage of showing immediately any breakdowns in communications systems as well as withholding information from the enemy that he may gain through traffic analysis).

There is no subsidiary headquarters to delay information being received nor is it necessary to disseminate information to them. The staff at the central headquarters is complex and although each section deals with a specific sector or detail they are all closely interconnected and information available to one section is available immediately to all the others. Thus a report of an enemy concentration, 300 miles away, received from an aircraft (manned or drone) or a patrol, is at once passed to planning section for action and all other branches for information

COMMAND, CONTROL AND CO-ORDINATION - Contd.

also being stored within the computer. To allow all sections of the Staff to be closely inter-related each branch (mobility, fuel supplies, etc.) will be linked with closed-circuit television and inter-office communication.

One may say in relation to the present Corps that each Brigade staff still controls the action of its Battalions, etc., on the ground but the staff is sited with the other Brigade staffs at Corps Headquarters. This, of course, immediately gives greater efficiency because an integrated staff can specialise if necessary.

It can be argued that the present command system already operates in a similar way to the human nervous system - this would be true if the full use were made of the present day electronic advances. But, as the system approaches a higher position in the evolutionary scale the "Brain" can become more complex, be located further back in the rear areas, and be capable of processing and controlling details covering a larger area of command.

In the past communication systems have been evolved with the fighting troops and, as the systems have advanced, so the speed of battle has increased. During the present time electronic communications have far outstripped the speed of battle but the equipment is still being applied to battle formations similar to those of the last War. As in the human, nerve and muscle cells must grow together.

Equipment can now operate at longer ranges, therefore headquarters must be situated further from the strike arms. Personal contact by the commander can still be maintained by the personal helicopter.

The headquarters must be mobile and always mounted in vehicles, linked by VHF radio between branches and communications centres, and HF high power links to units in the field.

The Staff must include Air Staff as well, for air re-supply, liaison, strike and evacuation. Specialist day and night staffs must operate continuously over the 24 hours to maintain the constant information details.

(b) Fighting Troops.

These must be pre-briefed for action up to 12 hours, completely mobile and directly connected to the Headquarters. For instance, a request for artillery support called for during an attack can be fed through a small data system box operated by the observer immediately into the information link, extracted at HQ, and detailed by RA, staff or air support direct to guns or aircraft available, thus ensuring maximum effort available and compatible for the strike.

(c) Administrative Troops.

Similarly pre-briefed for 24 hour working and linked directly to their own staff section. These units will pass information back on size and locations of stockpiles, position of supply columns, airfields, etc. Orders will be received direct from the staff to move to certain areas, or increase normal supply.

(d) Communication.

A 24 hour continuous secure system is required from Staff to troops capable of 300 miles range. Messages will be typed directly by the Staff on to tape to allow full use of the system. The channel availability to a unit will depend upon the type of unit. Local communications will be by VHF or UHF radio within units and a series of common user frequencies allotted for air strike, medical evacuation, etc. Thus a request for a helicopter for air evacuation would be passed on the information link and details of Time Over Area returned to the unit. At the allotted time a unit radio moves to common air-ground evacuation frequency for close guidance. No line will be used except for local exchange but this will be the exception, a form of VHF radio exchange to link Headquarters branches is required. Radio Relay can be used in the deployed Headquarters and possibly for lateral links.

e) Liaison Officers.

In ultra-light autogyros/helicopters. Also Despatch Riders to form additional links where necessary for operations.

COMMAND, CONTROL AND CO-ORDINATION - Contd.

(f) Alternative Headquarters.

Siamese twins are rare and, if there are to be two Headquarters, they must have Radio Relay links between the computers situated at each Headquarters so enable information to be kept up to date. Each Headquarters must be the exact replica of the other or a different form of co-ordination would come about with a resulting loss of efficiency.

SUMMARY.

This paper has shown a possible interpretation of the principles of command and control from a study of the human system of control and co-ordination. If this interpretation is correct the present system of command and control in the field can be simplified, but will become more complex in the Headquarters. The ratio of Command, Intelligence and Request traffic may, in future, vary considerably to the present ratios. The system would also prove more adaptable to environmental conditions as has already been proved by man.

(The above article, although written about 16 years ago, shows that the radio amateur is capable of futuristic thinking and adapting his knowledge to help improve things around him. - Editor).

P1794 - RESULTS.

Only one correct answer (in fact, only one answer!) to the "Pieces of paper" code problem. It came from Chas., G3XTL/RSARS 0334 who told us it read "SEE YOU AT ALDERSHOT LAST WEEK IN JUNE 1975". It was a matrix code, with pairs of letters along the top and down one side of a square divided into 36 (6 X 6) smaller squares. The top row read AE, GH, IJ, KL and the side row MN, OP, QR, ST, UV, WX. The 36 small squares contained the alphabet followed by the numerals 1 - 0. From there on it was easy!!. A 50p voucher on its way to Chas. Congratulations!.

P1794 - PROBLEM.

The ferry from Zeebrugge had just docked at Harwich. The Radio Officer, always keen, smart and observant, had kept an eye on this particular passenger. Just before reaching Harwich he had sent a telegram to P1794 (he reads "Mercury" you see!). On the quayside stood a figure with a pulled-down trilby and turned up raincoat collar. It was P1794. The RO pointed out "the" passenger. "Strange fellow" said the RO "Keeps on mumbling about "Ten Bees" and dropped this piece of paper". P1794 took the paper and glanced up at "the" passenger. "We know what he carries, but we don't know where he has been remarked P1794 "But I think this should tell us". He glanced at the paper and read :

5436557W5052210W4823430W4125210E44492028E47301903E44252606E4657726E
52321325E050421E.

"Ah, Yes" remarked P1794 "He's been to quite a number of places", "Anywhere interesting?" asked the RO. "See for yourself" said P1794 handing over the piece of paper and leading away "the" passenger.

The piece of paper has been back and forth to the Continent several times since that fateful day but the RO is none the wiser. Can you help him out, by listing where "the" passenger had been and why? Let RSARS HQ know before 1st March 1976. First three correct solutions get 50p.

HELP!

George RSARS 0927 writes "Has any member two valves type 12A7. I have searched high and low for these to no avail. They are around 1933 vintage, I think. Please contact me (address below) stating price". G. Kirk Esq., RSARS 0927, 110 Meadow Road, BEESTON, Nottingham, or Telephone Nottingham 257396.

IS AMATEUR RADIO NECESSARY?

(This article was originally printed in the Australian EEB for February 1973 and later reprinted in "Amateur Radio", the Journal of the Wireless Institute of Australia. We are indebted to the Editor of "Amateur Radio" for permission to reprint this interesting article in "Mercury". Although some of the statements made may not apply directly to the U.K. (bandwidth on 2 Metres etc.) THE MESSAGE IS THERE!! - Ed.)

A : Have another beer.	B : Don't mind if I do.
A : What are your thoughts on repeaters?.	B : All in favour of them. You fellows are squeezing into less and less space.
A : Well, that's good isn't it?, we're using the bands more efficiently.	B : Yes, it certainly is good. There are a lot of other chaps who want that space, and it looks as though they ought to have it.
A : Oh?.	B : You realise, that say 80 Metres is ideal for people doing work in the outback?.
A : But why 80 Metres?. Why not 81 Metres?.	B : All right, but THEY want 80 Metres, and the equipment is already commercially available.
A : But we have already got plenty of amateurs on 80; just listen to the QRM any weekend.	B : But how dead is it during the week?. And what is to prevent you doing all your operating with VHF Repeaters?. You could get nearly as much DX from a chain of repeaters as you get from 80 Metres.
A : But that's not fair!. A lot of blokes prefer to build HF equipment which is less critical of components and adjustments than is VHF gear.	B : Oh yes, and how many people do build their own any more?.
A : Plenty; the amateur magazines are full of constructional articles.	B : Do you build?.
A : Well, no, but that's a special case, I've just got too much to do for the wife and my job.	B : It's not so special! When more people were constructing they were just as busy. But let's return to the original point. You chaps have already lost a large slice of 80 to commercials who do, in fact, use it constructively. You can hardly assert that most of amateur operation is constructive nowadays. Furthermore, repeaters show that you can operate on much less space than you have been given. Why for instance should you have 4MHz on 2 Metres when, in fact, you produce the most activity there from FM contacts leaving some 3 MHz largely unoccupied.
A : But the low end is certainly occupied very heavily by AM, etc.	B : Sure some 200 - 300 KHz worth, that's heavy?.
A : We have to plan for the future; more amateurs will need more frequencies.	B : The present channel spacing could be reduced, and more amateurs could be put into each channel.
A : This would turn amateur operation into one great Net.	B : Isn't that the direction it's going now?.

IS AMATEUR RADIO NECESSARY - Contd.

A : How about the individualists who don't want to be crowded in with the others?.	B : Let's keep our priorities in mind. The important thing is NOT what amateurs want but what Societies need.
A : I suppose that "Society" needs space on 40 and 80 Metres while there is ample space available to them outside of our bands.	B : There is such space, but you must admit that the propaganda stations find a hand-picked audience already at hand in the amateur bands.
A : Amateurs are not interested in propaganda!.	B : Then why don't more of them jam the broadcasts of the intruders?. Only a tiny signal sitting on one of their frequencies can cause havoc.
A : Amateurs have more important things to do. The fact remains that the intruders have no business there; are you supporting their propaganda?.	B : Certainly not. Arguments have, in fact, been advanced in favour of your having more space in 40 Metres, but this was opposed by the government of Infrabovia - with whom we are presumably on friendly terms. What more can be done?.
A : At least we shouldn't loose the frequencies to which we are entitled.	B : Are you entitled to them?.
A : Yes, we were given these frequencies by international agreement.	B : Modern tendencies towards band-sharing show that this agreement is no longer valid.
A : But that's not fair!.	B : So?. What have amateurs done in recent times to justify their use of the bands.
A : Training new technical talent?.	B : That's taken care of nicely by commercial and military training programmes.
A : Civil Defence?.	B : This is already handled very competently by governmental agencies.
A : Message handling?.	B : Not significantly outside North America, and look at the mess it has become over there. They are even 'phone-patching commercial transactions now.
A : At least amateur radio provides a healthy hobby for a large number of people.	B : Have you listened to the bands recently?.
A : Of course!.	B : Do you call "healthy" the kind of obscenity, discourtesy, bad operating and incompetent operating heard there?.
A : That's only a noisy minority.	B : You can't convince the public of that.
A : (Smugly).: Most of our operation is on SSB and the public can't receive that., so they don't matter.	B : The commercials can, and they DO matter. And they want your frequencies. You have shown that with the aid of repeaters you can do with far smaller bands. You have shown by scanty use you need far fewer bands, and you have shown by incompetence and poor operating that you are jolly lucky to have any frequencies at all.

IS AMATEUR RADIO NECESSARY - Contd.

A : If you destroy radio you'll be destroying a large commercial enterprise.

B : Who's destroying radio. Only Amateur Radio. There is much commercial and service opportunity in other directions. Already component manufacturers are recognising this by largely ignoring amateur complaints about component scarcity. The big money goes where the big money is: in the entertainment and commercial communications market.

A : (Gasp) ; I need another beer!

B : Me too. May I make a suggestion that I hope you'll pass on to your mates. You'll have a better chance of keeping the bands if the intelligent majority accepts some responsibility for pulling the Clods back into line. This requires the individual responsibility, and that means you and your friends. If you do nothing, you'll get nothing.

QRP Type?????.

If you are interested in QRP working (and quite a number of RSARS members are) why not join the G-QRP-Club. Drop a line to REV. G.C. DOBBS, G3RJV, 6 REDGATES COURT, CALVERTON, NOTTINGHAM, NG14 6LR. The latest copy of SPRAT (Small Powered Radio Amateur Transmitters) contains a host of information of interest to the QRP man, including Meet the Member, Antennas at DL7DP/P, QRP Work on 2 Metres, Members Ads & Requests, Reducing the Frequencies of Crystals, The DSB-1 TX, G-QRP-C Awards, Prolegomena to QRP Transmitters, FET Regenerative Receiver, etc., etc. Layout and diagrams are both very good.

THE CB STORY.

(The following was published in Paul Dacres' NEW YORK Column in the Daily Express of 24 September 1975. Due acknowledgements are hereby made. - Ed.).

CTIZENS BAND is the fastest growing communications medium since the Bell Telephone. It is estimated that six million Americans are using these inexpensive two-way radios - CBs to the uninitiated.

Here in New York "CBers" gather for weekly "breaks" in a Brooklyn fast-food joint to meet the people they have been bantering with over the air.

CBs work on 23 radio channels open to the public, can be operated by a child, have a 15 mile range, cost about £80 and are available - through a cheap license - to virtually anybody.

They are used by lorry drivers to warn "Smokey down the line" (Police). Private citizens communicate with their home or office; "See you in a few minutes, darling". And even hookers were discovered monitoring one of Los Angeles' main highways: "This is Tender Love. I've got Lady Jane. We're ready for a pit stop".

Although initially suspicious of CBs, the police now welcome and even use them. Motorists wanting assistance or reporting a speeder just tune in to the police car.

Gossip, however, on CB is strictly illegal. Not that that baulks the fanatics.

POLICE REPORT.

From Allan, RSARS 0312, who, when not on the bands as G3YRT, is a police officer, comes the following:

"Acting on information received I took observations on the 73/88th Foot and Mouth. Numerous offences were revealed concerning dress and equipment, or rather the lack of it.

I am very concerned, however, with the conduct of one soldier in the Summer edition of "Mercury" (believed to be a Guardsman Webb), who is clearly guilty of indecent exposure on pages 14, 24, 31 and 33. From the Regiments Battle Honours I assume that Guardsman Webb is either the most decorated soldier or the Regimental mascot".

(We were fortunate in getting Guardsman Webb released from civil custody into the custody of a military escort. He is, at present, in close arrest and will remain so until found guilty by a properly constituted court. - Ed.).

A QRG SHIFTER FOR GENERAL USE.

GW3ASW/0559.

A few years ago I required a VFO that could be controlled "from afar". Flexible drives were 'out'. The QRG of the finished VFO was high and was then mixed with a crystal oscillator. The original prototype was a valve version - with not very happy results!!. Transistorisation appeared to be the answer and after a few false starts, the following circuitry evolved. Scaled up (or down, if you prefer) the idea entered my thick skull that it could be utilised at low frequencies. Since that time I have used this circuit in VFOs requiring limited "sweep" down to 10 MHz. Hearing a request one day for a VFO for 2 Metres this circuit was resurrected and modified to give a fundamental on 8 MHz.

No special claims are made for this unit, except that if precautions are made to shield the Unit (which, even with the alternate Buffer Amplifier, can be built into the smallest of diecast boxes) against heat and other effects afflicting the VHF unit, can perform an excellent and stable job AND give a good CW note at 2 Metres.

The variable resistor and associated cable can be extended (I have used it on other projects with a control line of 45 feet), but must also he well screened and, if possible, the variable resistor should be built into its own screening can. The voltage source should be well stabilised - with a 9 Volts battery the unit has remained stable within 1½ KHz over a 1 hour period on 2 Metres (2000 μfd was used across the battery to 'assist' stability). The capacitor marked * is nominally as shown and, at 2 Metres, gives a swing (with a 9 Volts battery and a 25 Kohms pot.) of about 745 KHz and it is recommended that no attempt be made to increase this swing by increasing the value of the series capacitor to the Varicap.

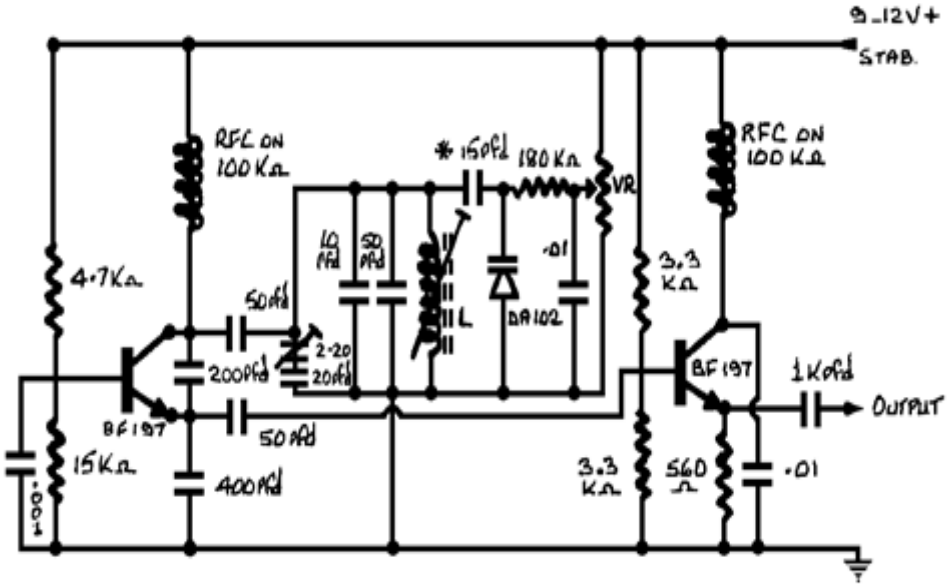
A valve Buffer Amplifier can follow the unit and will give more than enough output to feed the normal trebler chains. Modification of the circuit to give an output at 24 MHz can easily he made, but in this case it is suggested that the series capacitor (*) he reduced to 10 pfd. Layout is not critical at a QRG of 12 MHz and below, and can follow almost as per diagram layout.

The alternate Buffer Amplifier will give just a hit more gain but there in not a lot to choose between them as far as isolation goes, particularly as the use of a valve buffer is very nearly an imperative factor to provide further drive.

Finally, whilst at low frequencies stability is excellent without undue fastidiousness about components it is suggested that great care is taken to select and install heat and temperature compensatory components in the oscillator circuitry.

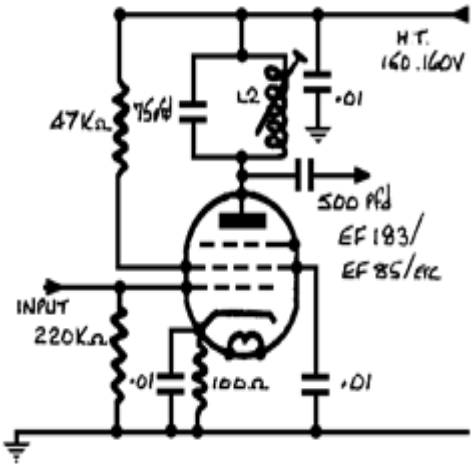
(Diagrams opposite - Ed.)

A QRG SHIFTER FOR GENERAL USE - Contd

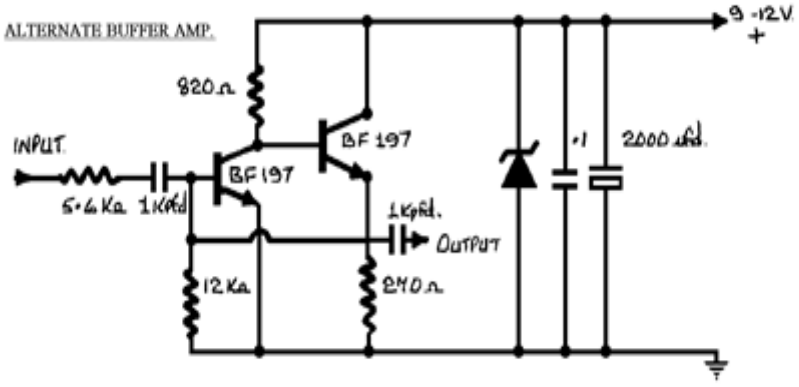


VR = LINEAR CARBON POTENTIOMETER 10 Kohms - 30 Kohms.
L1 = 30 turns of 26g DSC on ⌀ former with ferrite slug. (for 8MHz).
L2 = As L1.
* - Band "cover" will depend on this series capacitor (See text).

VALVE BUFFER AMPLIFIER



VALVE may be EF183, EF85 or 6BZ6 semi-remote cut-off type.



SOLID STATE TELEPRINTER DEMODULATOR.

G8LT/RSARS 0290.

(The Royal Signals Amateur Radio Society is indebted to Wireless World who have given permission for the following article to be reproduced in "Mercury". Acknowledgements are hereby made to Wireless World and our thanks are extended to the Editor. Readers of "Mercury" will see that the article is of the usual high standard normally associated with Wireless World and with Robin Addie, G8LT/RSARS 0290. The article first appeared in Wireless World for February 1973, and Robin reports that this unit has given very satisfactory service. - Ed.)

The article describes a modern radio teleprinter terminal unit using the operational amplifier technique and illustrating the practical problems for which these devices provide admirable solutions. The author describes his approach to an American design, providing various options such as auto-start and anti-space circuitry which may be excluded should the constructor require a simpler project.

In the world of amateur radio the use of machine telegraphy in addition to the more common modes of telephony and CW Morse, has increased in popularity during the last ten years. Generally referred to as RTTY (Radioteletype) the technique has advanced to the point where good copy can be received in limiting conditions of signal strength and noise by the same order as CW but with speeds of 60 wpm or higher. It represents about the most economical use of channel space of all the modes of communication. It is not surprising therefore, that many, not involved in transmitting activities, have been interesting themselves in receiving RTTY transmissions. The unit to be described represents probably the best practice in amateur use today and no originality is claimed by the author whose object is to create interest and show a unit that can be made by anyone with an understanding of the principles involved.

PRINCIPLES.

RTTY is a stop-start system of machine communication where the receiving printer is kept in synchronisation with the transmitting machine by means of two signals, one at the beginning of a character to start the machines scanning the elements of that character and one at the completion of it to halt both machines in readiness for the following one. In the Murray code used in RTTY, seven units are used two for stop-start and five for transmitting the character. It follows that, when a radio link is used, only two significant signals are sent, i.e. stop and start or, as they are usually called, mark and space, respectively. These two signals are sent by shifting the carrier frequency by an exact number of hertz, moving it from the mark or resting state, to the space or starting condition. Early practice used a shift of 850 hertz, but because of channel space and the prevalence of interference in the overcrowded amateur bands a 170 hertz shift is rapidly becoming the norm. The latter enables better receiver selectivity to be employed but increased the stability problems. At VHF it is common practice to use tone modulated a.m. transmission where the tone frequencies correspond to the amount of shift used in frequency shift keying systems.

The purpose of the demodulator is to accept two discrete audio tones representing mark and space from the output of the receiver and to process them so that the output signal from the demodulator is capable of driving the operating magnet of a teleprinter. The tones are obtained by the use of the beat frequency oscillator or envelope detector in the receiver and certain frequencies have become established as standard. For 650 hertz shift, mark is 2125 hertz and space is 2975 hertz. For 170 hertz shift mark is 2125 hertz and space is 2295 hertz. Since precise frequencies are used, part of the function of the unit is to discriminate to the greatest possible degree against all frequencies other than those for mark and space. It must also cope with a wide dynamic range of signal and, because of selective fading a large disparity at times between the two signals at its input..

A number of devices are used to achieve a clean and constant output to the printer. The design includes two band-pass filters (one for each shift), an effective limiter, sharp frequency filters for mark and space on both shifts, also an automatic threshold corrector which balances the mark and space signals to enable the slicer which follows to operate at the correct change-over point.

SOLID STATE TELEPRINTER DEMODULATOR - Contd.

A number of other features have been designed-in which will appeal especially to the enthusiast. The first of these is the 'anti-space' circuit. This comes into use should an unwanted signal appear on the space channel, which would normally allow the printer to run free. The second is the 'autostart' circuit by means of which the receiving station can be left on a frequency so that as soon as an RTTY signal is recognised the receiving printer starts, and, after a predetermined delay, copy can be printed. When the signal disappears, the process is reversed so that all signals appearing on a given channel can be copied without the printer motor being left running. Also, misprints caused by non-RTTY signals or interference are automatically eliminated.

The design evolved from two earlier versions using valve techniques and incorporates all solid state devices including some nine of the more readily obtained op-amp i.cs.

The unit constructed by the author and illustrated in the photographs uses SN72709 op-amps and the circuit diagram shows pin numbers referring to this type. Another suitable type is the 709-C the pin numbers for which are shown in Fig. 2. Both types are readily available, relatively inexpensive and enable the whole unit to be concentrated into a very small space.

For those who want the simplest arrangement, it is possible to feed the signal directly to the limiter stage but the use of a separate band pass input filter for each shift is well worth the extra trouble. The circuit shows the latter method and the photographs illustrate the terminal unit complete with both filters.

CIRCUIT.

Referring to the circuit diagram (Fig. 1) limiting is carried out in the op-amps IC1 and IC2 and as little as 200 μV will cause limiting to occur. The signal diodes at the input are to protect the amplifier from overload. While the amplifiers operate open-loop to give limiting, reception without limiting is available when a 47 Kohms resistor is switched-in by S1a/b to control the amplification.

Bandpass filters are of the three-pole Butterworth type using a dual-winding 88mH toroid commonly used in telephone practice and therefore easily obtained. The wide filter (850 Hz shift) has a bandwidth of about 1 KHz and the narrow one (170 Hz shift) is about 275 Hz wide. In the first case the two halves of each toroid are connected in series to give 88 mH and in the second they are in parallel, giving 22mH. By this means the terminal impedances are made about the same.

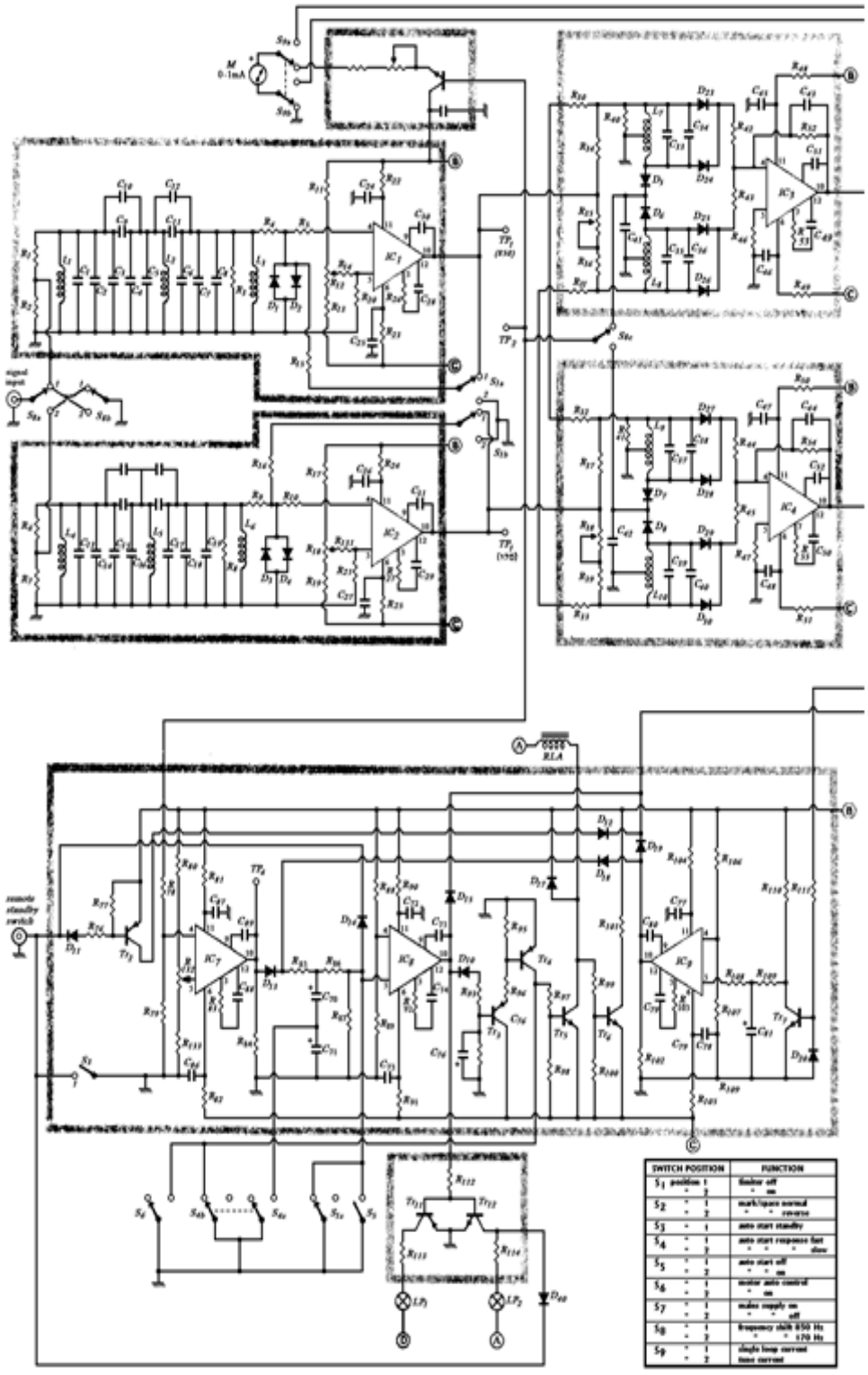
The mark and space channel filters for the different shifts are quite separate. No attempt at switching the space filter components is made. Earlier demodulators have used up to three stage passive filters for this purpose but the present design of discriminator filter uses only one active filter in each channel. The adjustment of these is critical and will be described later in the article but, provided they are set up with care, results are entirely satisfactory. The two diodes D5 and D6 provide a control voltage on both mark and space for the operation of the auto-start and tuning meter system.

Full-wave detection is used in both channels (D23 to D30) and germanium diodes are used because of their lower forward voltage drop compared with silicon types.

The low-pass filters (IC3 and IC4) use amplifiers with frequency selective feedback applied. Fig.1 shows the pin connection numbers for the dual-in-line package. The alternative T05 type package may be used in which case the pin connections shown in Fig.2 can be directly transposed into the circuit. Mechanical pin layouts for the different packages are shown in Fig.3.

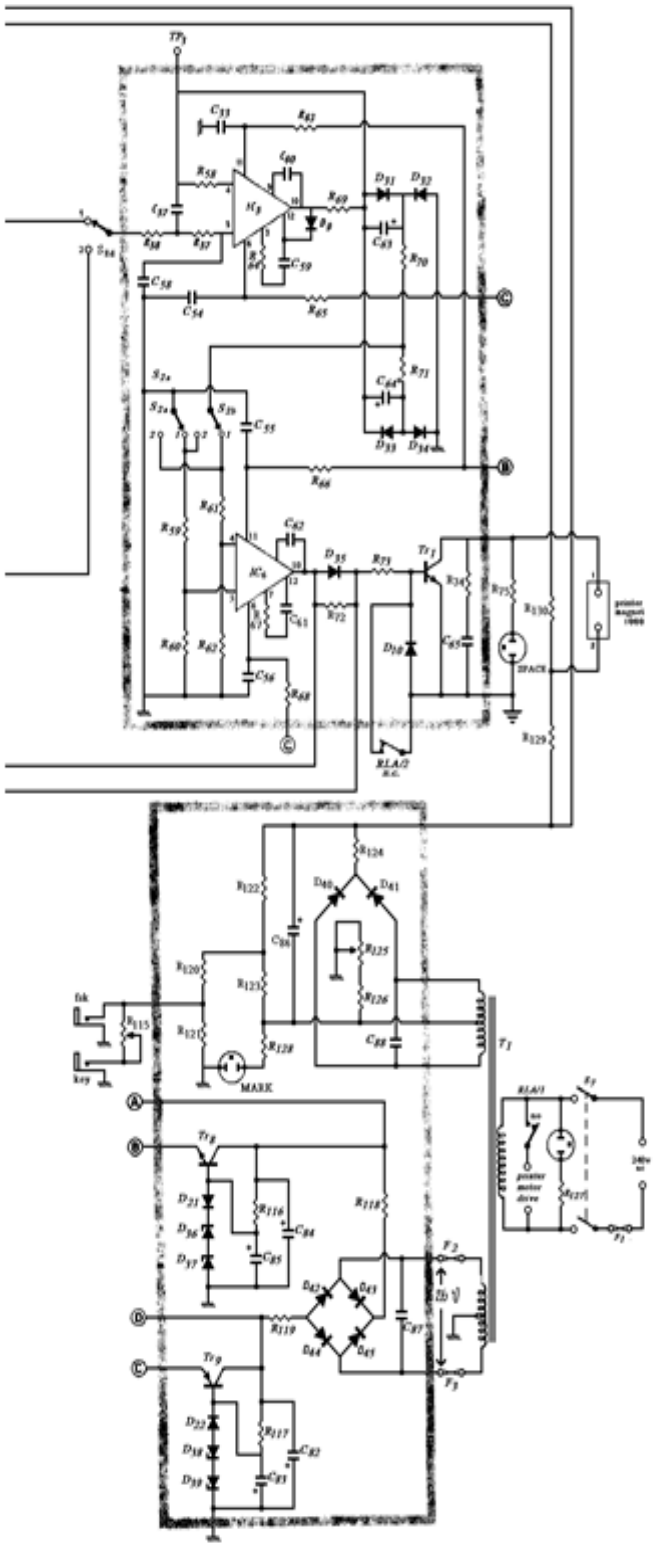
There are conditions in which better copy is obtained when a.m. detection is used without the limiter; a method of balancing the mark/space signals from the low-pass filter is necessary. This ensures that the change-over point of the slicer IC6 occurs at the right signal transition point. The 'automatic threshold control' IC5 uses diodes D31, D32, D33 and D34, the output signal being symmetrical about earth. Switch S2 simply reverses the polarity of the signal and to the slicer if the transmitted frequencies of the mark and space signals are reversed.

SOLID STATE TELEPRINTER DEMODULATOR - Contd.



SWITCH POSITION	FUNCTION
S_1 position 1	
S_2	
S_3	
S_4	
S_5	
S_6	
S_7	
S_8	
S_9	

SOLID STATE TELEPRINTER DEMODULATOR - Contd.



The slicer is operated at full gain and as steps have been taken in the design to keep the output of the low-pass filter as clean as possible, it is extremely sensitive and Irvin Hoff's original model ("Mainline Solid State modulators" by Irvin M. Hoff, W6FFC, RTTY Journal, Sept., Oct., Nov., 1970) could be changed at the slicer from full mark to full space with the input to the limiter changing as little as 1 Hz - even with the 850 Hz channel filter in use. The author's version exhibits similar characteristics and has proved to be one of the most attractive features of the unit.

The output of IC6 at pin 10 swings from about +11V on mark to -11V on space. This drives the keyer transistor TR1 with about 5mA forward base current, via resistor R73 mark signals. For space signals D35 blocks negative potentials yet allows a small negative current to be applied via the reverse resistance of the diode and R72 to assist the transistor in switching-off. The keyer is rated such that the magnet of a single current operated machine can be driven directly from the collector, which requires up to 60mA. In the author's version the unit had to run a Creed machine using double current operation for which this keyer stage was unsuitable.

This was overcome by making the keyer drive a high-speed mercury-wetted reed relay which had the added advantage of providing keying for two quite separate loops. Furthermore, the keyer current could be limited to a much lower value, considerably under running the 2N5655. The changes to revert to double current operation are simple and do not require any changes to the printed circuit boards. Two examples of additional keying relays are shown in Figs. 4 & 5. In the former, a mechanically biased reed or similar relay is used and the coil should be energised to make the mark contact and de-energised to make the space. The relay current should be set to the recommended value by R1. In Fig.5, a Carpenter or similar type of polarized relay is used with the two coils connected as shown so that the current flowing through L2/R2 provides electrical bias towards the space contact. Resistor R1 is selected to give twice as much current through L1 as is flowing through L2 when the keying transistor TR1 is conducting, thus allowing the mark contact to be made. The mark and space contacts on either of these relays would drive a double current printer magnet in the conventional way.

There are two separate power supplies, one being a differential supply giving +12V and −12V regulated as well as positive and negative unregulated. The second is the loop supply for driving the printer and gives 180V as well as shift voltage for transmitter keying if required. The regulated supplies use transistor stabilization in conjunction with Zener diodes.

So far, only the signal circuits have been described but as mentioned earlier there are a number of other features built into the design, the first being the 'anti-space' circuit.

For a 60 w.p.m. RTTY signal, the character which contains the most space units is the one that is controlled by the blank key, and does not exceed 132 milliseconds; It follows that any space signal longer than this will not be an RTTY signal and may well be an unwanted one which, without steps being taken to suppress it, would put the keyer to space and let the machine run loose. The anti-space device continually monitors the space signal and when this exceeds the 132ms by a significant amount, it overrides the incoming signal and places a mark voltage on the keyer stage until the condition ceases. At the same time it places the auto-start circuit to the no-signal state. The first mark signal that arrives when the printer is thus held discharges the anti-space circuit instantly and copy is resumed. All this is achieved by transistor TR7 tied to the output of IC6 and followed by IC9. The output of IC9 runs from −10·8V on mark to +10·8V on space. The space voltage is then fed to the base of TR1 putting it into mark-hold after the time predetermined by the circuit constants R109, R110 and C81. This feature is very necessary when unattended operation is used as it effectively prevents the printer running wild and producing sheets of useless spoiled copy due to the presence of an unwanted signal on the space channel.

It is now appropriate to turn attention to the associated auto-start circuit included in this design. Basically, its purpose is to discriminate between a genuine RTTY signal from which copy can be taken and other signals, be they Morse code or voice transmissions. Advantage is taken of the fact that a Morse signal probably consists of no more than 50% key-down time, voice has an even lower duty cycle whilst RTTY, in the form of a frequency shift signal, represents a 100% duty cycle when both mark and space signals are considered. The auto-start circuit therefore is designed so that a high duty cycle will actuate it while a lower one will not. It samples both mark and space signals simultaneously, combining them into one control voltage which, in turn, charges a capacitor and, after a predetermined time, trips a relay. This relay turns on the printer motor, at the same time removes the mark-hold bias and allows printing to take place. The delay time is largely determined by C70/C71 and can be selected to give a turn-on delay to suit the user. Should the signal stop, a network quickly discharges this capacitor and restarts the count-down in the relay control circuit. If it does not reappear then the motor is allowed to shut-off and the system is ready for the start-up cycle again. The finite delay for turn-on is essential if transient signals are not to cause the printer to start for the wrong reasons. When operating into an auto-start net, the sending operator starts his transmission with a 3 - 4 second mark signal or a few preliminary letters to ensure that the delay is

SOLID STATE TELEPRINTER DEMODULATOR - Contd.

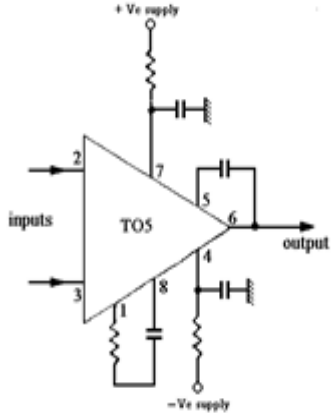


Fig.2. Alternative circuit connections for TO5 package.

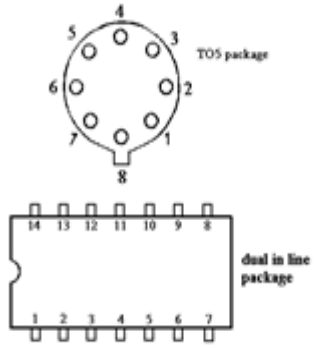


Fig.3. Pin connections (top view).

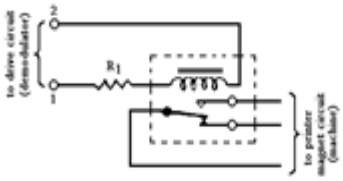


Fig.4. Typical mechanical biased keying relay (type HGSM. 2000Ω coil, or similar).

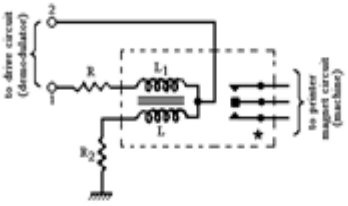


Fig.5. Typical electrically biased keying relay (Carpenter type 3SE1. 250Ω coils or similar).

overcome and the receiving machine readied for use. The turn-off delay is kept just long enough to prevent accidental operation in the event of a sudden fade of signal and in practice will allow two or three characters to be printed at random after the signal disappears.

The circuit uses two diodes D5 and D6 which sample the mark and space channels and combine output voltages; the product is applied to the input of IC7. If the signal is properly tuned, the two voltages should be similar and the combined positive voltages exercise steady control of the amplifier. Resistors R78 and R79 reduce the control voltage for the op-amps, which will not accept more than about 5 Volts. At the onset of a signal therefore the following sequence takes place to put the printer in operation. A voltage of about +7·5v appears at TP2 which in turn produces about +3·6V at the inverting input of IC7. There is a fixed bias on the non-inverting input, pre-set by R81 which determines the trigger point of the amplifier. This bias is overcome by the positive sample voltage and causes the amplifier output to go negative. Diode D13 will not conduct so that the positive voltage which previously existed on C70/C71 disappears and this capacitor discharges via R86 and R87. When it reaches about 2·2V the fixed bias on IC8 takes charge, causing the output to change from positive to negative. At this point the holding bias on the keyer stage via D15 disappears and the printer becomes active while C76 charges fast, via R93. This puts TR3, TR4 and TR5 in the conduct state and this operates the motor relay, the coil of which is in the collector of TR5. The function of TR6 is really nothing to do with this sequence, save that, as TR5 starts to conduct, TR6 is shut-off, and as TR5 passes about 50mA, the load on the power supply is kept virtually constant.

(To be continued)

(To enable members to start sorting through their junk-boxes, the components list is given below. -Ed.)

I

SOLID STATE TELEPRINTER DEMODULATOR - Contd.

COMPONENTS LIST.

Resistors.

10 Ohms 2 Watts	R118, R119, R124, R129.
47 Ohms	R22, R23, R24, R25, R48, R49, R50, R51, R63, R65, R66, R68, R81, R82, R90, R91, R104, R105.
100 Ohms	R20, R21.
150 Ohms ½Watt	R113, R114.
220 Ohms	R69.
330 Ohms	R109
470 Ohms	R74.
470 Ohms 1 Watt	R116, R117.
500 Ohms 5 Watt) Wire Wound)	R101.
500 Ohms 5 Watt) Wire Wound Pot.)	R115
620 Ohms)	R2, R7.
820 Ohms	R130
1 KOhm	R5, R10, R77.
1·5 KOhms	R26, R27, R53, R55, R64, R67, R83, R92, R103.
2·2 Kohms	R8, R73, R89, R93.
2·5 Kohms 2·5W) Wire Wound Pot)	R125.
2·7 Kohms	R86, R107.
3·3 Kohms	R3.
3·6 Kohms	R85.
3·9 Kohms	R99.
4·7 Kohms	R34, R97, R98, R100.
5 Kohms Skel. Pot.) Linear.)	R12, R18, R35, R38, R132.
5 Kohms 5 Watt) Wire Wound)	R126.
5·1 Kohms	R87.
5·6 Kohms	R29.
6·8 Kohms	R36, R37, R39.
8·2 Kohms 1 Watt	R120.
10 Kohms	R11, R13, R17, R19, R76, R88, R95, R96, R106, R111, R112.
10 Kohms Linear) Pot.)	R28.
11 Kohms	R80, R133.
12 Kohms 1Watt	R121.
15 Kohms 2Watt	R122, R123.
16 Kohms	R56, R57.
22 Kohms	R70, R71.
27 Kohms	R1.

Capacitors.

3 pfd	C30, C31.
47 pfd	C28, C29.
220pfd	C51, C52, C60, C62, C69, C75, C80.
270pfd	C32.
0·0047ufd	C49, C50, C59, C61, C68, C74, C79.
0·01ufd	C87
0·047ufd	C41, C42.
0·1ufd	C24, C25, C26, C27, C45, C46, C47, C48, C53, C54, C55, C56, C65, C66, C67, C72, C73, C77, C78.
0·22ufd	C58.
0·68ufd	C57.
10ufd 15V	C63, C64, C81.
20ufd 15V	C76.
100ufd 15V	C83, C85, C86.
100ufd 250V	C88.
150ufd 15V	C71.
350ufd 9V	C70.
1000ufd 25V	C82, C84.

All above capacitors are ± 20% tol.

0·0047ufd	C10, C12.
0·01ufd	C9, C11.
0·022ufd	C4, C5, C20, C22, C44.
0·033ufd	C1, C2, C6, C7, C35, C43.
0·056ufd	C39.
0·068ufd	C33, C37.
0·10ufd	C13, C14, C17, C18.
See text	C3, C8, C15, C19, C21, C23, C34, C36, C38, C40.

C16 is made up of 0·100 + 0·068 + 0·010 ufd.

C39 is made up of 0·033 + 0·022 ufd.

All the above capacitors are ± 10% Mylar.

Inductors.

88 mH toroids L1, L2, L3, L7, L8, L9, L10. (Series connected windings).

22 mH toroids L4, L5, L6. (Parallel connected windings).

Mains Transformer.

T1 125-0-125 secondary 0-25 secondary American type. Or ; 24-0-24 secondary Type MT-100 Henry's Radio.

SOLID STATE TELEPRINTER DEMODULATOR - Contd.

33 Kohms	R40, R58, R72, R84, R102, R110.	Semiconductors.	
47 Kohms	R4, R6, R9, R15, R16.	1N914/916) Or similar)	D1, D2, D3, D4, D5, D6, D7, D8, D9, D10, D11, D12, D13, D14, D15, D16, D17, D18, D19, D20, D21, D22.
56 Kohms	R108		
68 Kohms	R78, R79.		
100 Kohms	R41, R42, R43, R44, R45, R46, R47, R75, R128.	1N270	D23, D24, D25, D26, D27, D28, D29, D30, D31, D32, D33, D34, D35.
150 Kohms	R14, R131.		
180 Kohms	R52, R127.	1N753	D36, D37, D38, D39.
220 Kohms	R59, R60, R61, R62.	1N4005 or similar (600 piv))	D40, D41.
270 Kohms	R54.		
1 Mohm	R30, R31, R32, R33, R34.	1N4002 or similar (100 piv))	D42, D43, D44, D45.
All fixed resistors are ½ Watt unless stated otherwise.		2N5655/5656	TR1, TR8.
		2N697	TR5, TR6.
		MPS3703	TR2, TR3, TR4.
		MPS3394	TR7, TR10.
		MPS6518	TR11.
		MPS3395	TR12.
		MJE370	TR9
		SN72709	IC1, IC2, IC3, IC4, IC5, IC6, IC7, IC8, IC9.

YOU THINK IT MAY NEVER HAPPEN - A CAUTIONARY TALE. GI2DZG/RSARS 0005.

Date : 8th August 1975. Time : 2010 hours GMT.

0005 is seated at the desk of his shack, which is above the hall of a suburban 'semi', writing a letter. The HW-101 is switched off but has its power supply connected to a 13 Amp plug, the socket of which is in the 'On' position. Also connected to the HW-101 via the SWR bridge and Z-Match is the 140 ft long end fed which in supported by a 42 ft. high steel mast at the bottom of the garden. This antenna also runs down the side of the mast about 1 ft from it. The mast also supports a G5RV antenna which has it's 72 ohms twin feeder terminated in two wander plugs and, at the time stated, was lying unconnected on a shelf immediately above the HW-101.

Outside it is overcast and threatening rain. In the distance peals of thunder can be heard and as it comes nearer, flashes of lightning illuminate the darkened sky. 0005 continues writing and notices through the shack window that visitors have arrived at the house opposite and are sitting in the lounge with the light on.

As the thunder becomes louder and the lightning brighter there is suddenly one very loud BANG! and a bright spark appears across the wander plugs of the G5RV. Accompanying this spark is a peculiar "electric" smell and from downstairs the XYL enquires anxiously if everything is alright. When reassured, she remarks that the aerial mast was hit by lightning and looked to be lit up from top to base like a Christmas tree. 0005 continues with his letter, glances out of the window and notices that the light in the lounge of the house opposite has gone out..... but the occupants are still there.

0005 prudently decides to wait for the storm to pass, but as it has become dark he switches on the desk lamp. No joy. He next tries the main light in the shack with the same result and suddenly realises that the main 30 Amps trip switch in the meter box must have "tripped", Proceeds downstairs and discovers that his suspicions were correct, resets trip, and returns to the shack and

YOU THINK IT MAY NEVER HAPPEN - A CAUTIONARY TALE - Contd.

again switches on the desk lamp. As he does so, 0005 realises that the 140 ft antenna was connected to the HW-101. Anxiously he switches on the transceiver only to find that the AF GAIN/ON OFF switch does not function and, in fact, rotates through 360 degrees with no effect. Next the plug connecting the mains to the power supply is checked and it is found that the 13 Amp fuse has gone u/s. What lies beneath the covers of the HW-101???.

With trepidation these are removed and everything appears to be in order, except for the faulty AF GAIN/ON OFF switch already diagnosed. 0005 mutters unkind things but realises that he will be able to replace the faulty component by calling at a certain stockist next day and thus will be able to keep a previously arranged 'sked' on 14 MHz with a DL friend.

Calls next day at the stockist, obtains component, but finds, when trying to fit same that the retaining collar is too short for the nut to go on. More unkind mutterings ensue, and the 'sked' has to be abandoned. Some days later, sitting in shack, inspiration dawns!. Will it work?' An examination of the defective component and its replacement indicated that the collars could be interchanged. This was carefully done, the component wired into place, and then came the moment of switching on. No joy again! Then it is realised that the overload switch in the power supply may also have been triggered. An examination reveals that this is so - the switch is reset - the HW-101 in switched on - talk about 'Ah Bisto' - all is well.

THERE WERE TWO MORALS LEARNED:

(a) Either EARTH your ANTENNA when not operating, or disconnect it from your equipment. IF YOU DO THE LATTER PRINT IN BOLD CAPITALS ON A CARD A NOTE STATING THAT YOUR ANTENNA IS DISCONNECTED AND PLACE IN FRONT OF YOUR TRANSMITTER. It will remind you to reconnect your antenna, as PA's do not take kindly to no load conditions.

(b) One can improvise - if you think about it long enough!!.

TAILPIECE : An examination of the faulty component indicated that its failure was due to a mechanical and not an electrical fault, and that its occurrence at the time of the thunderstorm was purely a coincidence. Considering that the HW-101 was in operation for less than three months it is surprising that a component should breakdown after such a short period. Efforts to obtain a replacement free of charge because of this have, so far, met with no success.

SUGGESTION.

Also by GI2DZG/RSARS 0005.

We realise that in our hobby there are many "White Stick" operators, and, knowing them to be unassuming folk, they probably do not make us aware of their disability. Some indeed may be members of RSARS and, if so, it is obvious that they have not been so afflicted since birth, and are capable of reading English characters in embossed form.

From the point of view of "White Stick" operators the calls of such persons should be announced in a forthcoming issue of 'Mercury' and, when contacted over the air, we, who are blessed with sight, could perhaps with a little trouble, confirm the contact by punching out details on 'Dymo' tape and affixing it to a post-card, so that the recipient could "read" it, This would, I am sure, bring a lot of joy to the recipient and we could add a cheering message to such QSLs.

(RSARS have a small "White Stick Platoon" although one would never realise it when listening to the RSARS Nets) mainly consisting of G4BNI, G4AWI, G2DPY, G4DJI and (I think) G6VQ. The smaller plastic Dymo machines are available from stationers for around 50p, although whether these would he suitable is not known. Our "White Stick" members are invited to comment on the above suggestion. Tnx, Walter. - Ed.).

A KEYED FRANKLIN VFO UNIT FOR MULTI-BAND WORKING.

GM3IAA/0107.

Circuitry and design for All-Band Drive output. By : James McIntosh C Eng MIERE FCIS.

(The following article was sent along by Jim a long time ago. We are happy to publish it for the benefit of those members who are still "valve-orientated" or who may have the bits and pieces in the junk-box. As Jim points out, it is quite possible to key an oscillator and still provide a T9 signal. A lot of work and experimentation went into this project and it is certain that members will find it of interest - Ed.)

At first glance, it might be supposed that this article is on a theme somewhat out of place in these days of transistorised mixer-type VFO's intended to drive SSB type transmitters. But, in fact there is still ample scope and justification not only for the use of valves - still available in vast numbers and of the most modern design - but also for the multiplier type of VFO-Driver unit for amateur band working. This is especially so where the requirement is highly stable output on several bands and the main interest is in CW working.

This VFO was developed from experiments conducted over a number of years and it has formed part of a very successful transmitter. The circuit is shown in Fig.1.

The original experiments showed that provided due care was taken, it was perfectly feasible to build a VFO which, when keyed, was free from chirps and clicks, possessed excellent stability and produced a note comparable with crystal control. The intention was to use the VFO to drive the Top Band transmitter, as well as the 150 watts transmitter which covered 3·5 to 28 MHz, and this it performs admirably.

HOUSING.

The, VFO in housed in an IMHOF type 1054B cabinet, overall sizes 17¼ inches width, 9 inches deep, by 10¾ inches high, and the cabinet is solidly constructed. A chassis measuring 16 inches by 8⅞ inches by 2 inches deep was made locally and is firmly bolted to the front panel, on which is mounted all the controls. Fitted at the rear of the chassis are an earthing terminal, a co-axial socket and a 5-pin male socket, also an On-Off switch and a crystal holder for the Crystal Calibrator (shown in Fig.5).

Matching apertures were cut in the cabinet back to enable connections to be made. The most efficient way to match these apertures accurately to the chassis components is to bolt the panel in position (having first placed a fairly heavy weight on the chassis to ensure that it lies flat to the base), then drill from the outside through the rear of the cabinet and into the back of the chassis. This will fix the centre of each placement and the appropriately-sized holes can then be made in both the back of the cabinet and the chassis.

SCREENING.

The chassis underneath is divided into three compartments by metal screens, the first being 5½ inches wide for V1 and V2, the second 6 inches wide for V3 and V4, and the third 4½ inches for V5. Above the deck are another three screens, placed in line with those underneath and bolted firmly thereto through the chassis.

PANEL.

This holds the different controls: the HRO-type dial for the oscillator section, the two variable capacitors C7 and. C8, two jack sockets, two switches S1 and S2 and the potentiometer P. A small variable trimming capacitor C4, is mounted above the HRO dial, with a milliameter and panel light.

THE DESIGN.

This falls into five stages: (1) The Franklin Oscillator, V1 and V2, (2) The Cathode Follower, V3, (3) The Buffer Amplifier, V4, (4) The Frequency Multiplier V5, (5) The Power Unit.

THE FRANKLIN OSCILLATOR.

Many types of oscillator have been tried over the years, but none has been found to beat the Franklin for stability. True, output is low compared to some other types, but this need not be a

drawback. V1 and V2 are the metal-type 6AG7 valves which have been found to operate exceedingly well in this circuit.

The miniature equivalent 6CL6 has been tried and found to perform most efficiently. (The 6AG7's were retained simply because a supply was available). As a matter of interest, the anode-to-grid capacity of the 6CL6 is about twice that of the 6AG7 and this is reflected in the tuning adjustment of C1.

Components.

L1. This has a value of approximately 35 microhenries and consists of 38 turns of No. 16g. enamelled wire, wound as tightly as possible on a 2-inch diameter ceramic former with 34 grooves. 34 turns are in the grooves, with 4 turns close wound at one end of the winding; length of winding 3⅛ inches. To ensure rigidity, the wire was fed through the jaws of a vice suitably padded with cloth, the vice being adjusted to provide adequate tension, without damage to the wire; the former could then be held and rotated by both hands. The former has a terminal at each end, for anchoring the ends of the winding. It is important that the coil should be mounted well clear of all metalwork, not forgetting the top and side of the cabinet.

Capacitors.

C1, C2, C3, C4. C1 is a JACKSON type "C12", 300 μμfd. This is the main oscillator tuning and it is driven by an HRO-type gearbox with the HRO dial covering 0° - 500°. C2 is the loading capacitor and comprises (a) 600 μμfd silver mica (2 X 300 μμfd) 5%, (b) 30 μμfd ceramic 750 N.T.C.; and (c) 20 μμfd silver mica 5%.

C3 is a 60 μμfd variable air capacitor adjustable from the rear.

C4 is a JACKSON 750 N.T.C. trimmer, 1 - 20 μμfd, mounted on the panel.

C1 and C3 must have double bearings and be of first-class make.

The oscillator covers from 875 KHz to just above 1·02 MHz. When doubling, 1·75 MHz comes in at 20° on C1 and 2 MHz at 420°. When in use on Top Band, the fundamental is extracted in order to prevent any possibility of "pulling". 1·8 MHz tunes at 115°. C5 and C6 are very small variable air capacitors with a maximum capacity of 5 or 6 μμfd. These are set to THE SMALLEST CAPACITY POSSIBLE, consistent with good keying. They should be kept more or less in step when adjusting.

Valve V1.

The grid leak R1, was found to be a good compromise. The value could be as low as 10K and as high as 75K ohms. Too high a value made oscillation difficult. The cathode resistor R2 of 100 ohms helps to reduce anode current and it should be by-passed as shown in Fig.1. The anode resistor R3 of 13·5K is not critical it was found to be a good compromise with an anode voltage of 330 Volts.

KEYING.

A study of table 1 will reveal why V2 was chosen as the keying stage in preference to V1. During early experiments with the Franklin, it was observed that the anode and screen currents of V2 were considerably less than those of V1 and so V2 was developed as the valve to key. A high value of grid leak functions best. The cathode resistor, R5, of 1,000 ohms improved output on the higher frequencies. It should NOT be by-passed when using a 6AG7. The anode resistor is not critical, but a higher value than in V1 can be used.

The valve is keyed in the screen grid and functions perfectly. Grid block keying was tried but was found to possess no advantage over screen keying, apart from being able to earth the key (see Fig.2 which shows how the screen keying system works.) A permanent negative voltage is applied to the screen through a resistor, the value of which could lie between 200 and 500 ohms per screen, grid, positive, volt. For a positive voltage of 75, the resistor value would lie between 15K and 37·5K ohms, the final value being a matter of experiment when adjusting the keying filter. When the key

is up, the negative voltage takes over and the anode current is cut off completely. Some valves do not require any negative voltage, but it is advisable to make provision for this, and a negative voltage of about 50v will suit most valves. The negative voltage does not modify the positive voltage on the screen, as can be seen from a study of Fig.2. The positive voltage, being derived directly from a voltage regulator, with no series resistance in between, has much better regulation.

When keying, the pointer of the meter M, Fig.1, should show only a very small variation of about 3mA. In the writers case this was from 50 to 53 mA approximately. If the variation is much greater than this, it is most likely due to one or other of the voltage regulators not functioning correctly. They must not be set too near minimum current otherwise, when the key is depressed, they will cease to regulate and a chirp will almost certainly develop. Conversely, they must not be overloaded. The last column in Table 1 will give some idea of the average current consumption of the voltage regulator chain. Once set, the 5K series resistor R22 needs no further adjustment, unless the input voltage is changed. An OB3 (90 Volts) has been tried in place of the VR75 but with no advantage. The lower the voltage on the screen grid, the less will be the current which has to be broken when keying.

KEYING FILTER.

A keying filter is necessary and is shown in Fig.3. It must be stressed that no hard-and-fast rules can be laid down for such a filter. What may suit one transmitter may not do for another. Signals can be heard with filters which are too "soft" - they have too much lag - making the characters more difficult to read, while others have filters which are too "hard", with bad clicks. It is a matter for experiment; using first the station receiver to cheek for clicks on "make" and "break" and then enlisting the assistance of a nearby amateur. Chirps should NOT be present as no filter will cure this.

WIRING AND FILTERING.

Should be used wherever applicable, and the screening earthed to the chassis at regular intervals. One side of each valve heater goes to chassis and by-pass capacitors are fitted across the heater socket connections by the shortest possible leads. Other wiring should be carried out with 16g or 18g enamelled and by the shortest possible route appropriate to the stage. All wiring entering the cabinet should be well filtered by the use of by-pass capacitors and, where possible, by RF chokes as well, in order to prevent the possible radiation of undesirable harmonics.

THE CATHODE FOLLOWER.

It is much to be desired that the adjustment of tuning controls in the transmitter, apart from the VFO frequency control, does not effect the frequency - in short, to banish "pulling" of the oscillator. The cathode follower helps to do this by acting as an isolation stage. It is not intended to write a thesis on the cathode follower, but the reader might benefit from a study of Chapter 2, pp. 2.13 to 2.14 of THE RADIO COMMUNICATION HANDBOOK, 4th Edition.

Summing up, the cathode follower has these features; (a) Output voltage slightly less than input voltage, (b) output voltage in phase with input voltage, (c) Input impedance very high, and (d) Output impedance very low.

Tetrodes or pentodes connected as cathode followers revert to the working of triodes unless, this is prevented by DECOUPLING THE SCREEN GRID DIRECTLY TO THE CATHODE, as in Fig.1. There is no reason however, why a triode should not be used. R13 is necessary for the correct functioning of the stage.

The 30 μμfd capacitor C18 in the grid circuit, and the 25 μμfd capacitor, C23, in the output, were made these values after considerable experimentation, to determine best isolation consistent with adequate drive to V4. Indeed the 25 μμfd capacitor C23 could be reduced to 10 μμfd but with a slight drop in output when driving to 28MHz.The values for the grid leak and cathode resistors were chosen after much experiment. The ideal to aim at for best isolation is that V3 should draw no grid current. The voltage across the cathode resistors, i.e. from cathode to earth (as measured with a

high resistance voltmeter with an RF choke in the positive lead) should REMAIN CONSTANT when keying. In this respect, during tests the voltage variation was found to be just under one volt, which was considered to be satisfactory.

Coupling to V4.

If transmission is desired only up to 21 MHz, i.e. Top Band to 15 Metres, then the components C7, S1, L2 and L3 may be omitted and a 3·3 K ohms resistor joined from the grid of V4 to earth. A much larger resistor did not function well. With the 3·3K ohms resistor ample drive was available at 21 MHz but practically none at all at 28 MHz. The switch S1 is a one-pole, 5-way ceramic (shown as 2-way in Fig.1), which was fitted to enable experiments to be carried out using different types of coupling. L2 is an ELECTRONIQUES type DLM 15 coil, and L3 is a DECO "Maxi Q" Range 2 coil. The former is tuned by C7 to 1·75 MHz, the latter to 875 KHz. The DLM type having since been superseded, suitable coils in the "SHQ" could be chosen. In practice it was found that L3 could be adjusted by its core to resonate to approximately 875 KHz with C7 at minimum capacity, and, once fixed, this adjustment provided ample drive over the full range Top Band to Ten. (It should, perhaps be mentioned here that the 150-Watt Transmitter at GM3IAA contains a 6CL6 and a 5763 as frequency doublers driving a TT21 to full power on 3·5 to 28 MHz).

C7 is a JACKSON type "C9" type, and a slow-motion dial was found not to be necessary.

THE BUFFER AMPLIFIER.

This stage, V4, is straightforward, the only adjustment necessary being the choice of cathode resistor, assuming, of course, that anode and screen voltages are appropriate. Provision was made to key in the cathode of V4, as shown in Fig.1., and, if the oscillator is working correctly, no difference should be noticed by a receiving station when changing the keying from V2 to V4 on top band, however, there is considerable breakthrough, which is to be expected, and this would interfere seriously with reception should the VFO be left running. On 80 Metres the breakthrough is at a much lower level and would not interfere with a with a strong signal. On the other bands, 7 to 28 MHz, there is no breakthrough whatsoever when keying V4.

The RF choke RFC1 is of the "all wave" type; ELECTRONIQUES types RFC5 or 6 (5mH and 10mH) are very suitable. To obviate any possible trouble through self-oscillation, it is advisable to have different types of chokes in the anode circuits of V4 and V5. During experiments, V4 was taken out of circuit ant the output of V3 connected to the grid of V5. This worked quite well, but drive was down a little on the higher frequencies. It was decided, therefore, to retain this stage.

THE FREQUENCY MULTIPLIER.

RFC2 may be any good RF choke; ELECTRONIQUES types CCC 7, 8 or 9 will do very well. The cathode resistor R19 was chosen as a compromise between adequate drive on the higher frequencies and low anode current. The grid leak R18, could vary somewhat from the figure chosen, while the grid capacitor C29 could be from 100 to 500 μμfd.

The potentiometer P1, in the screen of V5, was fitted in order to control the output, but in practice it is set to near maximum and left there for all bands. In the case of the writer, it could be omitted, as each of the two RF doublers in the main transmitter has a potentiometer cintrolling the screen voltage and this gives excellent control over all bands. The Top Band transmitter has its own doublier driver, also fitted with potentiometer control.

It was found that the voltage on the screen grid of V5 could be reduced to 50 volts under keydown conditions, even when driving to 28MHz, and to 25 volts on the other bands. However, in practice, the screen is run at 70 volts with the key down.

OUTPUT COILS WITH LINKS.

L4 consists of 25 turns of 18g enamelled, close wound on a 1" diameter paxolin former, with a link coil of 6 turns, 22g DCC, wound at the earthy end. This coil tunes from about 8MHz to 5·5MHz, and was designed for 40m output.

A KEYED FRANKLIN VFO UNIT FOR MULTI-BAND WORKING. - Contd.

L5 is 37 turns of 20g enamelled, close wound on a 1" diameter former, link 8 turns 22g DCC - this coil is for the 80m output.

L6 is close wound with 70 turns of 24g, former as before, for output on Top Band. Its link is 13 turns of 22g DCC.

L7 was designed solely for driving to the Top Band transmitter, but it can also be used effectively when operating the main transmitter on 80/40m. It tunes midway on C8 to about 850KHz and is close wound with 120 turns of 30g enamelled on a ¾" diameter former. A loading capacitor of 150μμfd is placed across this coil, and is NOT shown in Fig.1. The link is 20 turns of 30g. A DENCO "Maxi Q" Range 2 coil also worked well with a 25 turn link of 30g wound towards the end of the former.

None of the link coils fitted to L4, L5, L6 and L7 was found to be at all critical. The output is taken by co-axial cable to either transmitter, and lengths up to 20ft have been tried and found to provide ample drive.

NOTE - After several adjustments had been made in the main transmitter, it was found that the output from L5, the 3·5MHz coils, was adequate to drive to full output on 10m. Accordingly, L4 is no longer required, but it could be useful should there be a dearth of drive on the highest frequency. S2 is a 2-pole 4-way ceramic switch C8 is a 200μμfd JACKSON type C12 capacitor.

TUNING ADJUSTMENTS.

It is imperative that a note be taken of the tuning adjustments of C8 for the different outputs on 0·875, 0·9, 1·75 and 3·5 MHz in order to avoid choosing an incorrect harmonic. An ideal way of doing this is to put coloured dots on the dial, corresponding to the various bands. A slow motion dial was fitted to enable easy adjustment to be made on the three higher frequencies, but particularly on 21 and 28MHz.

Once set for the band in use, no variation is required over a considerable range. For example, when transmitting on 10m, no adjustment of C8 was necessary between 28·0 and 28·05MHz. Provided the transmitter doubler controls were readjusted, drive was adequate. Indeed, during experiments in this direction, it was possible to extend the range to 28·1MHz with no great loss in output; in practice, however, a slight adjustment would be made to C8.

A calibrated absorption wavemeter was used to locate the desired harmonic on each of the four coils.

THE POWER UNIT (Fig.4).

This was made as a separate unit for four reasons: to prevent the possibility of any interaction with the mains transformer; for convenience in servicing; to avoid cramping the VFO interior, and finally to keep down the temperature in the cabinet by avoiding heat radiating components as much as possible. For convenience in wiring, however, the three series voltage regulators were fitted in the VFO cabinet.

If voltage variation is to be kept to the absolute minimum, choke input should be used and a bleeder resistor wired across the output.

Transformer T1 provides negative bias up to 100 Volts as well as supplying current for the rectifier and other heaters. It runs continuously during operating periods. Transformer T2 supplies HT only and is switched separately. The rectifier is a 5R4GY. Normally this transformer is left switched on, as this helps to avoid VFO drift.

Choke CH1 is not a "swinging" choke, but the voltage variation is so very small, thanks to the voltage regulators, that it performs perfectly in this position.

In the negative bias section, it is NOT desirable to place a large capacitance electrolytic capacitor across the output i.e., across the voltage regulator OB2, so isolation is provided by the series resistor R3 of 1,000 ohms. A shunt capacitance of not more than 0·1μfd may be used, a larger value could cause oscillation of the OB2, and thus unstable regulation. It is possible to omit the

A KEYED FRANKLIN VFO UNIT FOR MULTI-BAND WORKING. - Contd.

OB2, provided the 1,000 ohms resistor was replaced by a larger value and a potentiometer of about 10,000 ohms placed across the output. Adjustments would be necessary to ensure that the potentiometer was not overloaded.

The 2,000 ohms resistor, R2, between the Automat rectifier TV2-3 and the choke CH2, should NOT be omitted otherwise the rectifier which is rated at 125 Volts RMS input might be overloaded. The arrangement shown has worked well for many years and the rectifier runs quite cool over prolonged periods.

The transformer T1 was made especially by Messrs TRS Radio, at a reasonable cost. All other components were on hand, mainly surplus. The case for this unit measures 16 inches by 11 inches deep by 8½ inches high, providing more than ample space. A five-pin socket is mounted on the front panel and a cable connects to the VFO socket. Worked well within its limitations, the unit has given no trouble. The original OB2 and 5R4GY are still in use.

CRYSTAL CALIBRATOR (Fig.5).

This is fitted in the VFO cabinet and, using the appropriate crystal, provides a quick check on the band edges. The heater of the 6AK5 is left on and the HT switched on when a check is desired. Injection to the receiver is made via a short piece of insulated wire plugged into the co-axial socket on the front panel. A 6BA6 valve may be used if the valve pins 7 and 2 are joined together on the valve socket.

TABLE 1.

This table details the approximate working conditions of the valves in the VFO and could form a guide to those interested in building such equipment.

GENERAL.

This VFO has functioned more than 10 years with the absolute minimum of trouble. Valve V1 and V2 were changed because one was suspected of causing poor tone. All valves are worked well within the limits permitted for each type, indeed, the total anode current consumption for all the five valves is less than one 6AG7 or 6CL6 working to capacity. Type EF184 valves were tried as V3 and V4 but found to be no improvement on the EF80, while the screen grid current was greater. The VFO was tested on Top Band, using only link output from V5 which functioned as a PA with an input or about 1½ Watts. Several stations were worked in London, Portsmouth and other places (from Inverness - Ed.). Under normal conditions the VFO drives a 2E26 PA through a 6AG7 doubler, when in use on Top Band.

TVI.

There is no evidence of TVI on BBC Channel 2 when using the full 150 Watts on the main transmitter on any band 3·5 to 28MHz. The test television receiver was situated within a few feet of the transmitter; the TV aeria1 being just above at a height of about 12 feet. However, the television signals at the writers QTH are very strong, the stations being in line-of-sight and across water mainly.

CONCLUSION.

If due care is taken in construction, and none but the best components used, especially in stages one and two, then the result should be a VFO of which any amateur may be proud. It should not need to be stressed that one badly soldered joint, or a dirty keying jack or socket could be the cause of poor tone. Faulty components there may be, but there is NO EXCUSE for careless construction, poor wiring, dirty connections or badly soldered joints - all too often the cause of trouble. VERBUM SAT SAPIENTI, which, roughly translated into Amateur Radio parlance, just means: "You have been warned...".

o-o-o-o-o-o-o-o-o-o-o-o-o-o-o-o-o-o-o-o-o

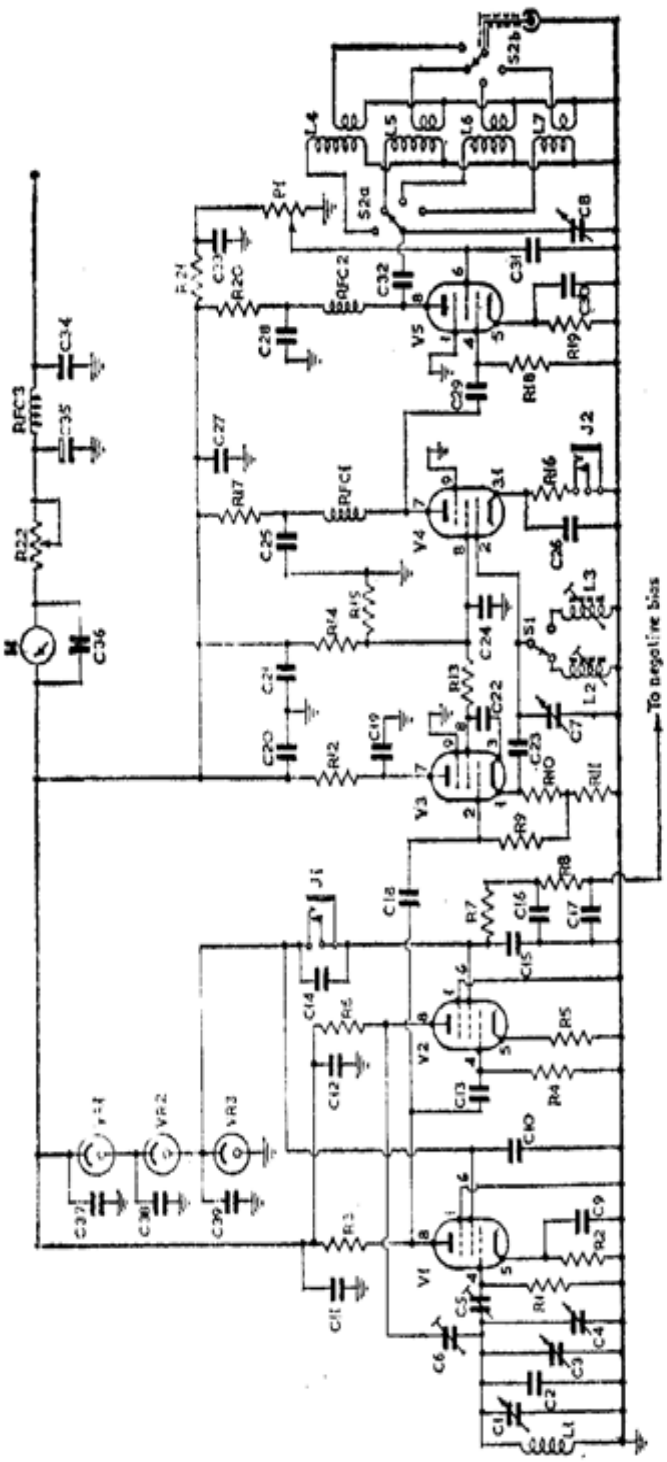


Fig. 1. Circuit complete of the Franklin VFO-Driver Unit.

TABLE 1.

Valve	Key	Approx. Volts Drop across Cathode Resistor	Anode Volts	Anode mA	Screen Grid Volts	Screen Grid mA	Current through the Voltage Regulator Chain mA	Notes
	Up	1·2	210	7·2	75	2·3	31)	Between VR150 and
1.	Down	1·3	200	7·5	75	2·4	27)	VR105
	Up	Nil	330	Nil	75	Nil	30)	Between VR75 and
2.	Down	5·0	250	3·8	75	1·0	20)	earth.
	Up	1·4	To Cath 220	1·8	115	1·0		
3.			To earth 260					
	Down	1·75	To Cath 260	1·0	100	2·0		
			To earth 300					
4.	Up	2·0	260	3·0	120	0·6		
	Down	2·8	240	4·5	100	1·0		
5.	Up	5·0	220	6·0	105	1·5		
	Down	6·0	210	6·5	95	1·8		

TABLE OF VALUES.

C1, C2, C3, C4, C5, C6 .....See text
C7.....150µµfd (See text)
C8.....200µµfd Jackson Type "C12"
C13.....100µfd.
C9, C10, C11, C12, C17, C19, C20, C21,
C22, C24, C25, C26, C27, C28, C30, C31,
C33, C36, C37, C38, C39.....0·1µfd
C14, C34.....0·001µfd
C15.....0·003µfd
C16.....0·005µfd
C18.....30µµfd
C23.....25µµfd
C29.....300µµfd
C32.....0·002µfd
C35.....32µfd 500V wkg Elect.

R1, R14, R15, R21.....47 Kohms
R2.....100 ohms
R3.....13·5 Kohms
R4.....1 Mohm
R5.....1000 ohms
R6.....16000 ohms
R7, R9.....10 Kohms
R8, R17.....25 Kohms
R10, R16.....560 ohms
R11, R13.....15 Kohms
R12.....40 Kohms
R18.....16 Kohms
R19.....460 ohms
R20.....18 Kohms
R22.....5 Kohms 25 Watt Variable Pot.

L1, L2, L3, L4, L5, L6, L7.....See text

J1, J2.....Jack Sockets

M.....Milliameter 0 - 1-- mAs.

P1.....Potentiometer 100 Kohms Wire Wound

RFC1, RFC2.....See Text.
RFC3.....2·6 Mh

S1, S2.....See Text.
V1, V2, V5.....6AG7

V3, V4.....EF80.
VR1.....VR150

VR2.....VR105.
VR3.....VR75

A KEYED FRANKLIN VFO UNIT FOR MULTI-BAND WORKING. - Contd.

NOTES ON SCREEN-GRID KEYING. (See Fig.2 below)

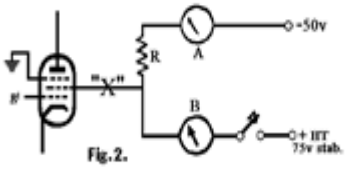


Fig.2.

Fig.2. Screen-grid keying with fixed negative bias on the screen through a high resistance R, the value of which may lie between 200 and 500 ohms per volt positive on the screen. (See Text.)

NOTES.

Test 1. With key up, both meters 'A' and 'B' read NIL, and no reading appears at point 'X'.

Test 2. With key down, meter 'A' reads 1·5 mAs and meter 'B' 3·0 mAs. The reading on meter 'B' includes that on meter 'A'.

Test 3. Disconnect the negative voltage line from meter 'A', depress the key and meter 'B' will register true screen curent, e.g. 1·5 mAs.

Note. These figures were obtained on actual test and are quoted to show what can be expected. They would, of course, vary with different valves and voltages.

KEY CLICK FILTER.

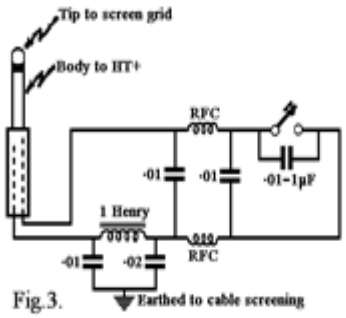


Fig.3.

Fig.3. Key Click Filter. The connecting cable should be screened, and screening earthed. The small iron-cored choke may not be necessary in all cases.

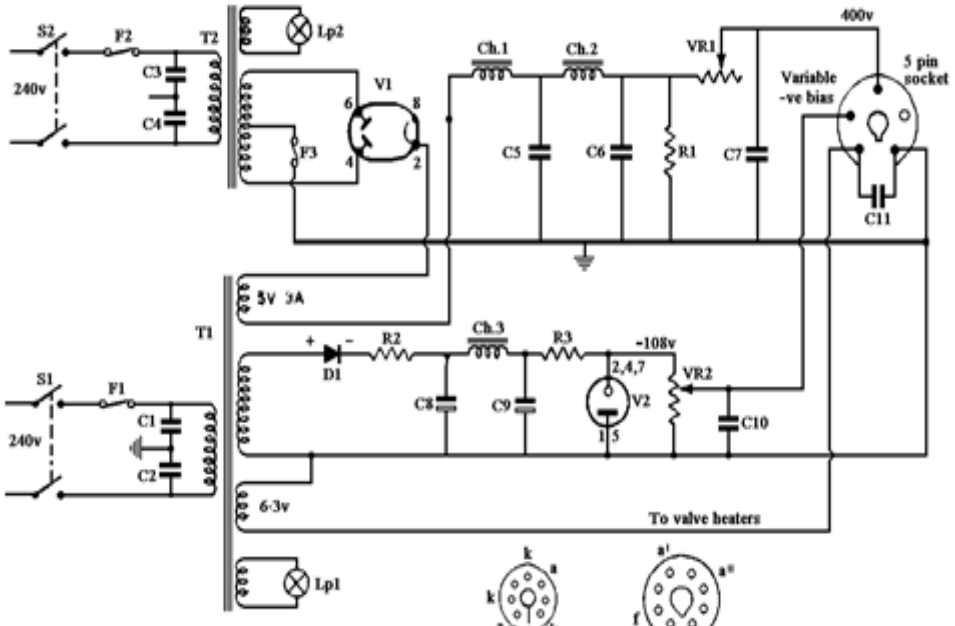


FIG.4. - THE POWER SUPPLY UNIT

V2; OB2

V1; 5R4GY

A KEYED FRANKLIN VFO UNIT FOR MULTI-BAND WORKING. - Contd.

POWER SUPPLY UNIT - TABLE OF VALUES.

C1, C2, C3, C4	0·001µfd.	C5	20µfd 600V Wkg.
C6	15µfd 600V Wkg.	C7	4µfd 600V Wkg.
C8, C9	32µfd 500V Elec.	C10	0·003µfd.
C11	0·01µfd.		
R1	30 Kohms 50 Watt Bleeder		
R2	2 Kohms 5 Watt		
R3	1 Kohm 2 Watt (See text)		
VR1	2 Kohm 25 Watt.		
VR2	30 Kohms 3 Watt.		
CH1	16 Henries 120 mAs 125 ohms (See Text)		
CH2	50 Henries 120 mAs 330 ohms.		
CH3	100 Henries 2·2 Kohms.		
S1, S2	Mains Switches Double Pole		
F1, F2	Fuses 3Amps		
F3	Fuse 500 mAs		
T1	200 Volts 60 mAs Transformer.		
T2	500-0-500 Volts 200 mAs Transformer		
D1	TV2-3 Metal Rectifier AUTOMAT		
PL1	Panel Light Green.		
PL2	Panel Light Red.		
V1	5R4GY.		
V2	OB2 Voltage Stabiliser.		

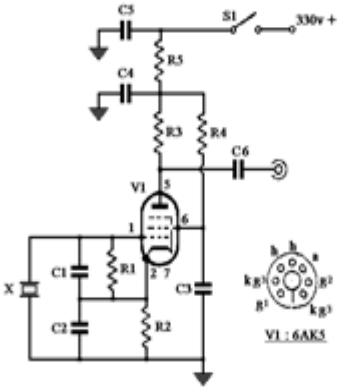


FIG.5. - THE CRYSTAL CALIBRATOR

CRYSTAL CALIBRATOR - TABLE OF VALUES

C1	30µµfd.
C2	330µµfd.
C3, C4, C5	0·01µfd.
C6	0·001µfd.
R1	330 Kohms.
R2	10 Kohms.
R3	150 Kohms.
R4	40 Kohms.
R5	10 Kohms.
S1	Switch Single Pole.
V1	6AK5 or 6BA6.
X	Appropriate Crystal.

0-0-0-0-0-0-0-0-0-0-0-0-0-0-0

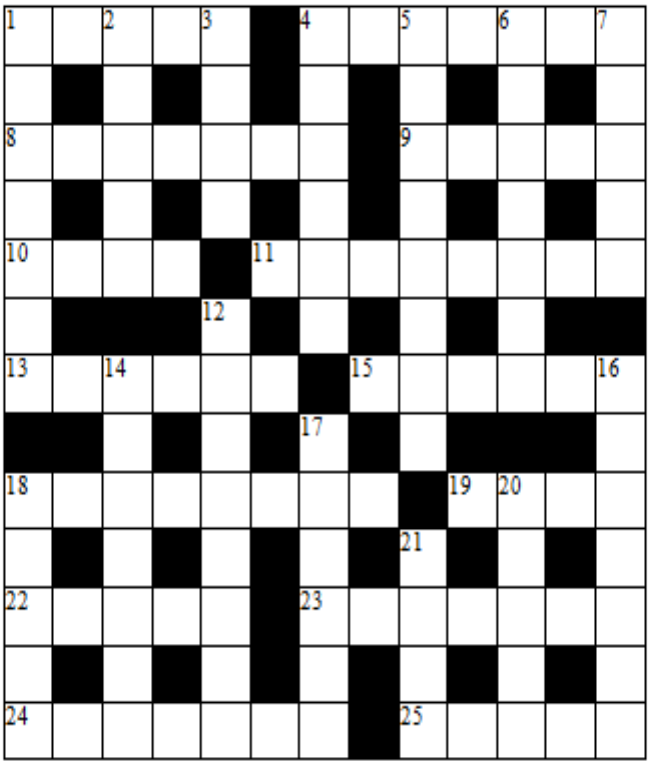
PAGE FILLER.

G3AMR should be operating again as C6ABA after 7th November this year.

From the Bell Telephone Laboratories, via the pages of The Cornish Link, comes news of a new nuclear man-made substance as a substitute for quartz crystals. The substance lithium tantalate does not appear in nature and is produced by a hydrothermal method by crystallising from a water solution at temperatures as high as 1300°F and corresponding pressures of 50,000lbs per square inch. Lithium tantalate is said to have electro-mechanical coupling 5 - 6 times as high as quartz giving a high 'Q', minimum of unwanted modes and a low temperature coefficient. It is so stable that it can be machined. It is estimated that by the end of 1975 production of Lithium Tantalate will outstrip production of normal quartz crystals in the U.S.A.

THE ALAN DUCK CROSSWORD.

(Tony Teasa turned up again the other day - to leave a crossword and tell us that he has changed his name to Alan Duck - Ed.)



CLUES.

Across.

1. A Greek monk said to be mainly responsible for the Russian alphabet. Usually to be found at the centre of RSARS activity on 3.720 MHz. (5).
4. A chain of radio stations. (7).
8. Continuous. The kind of performance needed to win the 5-59 Trophy. (7).
9. Watchful. The home of VE8RCS.
10. A sandy or coral ridge protruding from the sea. (4).
11. The Oaks and The St. Leger are just two of them. (8).
13. he eleventh letter of the Greek alphabet. The symbol of wavelength. (6).
15. One of a "bunch of fives". (6).
18. Visitors to one's country. Hopefully, paying guests. (8).
19. Worn by some Hi-Fi enthusiasts and telegraph operators. (4).

Down.

1. 1 Across usually exercises this over 4 Across. (7).
2. The limits of a series of possible variations. Where the cowboy usually feels at home. (5).
3. Popularly, "a bit pushed". (4).
4. A horrifying weapon of modern war used in Viet-nam. (6).
5. To attract the attention of 1 Across on 4 Across it is necessary to do this first. (8).
6. A temperature inversion may produce this for the VHF boys. (7).
7. Given a breeze can make a useful sky-hook for that /P antenna. (5)
12. Where the weary YU might dip his feet. (8).
14. Lately VS5MC. (7).
16. Opposes. A non-conductor does this to the passage of as current. (7).

THE ALAN DUCK CROSSWORD - Contd.

22. At one time most equipment was home - this. (5).
23. Sources. (7).
24. Clients otherwise. (7).
25. The VHF boys have these skeletons in their antenna systems. (5).

17. To wander, but not frequency-wise. (6).
18. May contain toothpaste, or be a source of power. (5).
20. Simply a friend to a ham in Madrid. (5).
21. A propensity without which 18 Down wouldn't last long in most cases. (4).

Solution, together with another clue for 23 Across, to HQ by 1st June 1976. Two 50p vouchers will be awarded to the member sending a correct solution with the most apt and original clue (as judged by the Editor) to 23 Across.

BLANK FILES.

With effect from 30th June 1975, the following are no longer members of The Royal Signals Amateur Radio Society. Please delete from all lists. Contacts with the following stations will not be accepted for Awards and Contests purposes after that date.

0342	NL	F.A. Sims.	0441	NL	M. Brockhouse.
0456	NL	M.R. Emery.	0585	G4ADF	P.D. Harrison.
0615	G3COL	H. Collins.	0652	G3VBE	F.G. Miles.
0677	G8CFM	W. MacKune	0678	G3RDX	Brigadier C.R. Templer DSO.
0680	G3YMR	G.W. Rogers.	0688	G2DJM	E. Chilton.
0706	NL	D. Hebden	0728	NL	R.P. Snow
0734	G3XRY	W. Doe	0739	NL	C. Brookson.
0751	NL	J.K. Rose	0768	G3AHB	L.G. Coote.
0769	GW3DRV	O.D. Jones	0802	DA4BO	G. Onions
0821	G3WRU	G.W. Harding	0824	NL	J. Harding
0826	G3ZVD	K. Allen	0832	G4AMZ	P.J. Leach
0834	GM3ZHG	J.A. Judge	0837	G8HOY	R.G. Bishop.
0866	G2DWN	S. Hibbert	0871	GW3VBP	D.H. Adams.
0921	NL	A.C. Graham MBE.	0935	NL	Major (Rtd) J. Daw BEM
0945	NL	P.G. Northcott.	0946	NL	Captain G.C. Shaw.
0978	G2XQ	F.E. Marshall.	0981	VU2BK	Major-General Kabraji AVSM
0989	NL	C. Phillips.	0994	G4DFQ	N. Dear.
0996	NL	M. Smith.	1005	G2ALM	R.F Wilkins.
1009	NL	J.W. Graham.	1016	ZL2AAV	R.L. Cooper.
1020	G3RB	K.N. Smith.	1023	G4DAP	C.R. Ison.
1026	G8DIB	Lieut. I.P. Burgess.	1028	ZL2BJW	G. Halligan.
F006	DL5YQ	ORZ Club.	F016	G4BZC	Claro A.R.C.
F019	GI3IJD	U.D.R. A.R.C.	F041	VS6AC	252 Sig Sqn A.R.C. Hong Kong
F046	DA2YD	20 Armd Bde A.R.C.	F048	NL	73 Sqdn TAVR A.R.C.
F049	NL	Lancaster Grammar School CCF	F050	GI4BRJ	Lisburn Garrison A.R.C.
F052	NL	Brighton Grammar School CCF			

PLESSEY SEMICONDUCTORS SL600 SERIES OF INTERGRATED CIRCUITS FOR RADIO COMMUNICATION.

By: James M. Bryant, G4CLF, Linear Application Manager, Plessey.

Introduction.

The SL600 series is a family of linear integrated circuits developed for use in HF SSB transmitters and receivers and more recently updated for use in transceivers of all modes. SL600 circuits are quite widely used by Radio Amateurs in Britain but are less well known abroad although articles describing their use have appeared in Amateur magazines in several countries.

This article is a brief description of the range, written in the hope of further promoting the use of SL600s by Amateurs - principally to increase our sales, but also because they are ideally suited to Amateur use.

The Circuits.

The SL600 series consists of four RF Amplifiers, two Audio Amplifiers, two Speech AGC circuits, two Detectors and two Double-balanced Modulators. There are also two LF Phase-locked Loops and a Crystal Oscillator which are quite recent additions to the range.

The RF Amplifiers are the SL610, SL611, SL612 and the SL613. The First three are similar, being RF Amplifiers with high input impedance, low output impedance, voltage variable gain and internal supply line decoupling. They differ in their gain, frequency response and current consumption. The SL613 is a Limiting Amplifier with an internal detector and similar high input impedance, low output impedance and decoupled supply line. The characteristics of all four amplifiers are shown in the table below.

Type.	Gain (dB)	Upper 3dB point.	Noise Factor	Supply Current.
SL610C	20	140 MHz	4 dB	15 mA.
SL611C	26	100 MHz	4 dB	15 mA.
SL612C	34	15 MHz	3 dB	3.3 mA.
SL613C	12	150 MHz	4.5 dB	15 mA.

Other features.

SL610C 50 db Gain control range.
SL611C 50 db Gain control range.
SL12C 70 db Gain control range.
SL613C Excellent limiting characteristic, detector.

In addition to their high performance, these RF Amplifiers are very easy to use. Unlike many so-called "RF Amplifier" integrated circuits which need the addition of so many external components that they are dressed up like Christmas trees, the SL600 RF Amplifiers require only a single +6v supply, an AGC line (if used), and input and output coupling capacitors. No other discrete components are necessary.

The S610 and SL611 are primarily intended for use in RF stages and have good inter-modulation rejection and are capable of operating over a dynamic range of over 115 dB. The SL612 is basically intended for use as an IF amplifier, and the SL613 was designed for use in limiting stages in SSB transmitters with RF compression. The SL13 may also be used in FM limiting strips but a better circuit for the purpose is the SL624, which contains not only the limiting amplifier but also a quadrature detector and audio stages.

The two audio amplifiers are both low-power circuits. The SL622 is a microphone pre-amplifier with built-in AGC. It delivers a constant 100 mV r.m.s. output over a 60 dB range of input, although the dynamic range may be reduced by an external resistor in noisy environments. The AGC is of the conventional fast attack, slow decay variety. As well as the AGC controlled output the SL622 has an uncontrolled sidetone output, which may be used for sidetone, VOX, etc.

The SL630 is a low-power amplifier capable of driving headphones or a small loudspeaker with up to 200mW. It has a mute terminal and voltage controlled gain, but no internal AGC - if AGC is

PLESSEY SEMICONDUCTORS SL600 SERIES etc.- Contd.

required an external SL620 circuit must be used to provide the control voltage. Both the SL622 and the SL630 use a minimum of external components.

The SL620 and the SL621 are speech AGC systems and they provide the most advanced speech AGC system in the world. Since there is no carrier on an SSB signal the AGC must be derived from the detected audio. Ideally, the AGC system must adapt rapidly to a new signal, but not revert the system to high gain during speech pauses - although if a pause is so protracted that it is evident that the signal has gone the system gain should be restored quickly. The SL620 and the SL621 do all this, and in addition generate fast AGC to suppress short noise bursts. To do so they require only four external components, all capacitors.

The output level of the SL620 is designed to drive the SL630 and the output level of the SL621 to drive the SL610, SL611 and SL612. Since the AGC threshold voltage of the SL610 and the SL611 is slightly higher than that of the SL612 a receiver using SL610 or SL611 RF stages and SL612 IFs automatically has delay on the RF stage AGC without any separate provision for this being necessary.

The introduction of the SL621 some years ago caused the British Government to rewrite the specification of several military SSB systems since the performance of the SL621 had hitherto been considered unobtainable at an acceptable cost.

The two Detectors in the SL600 series are the SL623 and the SL624. The SL623 consists of a product detector for SSB, a diode detector for AM and another diode detector and DC amplifier for carrier AGC during AM reception. During SSB reception it is intended that the SL623 be used in conjunction with an SL621 and it has been designed to minimise switching in this configuration.

The multimode Detector of the SL600 Series is the SL624, which may be used as a product detector (self-oscillating or not, as required) for CW and SSB, a synchronous detector for AM and a quadrature detector for FM. To achieve such versatility this circuit, alone or the SL600 Series requires nearly a dozen external components.

The double-balanced modulators, the SL640 and the SL641, are again self-contained. If signal and carrier are applied to the correct inputs their sum and difference frequencies appear at the output, but the signal and carrier are themselves suppressed. The carrier power requirement is very low and, unlike diode ring modulators, the circuits have unity gain, rather than a loss. The SL640 and SL641 may be used as mixers, SSB generators, product detectors, phase detectors and in a wide variety of other modulator functions. Both circuits work well from a few Hz to over 100 MHz (and pretty well at 2 Metres).

The SL650 and SL651 are low frequency phase-locked loops. They were designed for use in FSK data modems and are thus useful in RTTY and SSTV applications, being exceptionally stable for integrated phase-locked loops they are also useful in repeater access tone generators and, even more, in stable tome detectors.

The last circuit is the SL680 crystal oscillator. It is designed as a stable oscillator circuit for use with series mode crystals (fundamental or overtone). Its output level and frequency are almost unaffected by temperature and supply variations.

With the exception of the SL624 and the SL650/651 all SL600 Series circuits are encapsulated in hermetically sealed TO-5 cans, operate from a single +6V supply and may be used from -55° to +125°C. The SL624 is in a ceramic DIL, requires +9V and has an operational range of -25° to +85° C, and the SL650/651 is in a metal/ceramic DIL, requires ±6V and has the full -55° to +125° C operational range.

Applications.

SL600 Series circuits may be used in all types of radio communication equipment. They are particularly well adapted for use in SSB transceivers but are also widely used in transmitters and receivers of other types and in test-gear. It is impossible to describe their use in the space available but a 92 page "SL600 Series Applications Manual" is available which contains detailed notes on each device except the SL650/651 (which has its own separate manual) and the SL680 (which is

PLESSEY SEMICONDUCTORS SL600 SERIES etc.- Contd.

too recent an addition to the range to be included).

As appendices this manual contains practical details of an SSB transceiver usable from 10 KHz to 500 MHz, containing less than 80 components and occupying a board 13cm X 8cm, and of a multi-mode transceiver capable of working on AM, CW, FM and SSB.

Supply.

Unlike many integrated circuit manufacturers who seem unwilling to allow Radio Amateurs to buy their products, Plessey Semiconductors are delighted to supply Amateurs. Small orders in Britain should be addressed to any of the distributors listed in the ""SL600 Series Applications Manual", or to Amateur Radio Bulk Buying, 20 Thornton Crescent, Old Coulsdon, Surrey, with overseas orders to the nearest Plessey office. In some countries this may cause difficulties - in which case please contact Plessey Semiconductors at Swindon directly.

Conclusion.

The SL600 Series are ideal for Radio Amateur use, having high performance combined with low cost, low external component count, low power consumption and high reliability. They arc also robust, being difficult to damage by soldering or overload, Their use makes practical projects which would otherwise be too complex or too expensive for the average amateur.

James M. Bryant, G4CLF, Linear Applications Manager, Plessey Semiconductors, Cheney Manor, Swindon, SN2 2QW.

THERE AIN'T NO SUCH ANIMAL!

G3BEC/0113.

Nobby has obviously been keeping an ear to the bands, and offers:

(1) A short Long Wire, (2) A SWR better than 1:1, (3) QRN from a vacuum cleaner, and (4) 73s, Best 73s, Vy Best 73s etc. (It's 73 or Vy 73). Have YOU heard any "oddies" on the on the air lately???.

o-o-o-o-o-o-o-o-o-o

LETTER FROM ZC4.

ZC4DH/0963.

DAVE, otherwise Sgt. D.B. Humphries, ZC4DH/0963, Systems Troop, 259 Signal Squadron (West), British Forces Post Office 53, writes from Cyprus:

",....Should, with luck, make the Net more often now having sorted out the antennas a bit. Am now using a ZL Special for 14 MHz, a Dipole for 21 MHz, a Trapped Rotary for 14, 21 and 28 MHz and a 4 element Quad for 2 Metres. We are awaiting the arrival of a HW101 from the U.K., but until that arrives we have the semi-permanent loan of a KW Atlanta. The main reason for writing is that I am now the custodian of ZC4TX, a call-sign issued to 259 Signal Squadron in Comcan days and I would appreciate any information regarding the history of this call-sign that members might he able to give me. Will also be happy to arrange skeds with anyone who wants one, particularly on 21 MHz - my favourite band. I operate on 21·300 ± QRM most evenings. Regarding ZC4TX we have 4 license holders in the Squadron and I am hoping to start, a Club. Am in the middle of constructing an AM/FM transceiver, which is progressing slowly but surely, and have almost completed a 2 Metre Transverter (you never know, you might hear me via OSCAR one day)."

73 Dave.

o-o-o-o-o-o-o-o-o-o

LETT'ER FROM AUSTRALIA.

Just room enough to mention that Mac., ex-P29MC, is now VK3CCC and working at Melbourne Airport. If any member is passing through, give Mac a ring at the airport Operations, Civil Aviation. He is active again on SSB/RTTY/SSTV/CW and still looking for RSARS contacts. He is finishing a project to give RTTY/DSTV signals and (to the XYLs delight) a "Silent Shack". He sends 73 to all members.

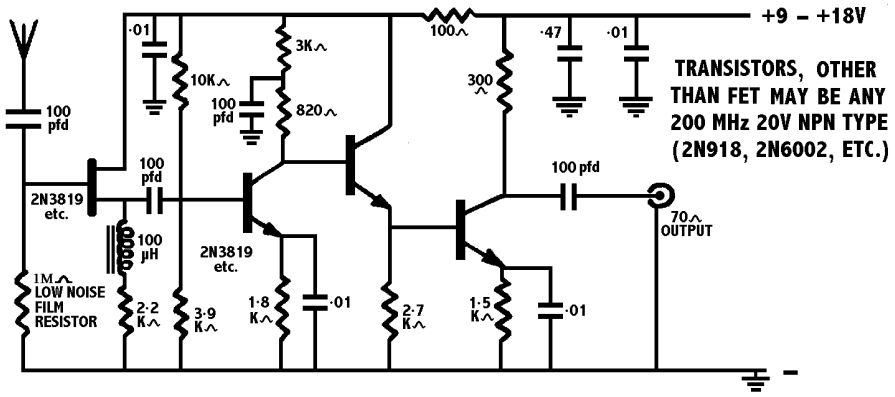
AN ACTIVE AERIAL DEVICE.

(The following article appeared in the Cheltenham Group RSGB Newsletter and is republished by kind permission of Edgar, G2FWA/RSARS 0869. Some time ago your Editor came across a similar system in use where the DC supply requirement was fed to the amplifier unit fitted at a mast head, through the connecting co-ax (with suitable blocking capacitors at each end). The theory was that the amplifier introduced 'x' dB gain of the received signal at the top of the feeder and, by fitting an 'x' dB attenuator at the set, one reduced the interference picked up on the feeder by 'x' whilst still getting your original money's worth of signal. This has not been checked, but some of our ardent SWL members might like to 'give it a try' and let us know the results - Ed.).

You may have noticed that EDDYSTONE make an "Active Aerial" (Catalogue number 1506). This is no catch, not like selling a flower pot as an artificial earth, but quite an interesting device. With one of the Eddystone die-cast boxes and a 20" whip, you are in business.

The March 1975 issue of '73' Magazine lets us into the inside of a similar device. The secret appears to be to reduce stray capacitances to ground at the base of the whip. Use a good large insulator and a short lead direct to the FET. This is a capacitive device and any stray capacitance divides the signal. If you suffer from overloading signals then lower the whip - even down to a few inches.

The circuit diagram and details are shown below. This unit is really a 30dB gain broad band amplifier from about 3 MHz to 30+ MHz. It can sit on the top of your RX or perhaps in the clear with co-ax feed to the receiver.



P1794 (AGAIN).

Colonel Sortenout strolled into the office. "What's the latest case?" he queried. "Haven't got one at the moment" 1794 replied. "Then what are you working on?" asked the Colonel. "Just something to keep my thinking processes in order. I have 225 numbers from 1 to 225 and have to arrange them into a square consisting of 15 by 15 smaller squares". "Easy" said the Colonel. "Ah, I forgot to mention" added 1794, "Each vertical column, each horizontal column and each diagonal (corner to corner) column MUST add up to 1,695". 4 notebooks and 7 pencils later the Colonel was still trying. "How about a clue?" requested the Colonel. "OK, the number in the centre small square is equal to the column total (1,695) divided by the number of small squares on each side of the big square" said our hero with a smirk. "And.." prompted the Colonel. "And.." continued 1794 "The figure "1" goes in the centre small square on the top row, and ,"225" goes in the centre small square on the bottom row".

Can you help the Colonel? Answers to HQ by 1st March 1976. 3 50p vouchers to the first three correct solutions opened after that date.

THEY COME IN ALL SIZES.

ZL1AXM/RSARS 0530.

(Being the first of two articles from Ken, Ex-G2KK).

It is often said that members of the amateur fraternity are drawn from all walks of life. A browse through the 1975 edition of the RSGB Call-Book suggest that this may, indeed, be true. Occupationally, we have a versatile bunch as the following sample shows:

COOPER (G3DPS), BARBER (G3AJB), GROOM (G3LYC), MILLER (G2QZ), PURSER (G2AXO), JOINER (G3ZYZ), COOK (G2AB), CARPENTER (G3ZQF), SLATER (G3ZRF), BUTCHER (G3XCQ), WEAVER (G2FFT), STEWARD (G3ZRG), TINKER (G3LRO), BUTLER (G2BUW), LOADER (G3YXV), MASON (G3ANS), CARTER (G3PHR), PORTER (G2YM) and BAKER (G3ZBP).

If you believe these are drawn from a rather narrow band, you may be relieved to learn that there is adequate representation at the other end of the scale with:

KING (G3PFS), LORD (G3PHN), KNIGHT (G2LP), NOBLE (GM8AZS), PRINCE (G3KPU), EARL (G8DWF), and PEERS (G3REA).

The gourmets may select from the following rather mixed bag:

SOLE (G3AEF), GAMMON (G3VB), BACON (G3DUP), GARLICK (G2BJM), HAM (G3ZUO), RICE (G2AGR), VEAL (G8BDK), LAMB (G2BRQ), ONIONS (G8FCO), BEAN (G3XNT), MUTTON (G3EVT), FISH (G4LO), CURRY (G3DMQ), HERRING (G8IFG), PICKLES (G2ZMQ), COCKLE (G3JWE), MUSSELL (G3ZNP), HADDOCK (G3UZM), SALMON (G3XVV), WHITING (G3POF), MACKRELL (G3KAX), ROACH (G3MBR), FUDGE (G3DZS), CAKEBREAD (G3IDI), with SALT (G3VVG), PEPPER (G3YWA), and MUSTARD (G3NCO) to taste.

That we are high-minded is amply demonstrated by the inclusion of:

BISHOP (G2AHC), POPE (G3HT), BELLRINGER (G3JYF), ABBOTT (G3JU), MONK (G3HU), DEAN (G3ANH), ELDER (GI4AHD), KIRK (G3JDK), DEACON (G3XHU), PRIOR (G3WKO), CHURCH (G2BMZ), CHRISTIAN (G3HQP), SERMONS (G8IUD), PARISH (G8IOI), ABBEY (G3OVH), and PRIESTLEY (G3XIW). In this context we should not forget the well-known traps that originate from the AILSE of Wight.

Those with outside shacks should feel rather more secure in the knowledge that we have:

YAI.E (G3ZTY), LOCK (G8IW) and KEYS (G8IML).

The keen /M types are catered for by:

FORD (G3MJI), BENTI.EY (G2BDY), AUSTIN (G2FQR), HOLDEN (G2HIX), HILLMAN (G3OKH), MORRIS (G3LSY), RII.EY (G3ZKG), and BUICK (GM3PMK) leaving HELM (G8AEN), SEAMAN (G3OTN), WHEELHOUSE (G8AZE), STOKER (G8BPW), FUNNELL (G8AFI) and HATCH (G8EAW) to be claimed by the /MM boys.

Those who aspire to a shack in Downing Street and fear the difficulties of obtaining planning permission may take heart from the precedents set by:

BALDWIN (G3IAQ), CHAMBERLAIN (G8HKB), CHURCHILL (GD3MBC), WILSON (G8IUO) and HEATH (G3OAN).

Cricketers will be delighted with:

BOWLER (G3ZHV), FIELDING (G3JPO), WICKETT (G3YJH), BALL (G3HQP), PLAYER (G8FFF), and BYE (G3TCI), but lack a batsman unless the worthy J. HOBBS (G3JQN) can be recalled to the side.

The devotees of "The Box" who delight in seeing the villains being brought to swift justice will be happy to see:

BARLOW (G3XTL), WATT (G3WZJ), and HAWKINS (G8GRH), but if the other crowd are preferred try:

THEY COME IN ALL SIZES - Contd.

STONE (G8GKX), HAGGAR (G8FZM) and LYNCH (G3RJL).

The old-timers are not forgotten with SHERLOCK (G3BQH), HOLMES (G3UEU), and WATSON (G3PEJ). Who said that Sherlock Holmes wasn't equal to any two of the others?.

The PUNTER (G8IIG) who likes a GAMBLE (GM2DAU) in the hopes of making a GOODWIN (G8FXD) should remember, before making his WAGER (G8GBD), perhaps on the ST. LEGER (G3VDL), that we have a perfectly good TIPPER (G3JBR), but whether Peter is more concerned with waiters and taxi-drivers than horses, only he can tell.

To slake that THIRST (G4CTT) try BEER (G3AM), BASS (G3ZMU), WORTHINGTON (G3AVC) WHITBREAD (G8AYN), or, perhaps, even DRINKWATER (G3ZIY).

Those intrepid DX-peditioners LIVINGSTONE (G3IXA), RHODES (G3IJI) and STANLEY (G8CZK) are well represented after all, they gave a new African country to some.

To greet the early riser in search of DX is the dawn chorus in the shape of :

NIGHTINGALE (G3ZPU), SWALLOW (G8EZE), LARK (G3CWC), STARLING (G3ALG), MARTIN (G2IZ), SWIFT (G2COC), WREN (G3IRA), FINCH (G3XIQ), PIPER (G3KQC), SPARROW (G3JKN) and the ROBINS (G3OIG).

Odd odes might be expected from:

BURNS (G3KVK), COWPER (G8GUR), MILTON (G3OEV), SHELLEY (G3NZY) and KEATS (G4CCN).

When tuning up, spare a thought for:

WAGNER (G3BID), WEBER (G5ANV), COATES (G3IGU), DVORAK (G5BCZ) and ALFORD (G2DX).

PAINTING (G3OUC) is not well represented but don't despair, because, if pressed, G3DPS can be relied upon to produce a Picasso in the form of RSARS 0651 (refers to the XYLs painting in oils, and the christening, by Ken, with the name 'Picasso' - a name which has since stuck!! - Ed.). From the literary world significant contributions to "Mercury" should be provided by GOLDSMITH (G8ISM) and THACKERAY (G4CPO).

Despite the fillip given to geographical education by the activities of WAB, it seems that our knowledge of the British Isles is still woefully weak as is evident from the placing of SCARBOROUGH (G3UCY) in Leicestershire, TAUNTON (G3UCZ) in Yorkshire, HULL (G3ROK) in Hertfordshire, BRADFORD (G3LCK) in Kent, EXETER (G3BNV) in Norfolk and DARLINGTON (G3YWD) in Sussex.

Amateurs are generally regarded as closely-knit communities but some seem to be poles apart with:

NORTH (G2KO), SOUTH (G3SGJ), EAST (G3GPU) and WEST (G2CMW).

Interesting couplings are provided by:

LONG (G3XDL)/SHORT (G2DGB), SUMMERS (G3RKJ)/WINTERS (G3NVK), POLLING (G8AES)/BOOTH (G2DSF), MERRY (G4CDM)/CHRISTMAS (G8GPS), BEECHAM (G4CYS)/PILL (G5CX), GOOD (G8AVA)/FRIDAY (G6AHV/T), WYATT (G3PNX)/EARP (G8EYS), TINNING (G3FIX)/SOLDER (G5FA), MELTON (G3WKM)/MOWBRAY (G3VUE), and SHARP (G2HMI)/BLUNT (G3OPQ).

The possibilities are seemingly endless but before you rush off to verify these, or dig out a few of your own, just consider what an awful waste of time it really is. Better that you grab your HOE (G3KF) and BARROW (G3YLQ) and dispose of some of those weeds. If you have neither a garden nor a 1975 Call-Book, then that is surely your MISS FORTUNE (G3BVX).

HOW'S YOUR SWR? or SALES WANGLES REVEALED. ZL1AXM/RSARS 0530.

(Being the second of two articles from Ken, Ex-G2KK).

In this modern age it is difficult to open a leading scientific journal like "Mereury", or to eavesdrop on a contact without seeing or hearing some reference to a mysterious thing called 'SWR'. To everyone else it appeared to be a thoroughly familiar subject, but to one whose technica1 background really never got much beyond a rather shaky capability of being able to draw the circuit, usually with variations, on the Telephone, 'D', Mk III, for a long time it remained a closed shop. However, I'm happy to say that, following a visit to my friendly corner-store, related below all is now crystal clear.

The dramatis personae in the tense drama about to be unfolded are just two, the horny-handed assistant and myself.

ASSISTANT : "Good morning, Sir, what can I do for you?."

ZL1AXM : "Good morning, a pound of 1" nails please."

ASSISTANT : "Yessir" He grabs a fist-full, at the same time giving a small tweak to a small knob on the base of the scales.

ZL1AXM : (Ever fascinated by the onward march of science,) "What's that knob for?."

ASSISTANT : "That adjusts the SWR."

ZL1AXM : (Thinks "It's raised its ugly head. again") "SWR?"

ASSISTANT : "Yessir, Short Weight Ratio."

ZL1AXM : "What's the Short Weight Ratio?"

ASSISTANT : "Oh, the amount of gain to the Company is affected by the SWR, and if it isn't adjusted properly, a loss could be reflected in the Company Report."

ZL1AXM : "Who determines the amount of gain?"

ASSISTANT : "One or more of the Directors governs that, although if the SWR is too high, you find that sales resistance goes up to an unacceptable level and the gain drops."

ZL1AXM : (Mindful of all the previous purchases made at this store) "Have you always done this?"

ASSISTANT : "Oh yes, but it's easier now that we have this micrometer adjustment thing fitted. In the old days we used to fix a dummy load under the scale with a piece of chewing gum. We had to be careful because if the dummy load was too near the radiator the gum dried out and the dummy load fell off and the SWR went all hay-wire. It was a dead loss".

ZL1AXM : "I don't think I will bother with the nails, I'll just take a box of screws instead."

ASSISTANT : "Yessir."

ZL1AXM : "Are these solid brass?"

ASSISTANT : "Yessir, and whats more they are guaranteed not to rust for Twelve months from the date of purchase."

Exit ZL1AXM, enlightened, who rushes off to join, on even terms, that erudite bunch on 3720 kHz who are forever discussing SWRs. They must be an honest crowd because they are always boasting of, instead of bemoaning, a SWR of 1:1, some even better.

HELP.

A non-member, S.H. Webber, member number 146 in the G-QRP-Club requires any details or source of information on the STR/8C receiver. It is believed to he an ex-Service receiver. Any news to S.H. Webber, via Rev. G.C. Dobbs, 8 Redgates Court, Calverton, Nottingham NG14 6LR.

SO IT HAPPENS IN OTHER ARMIES TOO?

(The following was first printed in "QRA NEWS" (Quannapowitt Radio Association) and reprinted in The Amateur. Radio News Service Bulletin. Acknowledgements are hereby made to both sources - Ed.)

HELP STAMP OUT HALLEY'S COMET.

A Colonel issued the following directive to his Executive Officer. (Adjutant - Ed.).

"Tomorrow night at 2000 hours, Halley's comet will be visible in this area, an event occurring only once every 75 years. Have all the men fall in on the Battalion area in fatigues (working dress), and I will explain this rare phenomena to them. In case of rain, we will not be able to see anything so assemble the men in the theatre and I will show a film on it".

Executive Officer to Company Commander:

"By order of the Colonel, tomorrow at 2000 hours, Halley's comet will appear above the Battalion area. If it rains, fall the men out in fatigues and march them to the theatre there the rare phenomena will take place, something which happens only once every 75 years".

Company Commander to Lieutenant:

"By order of the Colonel who was in fatigues at 2000 hours tomorrow evening, the phenomenal Halley's comet will appear in the theatre. There is absolutely no explanation for this unusual event, and it is for that reason that the Colonel is going to explain it to you in full. In the case of rain in the Battalion area, the Colonel will give another order, something, which occurs every 75 years.

Lieutenant to Sergeant:

"Tomorrow at 2000 hours, the Colonel will appear in the theatre with Halley's comet, something which happens every 75 years. If it rains he will order the comet into the Battalion area."

Sergeant to Squad:

"When it rains tomorrow at 2000 hours, the phenomenal 75-years-old General Halley accompanied by the Colonel will drive his comet through the Battalion area theatre in his fatigues."

DL AGCW SUMMER QRP CONTEST 1975.

G8PG.

No Journalistic fireworks this time - there is no need for them. Low sun-spots or not, this Contest broke a lot of records, and the U.K. entry comes out of it very well. The winner, though, was WB9WGZ/9 with a record score of 12,908 points, made entirely on 40 Metres. His power was 3 Watts and the antenna a Vee with 250 ft per leg. His average QSO rate was one every FOUR MINUTES!!. Then came the big break - second place to GW4DO with 10,976 points, achieved with 9 and 5 Watts, crystal controlled. The 66 ft, Zepp was used to push out signals on 40/20 and 15 Metres to produce this score, which also beats any previous winners total. There is still more good news for the 'G' contingent. Third place was taken by G3IGU, fourth by G3DNF, ninth by GW8PG/P (Yes, the old faithfuls were still in there, pitching). Tenth place went, to G3NEO, Seventeenth to G3UYM, Twentieth to G3RJV/F and Twenty-first to G4BJF. So with 4 in the first 10 and everybody in the top third of the placings we can feel a bit of pride in the effort from the U.K., which has undoubtedly been made more effective by the closer liaison and better publicity resulting from the formation of the G-QRP-CLUB. The Contest produced entries from 14 Countries in 3 Continents. One interesting appearance was that of VO1KE, who finished thirteenth. Running 5 Watts to his 200m long wire on 20 and 40 he had the distinction that all his 40 Metre contacts were made over the VO-to-Europe path - and we still hear people moaning : "Can't work anything with only this 180 Watts bare-foot". The next Contest is on 17/18th January 1976.

A. Good-Pynt, Copy Boy and Reporters Chip Fetcher, Tarrent Gunville "Bugle"

CONTESTS AND AWARDS.

G3EKL/RSARS 0046.

I'm writing these few lines as the autumn leaves fall and the Catterick air thins somewhat.

It was certainly miserable and thin a few Sundays ago when the Society VHF Contest was held. Not only was the WX rough but also codx. Nevertheless, some members braved the elements once again, and I'm expecting G3VSA/P's claim to lead the field.

A few more Awards have been processed and, as at October 1st, this is how things stand. As I expected, John, G3FMW, has quickly produced another 30 QRP contacts and passed the 100 mark - Well done, John, and I hope you'll always know the date in future!!. Still on the QRP ladder, Bill, G3DBU, has stretched up to 50 confirmed contacts. Reading the 'SWM' the other evening it would seem that I have definitely ruffled G2HKU's feathers, unless Ted is unable to find RSARS members on the bands that he is so regularly operating. (Editors note - Since this was written, Ted has appeared on the Net, saying he is "unruffled" and still making progress. Pressure of other work has meant a slowing down. Watch out, Ray, he'll probably come up with a "750 Worked" claim!!.).

Bert, G3XSN, has claimed for his special SILVER - that makes No.5. He has also qualified for 400 "Any Mode" at the same time. Well done, Bert, and is your automatic, all-swinging keyer OK now, by the way?. Wilf, GW3XHJ, has passed the 350 "AM" (Any Mode, not Amplitude Modulation - Ed.). rung whilst G3SZR, G3HPJ and G2MI have received their Class 1 "AM" Certificate.

On the CW ladder, G2WQ has "clocked in" at 50, but there has been no movement at all on the VHF scene.

Still no firm news about the new Certificates - it is in the hands of our QSL card over-printer and both Jack (DPS) and I are expecting a ring any day.

Don't forget - 5-59 Contests are in November, December, January and February (that's on 40/80/80/440 respectively, and the 'Le Touquet" is in March (All Bands)

Very 73 and the compliments of the Season.

RAY.

THE CURRENT AWARDS LADDER.

G3EKL/RSARS 0046

(At the request of one or two members, Ray has sorted out the current Awards Ladder situation which is produced below. - Ed.).

SPECIAL AWARD - EUROPE.

Supreme - 500 : GW3ASW. Silver - 400 : G2KK, G8VG, G3YSK, G3XSN, Bronze - 300 : G3UAA, GW3XHJ. Basic - 200 : G3HWL, GM3PIP, G3JVD, G3YBT, G3EYD, G2HKU, G3WMZ, GM3HGA, G3WXX, G2TT, G3VSA.

SPECIAL AWARD - OVERSEAS.

Silver - 200 : 9H1BX. Bronze - 150 : MP4TDA, Basic - 100 : VS6AA, MP4TAF, 9M2DQ.

"ANY MODE" INCREMENTS - OVERSEAS.

200 : 9M2DQ, 9H1BX.

CLASS 1 - OVERSEAS.

ZC4HS, VS6AL, 9H1BE, 5Z4LS, 5B4FF, VS5MC.

CW BASIC - OVERSEAS.

ZL1AXM, K2JFJ, 9H1BX.

"ANY MODE" INCREMENTS - EUROPE.

500 : GW3ASW.
400 : G2KK, G8VG, G3YSK, G3XSN.
350 : G3UAA, GW3XHJ, G3EKL.
300 : G3HWL.
200 : G3EYD, G2HKU, G3WMZ, G3ONU, G3WXX, G2TT, GM3HGA, G3NT, G6RC, G3ZOJ, G3NOB.

CONTESTS AND AWARDS - Contd.

CW AND INCREMENTS - EUROPE.
150 : G2KK, G3UAA.
100 : G3YSK, G8VG.
50 : G3EKL, GW3ASW, G3YBT, G3XSN, GW3XHJ, G3NT, GM3HGA, G2WQ.
25 : G3VIR, G3FGN, G3NVK, G2HKU, G4BKU, G3FMW.

CLASS 1 - EUROPE.
G2KK, G8VG, G3XSN, G3JVD, G3HSE, G3HWL, DL6AA, G3WZQ, G2CVY, G3WMZ, G3HBE, GI3JEX, G3WPW, G2HKU, GM3PIP, G3EYD, G3HXJ, G3UAA, G3YSK, RSARS 0624, GW3ASW, GM3LWS, RSARS 0349, DL5XW, G3WRY, G3ZFZ, G3YBT, G3IR, G3VIR, G3ZDP, G3ONU, G3ZCV, G3NVK, GW3HUM, GM3HGA, G3MAY, G3NOB, G6RC, G3NT, G4ASW, G3WYN, G3VSA, G5GH, G3GEJ, G3WXX, G2TT, G3EKL, G3ZOJ, G3ADZ, G3EFY, DJ0BU, G3PJB, G3DBU, G4BKU, G4DBR, G4BIZ, G3IUD, G3SZR, G3HPJ, G2MI, GM3VVM.

VHF AND INCREMENTS.
50 : G3YSK.
30 : G3VSA.
20 : G3VIR, G3EKL.
12 : G8FVC, G3NT.

QRP AND INCREMENTS.
100 : G3FMW.
50 : G3DBU.
20 : G3DNF.
12 : G2HKU.

o-o-o-o-o-o-o-o-o-o-o-o-o

NORTH YORKSHIRE MINI-MEETS - G3CIO.
ALSO BY G3EKL/RSARS 0046.

As you may have gleaned from the last two "Mercury's", G3CIO has raised its head again.

The Club meets each Tuesday evening in the Garrison Club Room and also runs a local Net at 1830 hrs Clock Time each Tuesday on 28·500 MHz enabling members to "clock in" if they are unable to attend.

An RAE course started in September and, with twelve students (including two ladies), there seems a good chance of increasing the local QRM level sometime in the New Year.

The Club has also settled on a regular "out" night when it meets at "The Greyhound" HACKFORTH (about 4 miles SE of Catterick) on the second Tuesday of each month at 2100 hrs Clock Time. Any members in the vicinity are warmly invited to drop in on any Tuesday, particularly the second one in the month!!. So, don't forget: Every Tuesday, 1800 hrs Clock Time on 28·500 MHz., 1930 hrs at Club House, Second Tuesday of the month, 2100 hrs Clock Time at The Greyhound, Hackforth. (GR 91/242931, QRA Loc. ZO 52 d). Ray.

HELP.

Bill Bailey, the Curator of the Royal Signals Museum, is still looking for bits and pieces worthy of display. In particular, there is quite a bit of space in the display cabinets which show shoulder flashes worn by Royal Signals. As they are no longer worn on military uniform they are becoming few and far between. If you have a shoulder flash(es) worn by Royal Signals personnel at any time, in any theatre, PLEASE don't throw them away. Stick them in an envelope (with a note of explanation, Unit, date, theatre, etc,) and send them along to the Gen. Sec. This also goes for any other items of interest.

TRANSISTOR CIRCUITRY, LOGIC, GATES, ETC. - FINAL PART.

IMPROVEMENT OF WAVEFORM.

80. The speed with which a transistor can be switched from one state to the other depends on the effective junction capacitances of the transistor and the constants of the external circuit. Hole storage effects in the semi-conductor material are significant when a transistor is turned from the ON to the OFF state and, in practice, precautions are usually taken to reduce the switching delay.

81. Diodes can be used to improve both the speed and the accuracy of transistor switching circuits. It has already been mentioned that the effects due to hole storage in the semi-conductor material of a transistor are significant when the transistor is switched from the ON to the OFF state. The switching problem is further aggravated by the fact that most transistor stages will be considerably over-saturated when conducting since the circuit designer must assume a relatively low value for $\propto'$ to allow for the very large spread in this parameter. The solution is to provide means to prevent the transistor collector "bottoming" and, if necessary, to use a higher voltage for the collector supply so that the stored charge will be more quickly removed when the transistor is switched off.

82. Both techniques are illustrated in Fig.18(a). Saturation in this stage is prevented by the diode D1 whose cathode is taken to a small negative supply voltage, say 0·5V, The positive excursion of collector voltage will then be limited to this level by the clamping action of the diode. When the transistor is switched off the current carriers are quickly removed by the relatively high negative supply voltage but the negative excursion of collector potential is limited to a lower negative voltage V2 by the diode clamp D2. The binary signals are, of course, represented by the two levels of voltage V1 and V2 and, in practice, the DC levels of this stage would be chosen to match those in the rest of the circuit.

83. The diode D2 is also useful in stabilizing the collector potential against changes in output current when the transistor is in the OFF state. The principle is similar to that described for diode logic circuits where a higher supply voltage is provided so that the loading effect of the following circuit on the accuracy of switching can be eliminated.

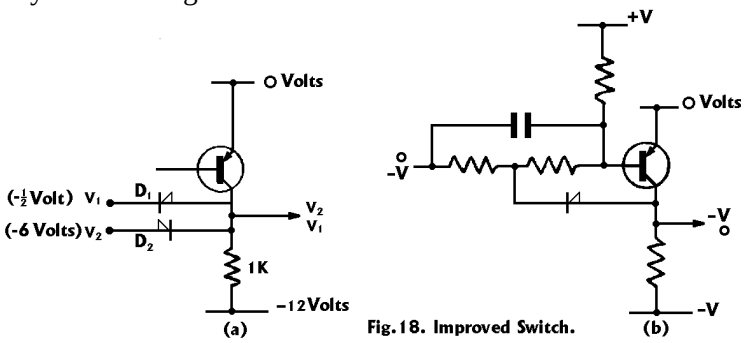


Fig. 18. Improved Switch.

84. A disadvantage of both the techniques shown in Fig.18(a) is that the power dissipated in the circuit is relatively large. The transistor dissipation in the ON state is increased because of the large voltage developed between collector and emitter and when the transistor is switched off there is still power dissipated in the collector resistor due to the difference in voltage between V- and V2.

85. An alternative approach to the prevention of transistor saturation is illustrated in Fig.18(b). Instead of biasing the clamping diode at a fixed potential, the diode is taken to a tapping on the input resistor. The total resistor values are chosen as before for the simple invertor but the tapping point on the input resistor is arranged so that the transistor will just not saturate when the input is negative. The advantage of this circuit compared with the one shown in Fig.18(a) is that due to feedback action the limit of excursion at the collector is stabilized against changes in circuit parameters and against large spreads in transistor current gain. Typical circuit values for this arrangement are indicated on the diagram shown in Fig.19.

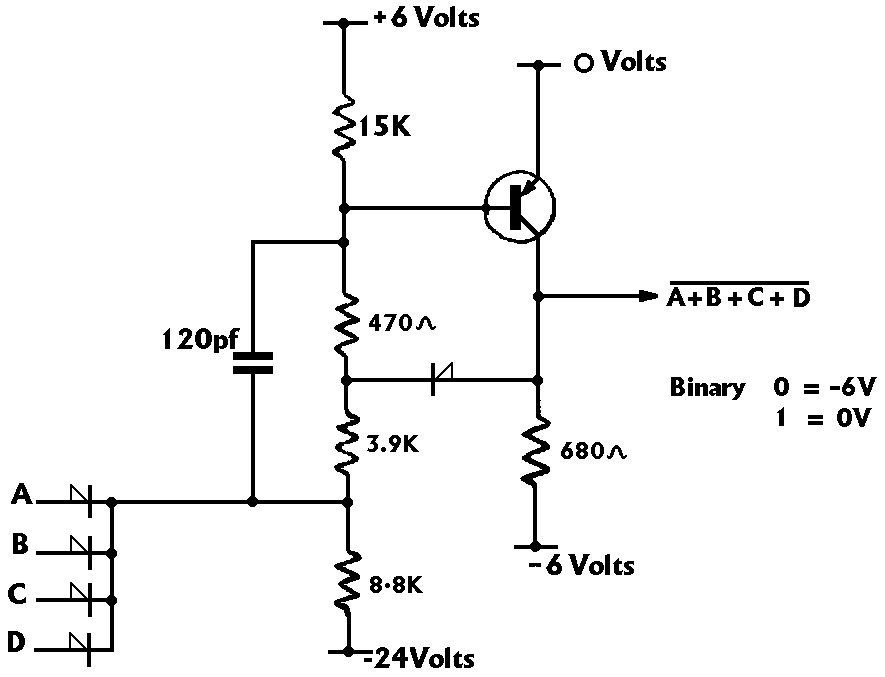


Fig.19. Typical NOR gate.

DIODE-TRANSISTOR CIRCUITS.

86. It has been shown that diode logic circuits can provide the AND and OR functions in an economical manner but that difficulties arise when gates are cascaded. By combining diode logic with transistor invertor elements it is possible to achieve isolation between stages and the NOT function is also available when required.

87. Fig.19 shows a diode-transistor logic circuit that is used extensively in a number of military and civil computers. It should be noted that the diodes constitute a positive OR gate with their common load resistor taken to a much more negative supply potential than that representing binary 0. The invertor element uses a fairly low value of collector resistor to provide good loading characteristics and corresponding values are chosen for the other components. Transistor saturation is prevented by the use of the diode feedback technique already described.

88. A mixture of DC and pulse logic is shown in Fig.20. Four diodes constitute a positive OR gate as before but their output is taken to an NPN invertor stage which, in the absence of clock pulses, remains in the OFF position. When all inputs are at -6v the positive going clock pulse will be insufficient in amplitude to switch the transistor ON. When one or more of the inputs is at 0v the transistor base will be on the point of conducting and the appearance of a clock pulse to the base will switch the transistor on to produce a pulse at the output transformer.

89. The circuit, like that shown in Fig.20, has been taken from a well-known family of computers and is typical of present-day practice. It should be noted that the clock pulses are clamped at the 0V level to prevent the accidental switching of the transistor when all the inputs are at -6V. The diode connected across the output transformer prevents a positive over-swing at the collector when the transistor is switched off. Transistor current during the ON condition is limited by the 68 Ohms resistor. The circuit is used to provide pulses to set registers depending on the state of DC logic at the input.

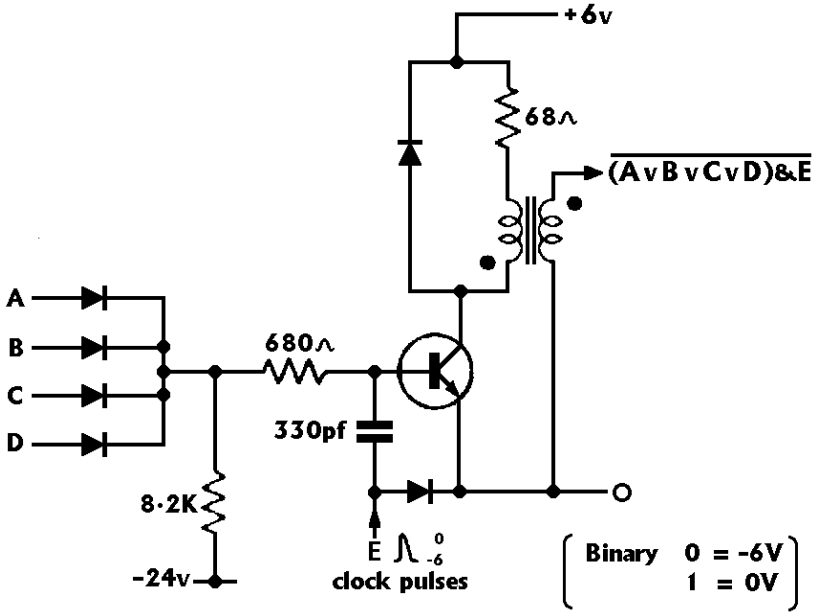


Fig.20. Typical pulsed NOR gate.

90. A rapidly growing family of Transistor-Transistor logic Integrated Circuits has virtually superseded discrete component techniques such as those described, particularly in commercial usage.

LETTER FROM SKOKIE.

W9IWI/0798.

".....The comment by G3IDG on Metric et al touches a tender spot... you know we're planning the same nonsense. But his remarks on the Platoon of the 73rd/88th Regiment of Foot and Mouth awoke some 50-years-old memories. In those days, my father was a service supervisor in the Western Union Telegraph Company New York Headquarters office, and one of my joys as a kid was to visit him at work. Needless to say, the women in the office were charmed to drop work and entertain a youngster, and one of them (now, alas, forgotten by name) amused me by sitting me at a "mill" and showing me how to make soldiers".

Mine did not have a spike on their helmets, but they did have a belt, and now I think of it, in her unmilitary way, the men were ordered to "left shoulder arms"!. And that is the way I still do it... using the back-space rather than the space-bar to position their pieces.

One day, if it seems worth it, I shall gather together some musings about the U.S. Army Signal Corps in World War II (at least, the little I saw of it) and some of our contacts with the Royal Corps of Signals. Until then,

73

W9IWI

(We are pleased to introduce to our readers the only "GI" member of the Platoon, seconded from W9 Company of the U.S. Jablin Rangers. He appears, all the way from the States, on the right - Ed.)

SOME ARE SHORT AND SOME ARE LONG.

ZL1AXM/0530.

(RSARS offer no guarantees regarding the truth or otherwise of this story!! - Ed.)

A name familiar to most in amateur radio circles is that of Samuel Finley Breese Morse (1791-1872), an American inventor. He is credited with devising the first electric telegraph and the Morse Code.

Amongst amateurs there are those to whom his code is more a way of life than an aid to communication, whilst to others it is complete anathema. Most will agree that it is effective. It is taken very much for granted and it is believed that few, even amongst the most passionate exponents of the art, are really aware of how the Morse Code came into being.

The doughty Samuel, having invented his electric telegraph, was stuck for something to send on it and was then obliged to set to work on producing a suitable code.

He was a lonely man who did not communicate easily with his fellow men. In solitude he laboured at his task but for long a solution eluded him. Of a highly nervous disposition he developed the habit of drumming his fingers on the table top during moments of tension and depression, a fact that did not escape his loyal band of assistants who, respecting his withdrawal, occupied an adjacent room. In time, they became very familiar with the great man's drumming and soon recognised recurring patterns which reflected his every mood. It was as if he was using another language to talk to them. A record was kept of the rhythmic patterns produced and at first an attempt was made to set them to music, Beethoven' s Fifth Symphony being a good example but that, unfortunately, did not progress much beyond the QSV stage and was dropped. This was followed by Pizzicato's Sonata for Aldis Lamp, regarded as one of the finest pieces of light music of its time, but that too went out. Fortunately, it was soon realised that these were unlikely ever to make the charts and attention was turned to exploiting the other possibilities of the system. One evening during a particularly acute attack of the blues when Samuel's digits had excelled themselves, realisation came that, perhaps here was the communications system that they sought and thus the Morse Code was born.

Those who display a marked antipathy to the system are thought to generate vibes of their own which are incompatible with Samuel's Code.

The Morse Code has been in use for many years but much experimental work on the original system is still carried out as the many variations heard on the bands today testify. It is believed too that much of the output of modern electronic keyers stems from attempts to recapture some of the more hysterical sequences of the great man's early work.

ARE YOU AN EX-ZC4???.

ZC4AU, otherwise RSARS 1164, writes from Cyprus to say that he has custody of "several hundred" of QSL cards for virtually every ZC4 call-sign issued since 1969. Garry remarks "The list is exhaustive and far too long to publish and some cards are 'rare 'uns'. Drop a line to Garry at : 23990865 S/Sgt BRENNAN G., Air Transport Liaison Officer, Royal Air Force, AKROTIRI, British Forces Post Office 53 enclosing the usual SAEs. Garry also mentions that the RAF Club ZC4AK has now passed into Army hands with the present O i/c Club as Captain KEANY, Royal Signals, the OC of 259 Signals Troop at RAF Akrotiri. He hopes to "re-enlist" the Club into RSARS

CONGRATULATIONS.

Are extended to Stan, G3VSA, on the award of the Europe Special Plaque No. 18.

ELECTRICAL NOISE IN MOTOR VEHICLES - Part II.

7. FUNDAMENTAL CAUSES OF RADIATED INTERFERENCE.

Radiated interference from an unsuppressed vehicle can be divided into two categories.

(a) Radiation within the vehicle affecting the performance of fitted equipment; radiation outside the vehicle being negligible.

(b) Radiation extending to a considerable distance from the vehicle.

The first category is undoubtedly caused by electrostatic or magnetic fields within the vehicle. As the magnetic and electrostatic field intensities of the induction wave die away at distances of a few wavelengths from the source, this form of interference is unlikely to extend very far from the vehicle, but within the vehicle the level can be high.

Electrostatic fields are normally at a higher level close to high impedance devices such as the HT section of the ignition circuit. The magnetic induction field tends to predominate close to high current low impedance circuits.

In category (b), the radiation is the result of the voltage stress in space produced by the electric field of the wave. Obviously, if the electric field is sufficiently high to cause an objectionable level of radiation at some distance from the vehicle the level of electric field and probably the magnetic induction field within the vehicle can be extremely high. Where the induction fields are low, it is unlikely that any appreciable level of radiation exists outside the vehicle. Measures taken to minimize internally radiated interference reduces the external field.

Examining the main source of internal radiation associated with the ignition circuit - the secondary of the coil, the distributor and the sparking plugs/leads - the physical size of this assembly tends to conflict with the requirements for minimum radiation. The larger the effective surface area of the assembly, the higher is the level of interference existing in the vicinity. It is of benefit to minimize lead lengths, particularly where the effective lengths tend to resonate at the frequencies in use. Additionally, the HT and LT leads must be sited as far apart as possible to minimize the transfer of RF noise to the primary leads by induction.

Unfortunately engine design for any given vehicle is fixed at the time of manufacture, and thus, although critical observation can often find ways of 'improving' the layout very little can be done to implement them.

Various vehicle layouts tend to exhibit marked differences in effective radiation. Where the ignition wiring is at the top of the engine, radiation is often worse than when it is at the side and partially screened by the engine block. Ignition HT leads can cause RF currents to be induced in the top bonnet cover of the engine compartment if they are close to the metalwork. Similarly, if the antenna is mounted on a front wing, the lower the ignition circuit is placed on the side of the engine remote from the antenna, the less the interference level.

8. MEASURES TAKEN BY VEHICLE MANUFACTURERS.

Before embarking on ways to minimize the remaining radiated interference it is as well to examine the suppression methods included by the manufacturers in various vehicles.

8.1 Ignition.

Details explaining the operation of the ignition circuit are included in Section 4. The spark discharge in practice tends to be oscillatory in character, and the obvious approach to reduce the electrical interference is to remove the oscillatory condition by damping the circuits concerned.

This is achieved by the introduction of a resistive component in the HT leads. The manufacturers include leads having a distributed resistance rather than lumped resistors at one or both ends of the leads affected. The latter alternative is less effective, particularly at the higher frequencies. All distributors are fitted with a special type of capacitor connected across the contact breakers and located within the distributor assembly. This capacitor has a dual role. Firstly it performs the function of a spark quench to prevent arcing, and thus increases the life of the contacts.

Secondly, by quenching the spark, the effective noise generated is modified, particularly conduction noise. In addition to some reduction in noise the main effect is to modify the character

of the noise, making it less objectionable.

Some vehicle manufacturers include capacitive shields at the plug ends of the resistive HT leads, and these increase the suppression by up to 10 dB. The actual value of the capacitive shunt is only about 10 to 12 pfd but being effectively located between the plug and the start of the resistive section the filtering action is appreciable, particularly at higher radio frequencies.

In certain vehicles, some reduction of radiated interference is achieved by special mechanical design enabling the plugs to be 'sunk' into the block. This tends to introduce a capacitive shunt at the end of the resistive lead as well as acting as a partial screen at the optimum point. The removal and fitting of the plugs with this arrangement usually requires some care.

Complete screening of the ignition system is usually only incorporated in specialised vehicles where equipments of extreme sensitivity and covering wide frequency bands are employed. Military vehicles are typical examples. With this method of suppression, the ignition system must be tailored for the requirements and usually operates at higher voltages to overcome the effects of the additional capacities introduced into the system.

8.2 Dynamo.

The dynamo, or DC generator as it is often called, is quite commonly left unsuppressed in a new vehicle.

The main cause of excessive noise from this circuit can often be attributed to wear. A new generator is generally relatively free from noise and remains so until the bush and commutator wear becomes appreciable causing the noise to rise to unacceptable levels. New bushes, skimming of the commutator and removal of excess mica separator ridges generally return the noise to its original state.

Several types of dynamo, are used by different vehicle manufacturers, and each type has its own peculiarities, which are generally known and appreciated by the vehicle designers. It is, therefore, not possible to outline all the various individual approaches to basic dynamo noise suppression in standard vehicles.

8.3 Ancillaries.

Assuming that the normal measures affecting wiring, layout, etc., have been undertaken during the manufacture of the vehicle, the amount of additional suppression fitted is likely to be limited to that included in the various ancillaries by the manufacturers of the units. As maximum interference levels, are specified by law in many countries, it is necessary to restrict the radiation from the individual units to the mandatory level before incorporating them in a vehicle.

Again, wear can increase the level necessitating additional protection.

8.4 Mandatory levels of Interference.

The levels of interference laid down by the various countries are determined by the effect upon receiving equipment external to the vehicle, with the receiver located at a predetermined distance from the source.

Thus, fields within the vehicle can be too high for interference-free reception by sensitive equipment, although the radiated level external to the vehicle may be within the maximum levels permitted.

Consequently, although the vehicle may be adequately suppressed for a conventional ear radio/tape player, operation of communication type equipment, particularly those operating in the HF and lower VHF bands, can be impossible without additional suppression.

9. ADDITIONAL SUPPRESSION MEASURES.

Assuming that the vehicle includes the basic suppression measures outlined in section 8, the problems consist of finding the optimum location of any proposed receiving equipment and ascertaining the area and mode of likely interference. Additional suppression must then be fitted to reduce any offending noise level to a point where the performance of the receiving equipment is adequate.

ELECTRICAL NOISE IN MOTOR VEHICLES - Contd.

9.1 Antenna position.

This is possibly one of the most basic, but important, of the points to observe during the installation of radio equipment.

Bearing in mind the previous remarks concerning the presence and strength of electrostatic and magnetic fields within the vehicle, obviously the antenna and connecting feeder should be as far from the source of interference as possible. Additionally, the location of the antenna for VHF and UHF transmitter/receiver units should be such as to optimize performance. Reference should be made to the Engineering Notes Publication entitled "THE LOCATION OF ANTENNAS ON MOTOR VEHICLES" (TSP377/1 - Pye Telecommunications Ltd., Publications Department, Banham Building, Mariners Way, CAMBRIDGE, CB4 1BN. - Ed.).

To minimize radio frequency noise, any part of the vehicle close to the base of the antenna (effective ground plane of a VHF/UHF antenna) must not be affected by interference currents. Any currents containing noise pulses, either conducted or induced, flowing in the effective ground plane of an antenna cause interference to be fed into the input of the receiver. It is essential to examine the vehicle's electrical system before locating the antenna.

In front engined vehicles with remote equipment, a rear mounted antenna offers greater protection against RF noise, particularly as the antenna feeder is relatively short, It does not, however, follow that a rear mounted antenna is free from interference if the main receiving equipment is located at the front of the vehicle. The longer length of feeder needed with this configuration can introduce noise from induction as it runs parallel with the electrical wiring of the vehicle. To minimize this effect, the feeder should be routed on the opposite side of the vehicle to that carrying the harness for the rear lighting circuits, etc. In vehicles where the battery is located at the rear, it is preferable to locate the antenna on the opposite wing to avoid any noise in the battery cable being induced into the antenna feeder.

The earthing of the antenna input is also important, particularly where the antenna is resonant at the frequency in use and the vehicle metal work performs the function of a ground plane (equivalent to one half of a dipole). Where this occurs, the signal is applied to the end of the feeder at the antenna and, if the dipole is to be effective, the feeder must be earthed to the vehicle at the base of the antenna.

Earthing the input at any other point causes problems of matching, poor VSWR and increases the probability of noise being fed into the input of the receiver from circulating currents in the bodywork.

9.2 Ignition.

Assuming that the antenna position has been chosen correctly, and the noise from the ignition circuits is still excessive, ascertain whether additional filtering can clear the trouble by connecting a non-inductive capacitor of between 0·2 and 1·0 ufd capacity between the battery terminal of the coil and the nearest earth point. The leads, both to the terminal and to the earthing point, must be kept as direct and short as possible.

9.3 Ancillaries.

The offending item of electrical equipment can be identified by switching on and off the various units and monitoring the noise on the receiver. The effectiveness of the additional filtering can be ascertained by connecting a non-inductive capacitor between the input power connection to the unit and its metal frame/fixing bolt. Series connection of a suitable choke in the battery feed at the unit often improves the effectiveness of the filtering.

The generator often requires a second capacitor connected to the field terminal if it is of the CONSTANT CURRENT TYPE, but a capacitor must NOT be fitted to the field terminal if the generator is used with a vibratory regulator except as recommended by the manufacturer of the regulator.

ELECTRICAL NOISE IN MOTOR VEHICLES - Contd.

9.4 Wheel Static.

The effect of wheel static is relatively infrequent and is only likely to affect reception on the vehicle.

The electrical cure for the interference due to intermittent discharge through oil films in bearings and on crown-wheel teeth consists of short-circuiting the insulating oil films by such means as fitting a suitable rubber contact bush or a phosphor bronze dished disc to the hub in such a manner that electrical contact is resiliently maintained between wheel body and chassis. The front wheels are the more frequent source but the trouble can also be experienced with the rear wheels where the insulating oil film is found at the crown-wheel teeth in addition to the bearings.

9.5 Measures to be taken.

Details of the various measures which can be taken are in a typical procedure shown in Appendices 2 and 3. The components necessary for the various suppression methods are usually available from stores supplying motor spares, and from stockists of approved electrical components for vehicles.

(To be continued).

MORE HERE AND THERE.

F3WL, who was away on holiday when he received his application form, has now returned home to 92 Rue de la Pompe, 92, PARIS, XVI*, France. He is interested in contacting RSARS members, particularly on 80. Jacques wonders if anyone knows the present whereabouts of some friends of his with whom he served in Cherbourg in the pre-Dunkirk era. They are Lieut. Richards (the O i/c of the Signals Unit to which Jacques was attached) Lieut. Bill Guest (from Epsom), Cecil Punter (from Tidworth) and Sgt Bill Webber, etc. Details, if any, to Jacques at the above address.

The OWL reports that Meredith, WB6JXC/RSARS 0723 will be visiting the U.K. in 1976. Having relatives in the Bournemouth area, we hope to see him at G4RS.

John, DA1EH, leaves the U.S. Army at the end of November and is looking for a civvy "Salt-mine" either in DA-land or in the U.S.A. He has recently been working on a Log Periodic Antenna and promises further details of the very good results obtained.

Cpl Andy Guest (wonder if Andy is a relation to the Bill Guest that F3WL is looking for!??), RSARS 0721, has moved to 11 Armoured Brigade Headquarters and Signal Sqdn., B.F.P.O. 29. He is keen to renew acquaintances with any old friends.

Cyril, G3XHA/RSARS 0336, writes from 65 Nelson Street, Scarborough, YO12 7TA and says "Two articles (in the last copies of 'Mercury' - Ed.) were of particular interest to me - The History of The Indian Signal Corps and the List of Indian Call-signs, on which I can give a little information. VU2EP was the call-sign of C. DAVIES (Chota), 2nd Indian Divisional Signals, Quetta, N.W.F.P. I was in the same Section and Unit and knew him well. We were both in the Quetta Earthquake Disaster, May 31st 1935 and the Unit was eventually evacuated by a change-over between the 2nd and 3rd Indian Div. Signals, the 3rd being at Meerut. We were then posted to Lucknow Infantry Brigade Signals from 1936 until 1938 during which time VU2EP was in operation at the Chackrata Station during the summer months. I was also very pleased to make contact with Arthur Blow, G2TT, after 39 years. Arthur also served with us at this time. Would like to pass along a Very Happy Christmas to Ken Cook, ZL1AXM, and family from all at Scarborough".

As well as business moves around Europe to such places as Holland and Italy, Bert, G3MAY/RSARS 0950 is also engaged in a short distance QTH QSY due to local redevelopment/ compulsory purchase orders, etc. We hope it won't be too long before you are settled again, Bert.

MORE HERE AND THERE - Contd.

A letter from Brian Young, Managing Director of Brandon House Ltd, one of the Hatton Garden jewellers who has agreed to give discount to RSARS members, thanks members for past business and encloses a copy of their latest catalogue. The catalogue is lavishly illustrated and contains details of a variety of jewellery offered. Prices are not cheap (after all, it is Hatton Garden!) but members are offered 42½% discount from listed (and window) prices of 18ct gem rings and 33⅓% from similar prices of all gold jewellery, Wedding rings, 9ct Dress rings, Bracelets, Gents 9ct rings, Mounts, Chains, etc. As an example, a large cluster ring of Rubies and Diamonds at £390 is offered to RSARS members at £224 - 25p, prices INCLUDING 25% VAT. Many items are cheaper, some dearer. Any member who would like a look at the catalogue and price list (including fitting card, discount ready reckoner, etc.) should send a LARGE SAE to HQ.

The OWL turned up again the other day after a notable absence. He stated that he had been to, among other places, the Blackburn area, where he learnt that G4CGT/RSARS 0833 had recently been working hard with some cassette tapes. Apparently, he edited, repaired and copied a number of cassettes of the RAE Course for the benefit of RAIBC members, as well as putting on new leaders, etc. All in all, a lot of work for which members of RAIBC are very grateful. Thanks, Norman.

Captain (Rtd) George Scott, RSARS 0659, will be making a temporary move very shortly to : 27 Mariners Drive, Swanage, Dorset

During a recent visit to the Amateur Radio Festival at St. Dunstans, Ovingdean, Near Brighton, the Editor had the pleasure of meeting (among many others) Con. M. Scarrott, who is the organiser and Secretary of TAPES FOR THE BLIND AND HANDICAPPED. This is a registered charity (No. 249955) and does sterling work on behalf of the White Stick and Handicapped fraternity. As an ex-Gunner, (11060739), Con found that he is eligible for membership of RSARS and his completed application form is awaited. With a letter to Headquarters Con enclosed diagrams of 3 items that could be very useful to blind and handicapped persons - an Audible RF Indicator (RNIB Design), Audible Field Strength Indicator and the RAIBC Xtal Band Edge Marker. It is hoped to publish these in the next 'Mercury', but if any member requires a copy of the diagrams, etc., Foolscap SAE to HQ should do the trick.

It is understood that the following are all eligible for membership of RSARS. If you have an address for them, HQ would appreciate receiving it : VE1AIC, VE3ATU, VE3AHU, VE3ARZ, VE3BGV, VE3BSG, VE3BZW, VE3DKJ and VE3NJV.

The voting for the 'best Mercury' article of 1974/75 can hardly be listed as a great success!! - only half a dozen or so forms having been returned to HQ. It is gratifying, however, to note that these forms cover almost every article that has appeared during the specified time, perhaps indicating that the general coverage of content appeals to almost all members. Nomination for the Award will be held over for a while - just in case another form or two comes in!.

The radio amateurs at the St. Dunstans Amateur Radio Festival mentioned the possibility of forming The St. Dunstan's Amateur Radio Club. Your General Secretary agreed, on behalf of RSARS and its members, to give what assistance we could in helping them get their organisation "off the ground". The Club would be designed to cater for the particular problems associated with White Stick operation both as amateurs and SWLs. Any members of RSARS who are prepared to assist in this worthy cause are asked to contact Headquarters. For us, they gave a lot - can we give a little for them???.

It is hoped that the Society may soon have another computer program - this time to calculate and print details on OSCAR-7. At present we obtain data from The National Aeronautics and Space Administration in the U.S.A. but due to short-range forecasts and postal delays, forward information is very limited. For further information watch this space (or some other space in 'Mercury') or listen to the RSARS Nets.

MORE HERE AND THERE - Contd.

As mentioned elsewhere, we welcome Captain M.J. Buckley, RSARS 0391, of 62 Ballards Way, South Croydon, Surrey, CR2 7JN as our ACF/CCF Representative. ACF and CCF members and Affiliated Units are invited to get in touch with Captain Buckley with details of your Unit, activities, NatNet operations, Call-signs etc. If sufficient information is forthcoming, a regular space in 'Mercury' will be made available for Cadet Section Reports - BUT WE NEED THE NEWS!. It is hoped that G4CCF will be more operational in the future and Cadets or Units holding Amateur Radio call-signs are invited to 'check-in' whenever they hear '4CCF.

MEMBERS WILL NOTE THAT THE COUNCIL PROPOSITION SHOWN ON PAGE 1 (PARA.4) ALLOWS PAYMENT OF MEMBERSHIP FEES BY SENIOR CITIZENS AT THE OLD RATE. MEMBERS QUALIFYING ARE ASKED TO ATTACH A NOTE SAYING "SENIOR CITIZEN" TO THEIR PAYMENT (IF SENT TO HEADQUARTERS DIRECT) OR ATTACH AN "S" AFTER THEIR RSARS NUMBER (REFERENCE NUMBER} ON BANKERS ORDERS.

John Worth, better known to many as G3ZKA and who has recently rejoined RSARS, is now in one of the 'Lands of sunshine' and operating as A4XGF. Already active on 20 with an Atlas rig but, at the moment, a mediocre antenna, John has had several QSOs with HQ. He has already ordered a batch of QSL cards so how about giving him somewhere to send them?.

Looking through the October 1962 copy of "QST" the following phonetic alphabet came light : A - Anthropomorphic, B - Beneficiary, C - Concentricity, D - Differentiation, E - Epithalamium, F - Fiduciary, G - Gastrointestinal, H - Hypercatalectic, etc. Perhaps better than A for what 'orses eat, B for Button, C for Sailors, etc.

TAILPIECE.

Ref. the article on pp 36/37, Walter drops a line to tell us "Pleased to say that after correspondence with the manufacturer the faulty component has now been replaced free any charge. Walter also adds that he has received his QSL for a QSO with GB3SDR and "vy FB it looks too" Walter thinks that the lads at GB3SDR (Stockton and Darlington Railway Anniversary station) did a first-class job although they caused quite a few pile-ups.

THANKS.

Many thanks to H. Graham, GM3VVM from up there in Linwood. As well as sending along his Postal Code Barry enclosed a number of Green Shield Stamps. HQ now has 6 Books completed - all collected by 3 members!.

ORDER FORMS.

New Stores Order forms come into use on January 1st 1976 and a copy should be included with this 'Mercury'. These increases are very much regretted but, in this day and age, are inevitable. A recent re-order of Society Ties showed that the price has risen from the original £1 to over £1 - 50p. Due to postage increases, part Post/Packing has also had to be included.

SILENT KEYS

G3HID

A letter from Mrs. C.E. King tells of the passing of her husband Major (Rtd) E.F. (Ted) KING, G8HID/RSARS 0936 who died suddenly at Liverpool on 28th September 1975. Ted was an ex-member of Royal Signals, "a Corps in which he spent some of the happiest years of his life". Mrs. KING has donated the equipment of the late G8HID to The Cheshire Homes. The President, Council and all members extend deepest sympathy to Mrs. KING and family. R.I.P.

G3RLP

A letter has been received at Headquarters confirming the passing of RSARS 1001/G3RLP, William Derrington. Mrs. Rachel Derrington, of Appledown, Lewes Road, Scaynes Hill, Haywards Heath, Sussex, RH17 7PG writes ".....to let you know of the death of my husband, Eric William Derrington, G3RLP/RSARS 1001. He died in Cuckfield Hospital on 25th May. He was just 56 and died just four and a half weeks after complaining of indigestion due to cancer of the stomach. As you know we had only moved to Sussex from Brixham the previous August and Eric did not find much time to get on the air with all the work to be done at the new QTH".....".

Eric was proud of his RSARS membership and his membership number 1001 (to quote his own words "They don't come cleaner than that!"). To Mrs. Derrington, family and friends, the President, Council and all members offer sincere condolences.

LIBRARY ADDITIONS.

Through the generosity of Bert G3MAY, the RSARS Library now has copies of Parts 1 - 6 (Red Series) of the Phillips Data Handbooks. These deal in great detail with the following items in the Phillips range:

Part 1a - Rectifier Diodes, Voltage Regulator Diodes, Transient Suppressor Diodes, Thyristors, Diacs, Triacs, Rectifier stacks.

Part 1b - Small Signal germanium diodes, Small Signal silicon diodes, Special diodes, Voltage Regulator Diodes, Voltage Reference Diodes, Tuner Diodes.

Part 2 - Low Frequency transistors, Low Frequency Power transistors.

Part 3 - High Frequency Transistors, Switching transistors,

Part 4a - Transmitting transistors, Microwave devices, Field Effect transistors, Dual transistors, Microminature devices.

Part 4b - Photosenetive diodes and transistors, Light Emitting diodes, Photocouplers, Infra-red Sensitive devices, Photoconductive devices,

Part 5 - Linear Integrated circuits.

Part 6 - Digital Integrated Circuits, DTL, CML, MOS.

It is emphasised that details are for Phillips devices. Members may borrow any books held in the Library at time of application upon request. Volumes will be despatched by HQ and should be returned as soon as possible, preferably within one month. Members are asked to return the books together with an amount equal to the postage paid by HQ, i.e. member pays postage each way only, there is no charge for the loan of the books. If you have duplicate copies of any books, pamphlets, etc., please forward them to HQ Library.

WELCOME

Once again we extend a hearty welcome to members who have joined us. We all hope your stay with us will be a long and happy one.

RSARS 0004 - ARTHUR JOHN RAWLINGS, VE3GDO, 85 BRANSTONE ROAD, TORONTO, ONTARIO, CANADA, M6E 4E3. A "Re-enlistment" due to a contact with G2KO, Arthur may be known to some as G3PFC or under his previous number 0021. Lived in VE for 7 years. Not a "fixed" type by any means 'GDO has travelled from Toronto to Vancouver and vacationed in the West Indies - Barbados, Antigua, St. Lucia, Grenada, etc. Runs a KW2000A barefoot to a TA33Jr at 35 ft, mainly catching DX on 20 and 15. Interested in (and listens to) 160 but has no room for a good Top Band antenna. Works in Contests mainly looking for new countries. Present score: DXCC (Phone) with 114 Countries. Served in Europe during the last War as REME AQMS and later served in The Royal Observer Corps as an Observer Lieutenant in the Operations Room for 16 years, latterly at Lansdown, near Bath, No. 12 Group. Joy, the 'GDO XYL has even closer connections with Royal Signals, serving as a Sergeant in Royal Signals and also later in the ROC. She was stationed at such places as Dover, Bristol, etc.

RSARS 0351 - GORDON EDWARD WHITEHEAD, OFFICERS MESS, RAF WEST DRAYTON, MIDDX. Gordon joined the RSARS ranks whilst serving with the Corps here at Blandford and undergoing the rigours of an extensive Automatic Data Processing Course. Runs a home-built G2DAF TX/RX and operates 160, 80, 40 and 20 Metres and he has a secondary interest in Radio Controlled Model Aircraft. Under the section headed. "I am interested in contacting", Gordon writes "Everyone". Is G3YGW.

RSARS 0774 - ALAN THOMAS FRANCIS, 119 GARRISON LANE, FELIXSTOWE, SUFFOLK, IP11 7RE, Alan's membership was prompted by a visit to G4RS. New out of the Service, his previous details read Ex-23820223, Corporal, Line Technician converted to Radio Relay Technician. First tour France, 1961-1964 with 227 Signal Squadron, then to Kenya and Aden, 1964-1968 with 210 Signal Squadron and, finally, to Belgium from 1966 until 1970 with 641 Signal Troop. Getting ready for RAE (he is now BRS 35755). A member of RESCUE (Trust for British Archaeology) and. also a member of the National Art Collectors Fund. Under other hobbies, interest, etc., Alan lists "Founder Member of the Felixstowe Double Diamond Appreciation Society,. Associate Member of the Tiger Beer Appreciation Club, TUSKOR, Whitecup Appreciation Society, etc. etc. (Well, it's what your right arm is for I'm told. - Ed..).

RSARS 0805 - GEORGE FREDERICK BRINDLE, G3VXE, OC NATO FSS, RAF STENIGOT, NEAR LOUTH LINCOLNSHIRE. George does not say much on the back of his form. However, the OWL came to the rescue and tells us that George is still serving in the Corps, having started at Beverley, back in the middle 50's. Trained as a Radio Mechanic at Catterick in '54/'55 where he shared the same barrack room as the person writing this 'history'. Served, amongst many other postings, in Cyprus where he was ZC4IW. Spent a while at Blandford where he was a useful addition at HQ. Has another hobby in Gliding and, the OWL reports, he recently "pranged" a glider, doing quite a bit of damage to himself and even more to the glider. Fit and well again, we understand, we hope to be hearing from him when he gets settled in a new posting.

RSARS 0806 - GERALD DONN, 085 NURNBURG, FRANKLIN STRASSE 4, WEST GERMANY. If the surname looks familiar, it should. Here we introduce the big brother of a certain G3XSN (or vice versa). At the time of application Gerald was in Apeldoorn, Holland, having since moved to Nurnburg. His 'history' reads : Catterick Camp 1947. Trade OWL B III. Egypt February 1948 until June 1949 and served in 2 Egypt Command Signal Regiment, being stationed at Moascar, Fayid and Suez. As is normal with twin brothers in the Service he had Bert G3XSN to look after him (or to look after). Apparently a certain Maurice Caplan was in the camp across the road (GHQ) in Fayid, but the three never met (Perhaps a good thing!! - Ed.). The 'Terrible Twins'

became notorious for clearing up the Whist Drive prizes every weekend. Gerald listens to the RSARS Nets when circumstances permit.

RSARS 0807 - 1SG BUDDY RAY CHAMBERS, DA1DU/WA7TDM, 5771 SOUTH COLUMBUS BLVD, TUCSON, ARIZONA, 85706, U.S.A. At the time of application Buddy was serving with the Signal Operations Company (Hanau), APO 09165 in Europe. He has now returned to the States but whether to 'Civvy Street' or not, is not known. No newcomer to travelling, Buddy has held such call-signs as W4NIC, DL4DU, 9Q5US, BV1US and WA4VPN. From 1960 until 1964 he served with the 10th Special Forces Group at Bad Tolz in Germany. During this time he was closely associated with Royal Signals both on Exercise Winter Shield I and with the British 22nd Special Air Service with whom he was an exchange Communicator. With SAS he trained in Desert Survival and Desert Navigation. He is rated a Master Parachutist and has had over 18 years continuous parachute duty in Korea, Japan, Okinawa, Vietnam, Europe and the Near and Middle East. Started Amateur Radio in 1946 but the Korean Conflict and other duties put a 10 year 'hole' in activities. Main interests are HF working and experimental antenna work. Hope to hear more of you Buddy.

RSARS 0808 - MICHAEL JOHN HARROD, PT04B, 1 SQUADRON, 8 SIGNAL REGIMENT, CATTERICK GARRISON, NORTH YORKSHIRE, Michael was introduced to RSARS by Nick Raban (RSARS 0740) when he was a Cadet Lance Sergeant at Middleton A, Christs Hospital, Horsham. This was brought about by regular contacts with Nick on the CCF National Net at various CW speeds "but not above 14 w.p.m." Michael adds. Since those days he has graduated to higher things and is now undergoing training in Royal Signals at Catterick. With this training and the 14 w.p.m. we hope to see 0808 with a G4 call-sign alongside it before too long.

RSARS 0809 - GORDON WHITEHOUSE PARKES, 42 OLDBURY ROAD, WORCESTER, WR2 6AA. Not a lot on Gordon's application form, but sufficient to tell us that he served as a C.Q.M.S. from May 1942 until May 1946 with a Special Communications Unit. 'Nuff said. Welcome Gordon, and hope to hear G3NL around the bands.

RSARS 0810 - GEORGE WILSON GARDINER, G3WEB, 11 LANGDALE AVENUE, RAMSATE, KENT. George joined us with effect from 1st November 1973 and tells us that he was 22136171 ("I can still remember it!") Signalman Gardiner G.W. He was a National Serviceman from 1949 until 1951. Six months of this were spent at Catterick on a Wireless Operators Course followed by 18 months in Germany at such locations as Hilden, Muenchen Gladbach and Iserlohn. George adds " I really come from an Army family, my father and 2 brothers were all in The Black Watch. I think I was considered a bit of a rebel because I joined Royal Signals by choice." The rig consists (or consisted at time of application) of a KW2000B, a 12AVQ for the HF bands with a G5RV for the LF side. Hoped to obtain (and probably has now got) a Linear and a Beam.

RSARS 0811 - KEVIN STRAW C/o 74 BELPER STREET, LEICESTER. Kevin who joined us as a L/Cpl is now a S/Sgt (Yeoman of Signals). Recently forwarded his Service address but as this is being put into the computer it is not to hand at time of writing. However, the above address should find him OK. Kevin is a product of The Army Apprentices College at Harrogate where he served from January 1964 until April 1967. This was followed by a tour with 22nd. Signal Regiment as his introduction to Man's Service. This was followed by an upgrading course from Telegraph Operator Class II to Class I. This lasted from May 1970 until August 1970 and from then until March 1971 it was a tour with 222 Signal Squadron. In the meantime, and for good measure, he passed a Trade Test for Comcen Op., B III. Whilst serving with 222 Kevin obtained a 'ticket' as MP4TDU and used a Heathkit HW-32A, a Viking Valiant and a Hammerlund HQ-170. More recent history is not known, but a tour with 7 Signal Regt. and a Yeomans Course have both been 'survived'.

WELCOME - Contd.

RSARS 0813 - JAMES ALEXANDER FINNEGAN, Jim, one of our Northern Ireland members is also a keen Cadet Force member. Other interests include Chess (a member of his school Chess Club) and Astronomy (an ex-member of The Irish Astronomical Society). It was another Cadet Force member (GD8IQM/RSARS 0709) who introduced Jim to RSARS Jim has been operating on the NatNet as No. 1 operator of Call-sign 84 since the beginning of 1973 and spends about 3 hours every day on NatNet using a C12/Eddystone 730/4 combination, using a dipole and a centre-fed aerial. At home he has a 'demobbed' RX mostly for Cadet Force frequencies, but on which he also listens to Met. broadcasts and amateurs on AM ("if any"). Hopes to take RAE but lack of support at local Tech meant proposed course was cancelled. Hope to hear you soon, Jim.

RSARS 0814 - FRANK WILLIAM HENNING, G3GSW, 162 LITTLEHAMPTON ROAD, WORTHING, SUSSEX, BN13 1QT. Many members may not have worked Frank, but many will have seen him, as he earns his licence fee money as a freelance broadcaster and often appears on television, particularly in the Southern region. First saw khaki life in June 1941 and he donned a civvy suit again in August 1946. He spent 9 months at the Catterick OCTU in 1943. After this he was posted to Egham as Officer i/c a Medium Wireless Section, transferring some months later to 10 Sets. It was with a 10 Set Section that Frank went to France, landing at Arromanche about D+10. This "European Tour" covered France, Belgium, Holland and Germany and "quite an eventful life". Back to England at the end of 1945 and up to Huddersfield - in time to take a draft out to Singapore via India. In Singapore Frank had the opportunity to operate VS1BJ using (to quote his own words) "a rather remarkable (and, I should think, highly lethal,) converted Japanese transmitter, and a far more dependable AR88 receiver". Back home, Frank shared the call-sign G8SW with his brother until he went to Canada when G3GSW was taken out. At the time of application G3GSW could be heard via a Yaesu FT200 and a 4-Band Ground Plane antenna, although a TA-32 Jr was lying in the garden ready assembled awaiting time and conditions "to heave it into the sky". (Did it ever get up there, Frank?). Frank closes with "My working life is spent as a freelance broadcaster with the BBC - and I suppose one of my best known regular broadcasts is the weekly interview with Fred Streeter, the Radio gardener, now in his 97th year" (at time of writing - Ed.).

RSARS 0815 - BRIAN DOUGLAS CORPER, 3 STANTON PLACE, HAVERHILL, SUFFOLK. (G3ZOJ). Brian is too well known on the RSARS Nets to need much introduction, but his application form (completed over 4 years ago!) tells us that The Royal Artillery knew Brian as 23519055 Bdr B.D. Corper at time of application. The previous service list makes interesting reading : 1945 - 1963 Kings Dragoon Guards RAC, 1963 - 1966 Army Air Corps, 1966 - 1968 208 Signal Squadron, Royal Australian Signals, 1968 - 1971 Royal Artillery. Brian was 'enlisted' by G5YN/RSARS 0040.

RSARS 0816 - CLIFFORD HENRY HUSSEY, 24 FROME ROAD, TROWBRIDGE, WILTSHIRE. Clifford saw service with both the RAF (Radio Mechanic), 6 years War service, 6 years Reserve service. "This has been followed by 21 years as a Tels Examiner /E with 27 Command Workshops, REME. Clifford is hoping to obtain a ticket in the not-too-distant future.

RSARS 0817 - LIEUT-COL. IAN M. MACDONALD, W1GMC, 38 VERONICA STREET, LEOMINSTER, MA. , 01452, U.S.A. "Mac", as he is known to his friends, joined us over four years ago, when he was DL4MI. At that time he was serving with HQ SUPACT in Karlsruhe. He has since returned to the U.S.A. and is believed to be active under his W1 call. Mac was closely associated with Royal Signals in several ways including his time with The Armed Forces Communications and Electronic Association and with the Military MARS System. Doubtless, much more could be written on this subject but we'll wait until we catch W1GMC on the band one day. Welcome 'On parade' Colonel.

RSARS 0818 - MALCOLM ORMOND BINNS, G3YYU, 3 MAIN STREET, CALDICOTT, MARKET HARBOROUGH, LE16 8RS. The back of Malcolm's form reads "1960 - 1967 50 Div.

WELCOME - Contd.

Signal Regt. (TA), 1967 - 1969 101 Sub 'Regional Signal Troop (AVR III), 1969 - 1971 HQ 29 ENGR BDE (U) SIGNAL TROOP (AVR II). Malcolm bumped into RSARS during a visit to The Schoo1 of Signals for a TAVR Course. Welcome Malcolm.

RSARS 0822 - JOHN BALFOUR, GM3PFQ, 17 BANDON AVENUE, KIRKCALDY, FIFE, KY1 3BS. John, who joined us w.e.f. 1st December 1973, writes on the back of his application form "Served with Royal Signals from February 1945 till March 1948, Employed as a Special Operator, Served in Palestine and Cyprus. A dyed in the wool CW man since Army service, I run a very modest and out-dated 50 Watt rig. Most of the extra bits are home-built. I use an Electronic Keyer built into an OXO box. One length of wire 90' long and 20' high is the complete antenna system. Often have contacts with Chas, 'XTL/'SIG and Dave, G3FPC late nights. Would love to hear about any Ex-2 Wireless Regiment members". So all you 4-mile pointers, drop a line to John at the above address.

RSARS 0823 - MAURICE PASEY STEEL, G3TNM, 2 LINDEN AVENUE, SHEFFIELD, S8 0GA. A member of RSARS since 1st December 1973, Maurice tells us little on the back of his form, just "Served as a Radio Operator from 1942 until 1944, Obtained Ham license in 1964". Welcome, Maurice, perhaps you can tell us a bit more sometime about where that khaki suit took you.

RSARS 0828 - JOSEPH (TAFFY) KELLY, 12 CARTER ROAD, STOKE ALDERMOOR, COVENTRY, CV3 1BX, WARWICKSHIRE. Taffy, who was introduced to RSARS by G3HCM/0016, has been with us for some time, but we have only just managed to get around to introducing him to other members. Taffy transferred from The Royal Welch Fusiliers on 31st October 1920 to Royal Signals then at Maresfield. After passing out from various courses he was posted to 'G' Company as a W/T Op. Then saw service with The South Ireland Signal Section at Spike Island. Back "home" to 3rd Divisional Signals at Bulford Camp and this was followed by an "across the road" posting to Tidworth on formation of Mechanised Signals. Then to the 'Mecca' of all Signals types - Catterick Camp. After a stay at Catterick it was a "trip to the Sun" to join Egypt Signals followed by a posting as a Troop Sergeant to 'G' Troop Signals at Helmiah Camp. Then it was back to Catterick to 'F' Company (Boys) as a WO III (No!, that is correct - the rank of Warrant Officer Class III did exist, although now long gone - Ed.). During the Second World War, Taffy went to 3 O.T.B. at Whitby and then on to Huddersfield. When 3 O.T.B. was disbanded he was posted to 6 L of C at Ismalia. Then back to the U.K. and, of all places, to 3 O.T.B. again. Taffy was demobbed on 25th June 1945 after a total of 25 years with Royal Signals. You may have met him as 4178302 CSM J. (Taffy) Kelly. As a PS, Taffy mentions that he is nearly 80 years young. Welcome, Taffy, and we owe you an apology - hidden at the bottom of your form I found "MM" and we have never credited you with this decoration on Society records. As this is one of the medals that didn't "come up with the rations" we are happy to make this fact known and to amend the records accordingly.

RSARS 0831 - HERBERT JAMES CARSTENS, ZS1KZ, 24 DUNLUCE AVENUE, CLAREMONT, CAPE PROVINCE, SOUTH AFRICA. It was through the good offices of G3NOF that Bert became a member of RSARS way back from 1st May 1971. Just a brief entry on the back of the form which reads "South African Corps of Signals from 1st November 1939 until 30th March 1946 at Zanderwater Camp near Pretoria, South Africa". Nice to have you 'On Parade', Bert and we hope to be hearing something of you on the bands.

RSARS 0833 - NORMAN JENKIN BEM, G4CGT, 125 LAMBETH STREET, BLACKBURN, LANCS., BB1 1SG. A member since 1st May 1971, Norman 'enlisted' into RSARS as a SWL. He has since obtained G4CGT and a number of members will, no doubt, have heard/met him on the air. His service record reads "No. 2348171, enlisted Catterick Camp on 25th July 1940. Trained as an Operator B III on enlistment later changing his trade to Instrument Mechanic A III, A II and

WELCOME - Contd.

then A I. Awarded the BEM on 6th March 1944 when with 9 A.D. Signals. Went through the ranks as follows L/P/A/L/Cpl - 19-7-41, P/A/Cpl - 23-9-41, WS/Cpl - 19-12-41, P/A/L/Sgt - 5-2-42, P/A/Sgt 7-4-42, WS/Sgt - 6-10-42, P/A/WOII - 6-6-45. Discharged on 31-1-46.

RSARS 0835 - HARRY HEATH, G2AOK, 6 CHURCH STREET, STOW-ON-THE-WOLD, CHELTENHAM, GLOS., GL54 1BB. Harry was 'discovered' through a very old copy of the pre-War "T & R Bulletin" in which he received a mention. Brief details only "Served 1941 - 1945 in RAOC and REME as a Craftsman Electrician II. Main interest is in VHF and UHF up to 23 cms on AM and SSB. Has also held the call-sign F0AQT. Welcome OT.

RSARS 0836 JOHN ALAN NORTH, G2KO, "THE ELMS", BAINTON, DRIFFIELD, NORTH HUMBERSIDE, Y029 9HJ. John joined us w.e.f. 1st September 1974 and he was one of the members recruited as a result of the 'one and only' advert by the Society in "SWM", John is a past member of The Radio Security Service of which little was, and is said. If you knew the Service, perhaps you knew V/NE/20 - that was John's "Regimental" number. The Head of the Service at the time was Lord Sandhurst with Captain Hector G. Mappin and C.Q.M.S. Howes as local organisers. John has been retired from teaching for nearly 11 years now and is active on 80, 40, 20, 15, 10 and 2 with SSB and CW. He is also a member of R.S.G.B. and I.S.W.L. Often heard on the RSARS Nets and a welcome member of the Society.

RSARS 0838 - Lt. Cdr. RN (Rtd) HOWARD GRESLEY CUNNINGHAM, G8FG, 235 STATION ROAD, WEST MOORS, DORSET, BH22 0HZ. If the Rank strikes you as strange it is because Howard served in The Royal Navy from 1930 to 1958 and joined the Ministry of Defence (Army) after retiring. From 1958 until 1959, G8FG was with the Forces Broadcasting Service in London then moving to Malta until 1961. A change of Section then put him with COMCAN, The Commonwealth Communications Army Network, with whom he stayed in Malta until 1967, returning to the U.K. in that year and working with COMCAN at Pirbright until 1970. He then came to the School of Signals, later moving to The Signals Research and Development Establishment at Christchurch, Dorset. With so long abroad it is only to be expected that when Howard hasn't been signing G8FG he has had a variety of other calls including VP3C, VP3A, ZB1A and 9H1A. The OWL also informs us that he had an even earlier 'G' call than G8FG. Howard regularly visits G4RS on Wednesday evenings to put G4RS on the CW Net and for his efforts he was awarded the GW2OP Trophy. He is also an active member of The Ex-G Club.

RSARS 0839 - ALLAN STEWART, GM4ABO, FLAT 1A, WAVERLEY COURT, FOXBAR, PAISLEY, PA2 0DR. An ex-member of Royal Signals, Allan served from 27th November 1942 until 17th January 1947 although he does not mention Units or Dates. He does mention, however, that he trained as an Operator Wireless and Line reaching B II standard. Membership effective from 1st June 1971. Welcome, Allan, and we would be interested in any other details of those four-and-a-bit years.

RSARS 0840 - ALAN PRESSLEY, G4BXQ, 22 SPRINGBANK AVENUE, FARSLEY, PUDSEY, YORKS, LS28 5LW. Joined on 1st June 1971 when he was BRS 31182 having been introduced to RSARS by Peter Ellis, G3WTJ/RSARS 0308 - Alan joined Royal Signals as a National Serviceman in February 1954 training at Catterick as a Radio Operator. His first posting was to Air Support Signals Unit in BAOR, later being posted to 49 Armd Division Territorial Army for 3 years. During National Service Alan made L/Cp1 and took his B II Operator. He was a SWL member of the Club station DL2PA in Germany and his interest in Amateur Radio returned when he joined The Pudsey and, District Radio Club, G3EXP. At time of application Alan was married with two junior ops (both girls) and was also a member of CHC, FHC, Chapters 3 and 16, Sqdn 9 and OCKENDEN. The equipment at the time was a Trio JR500SE although, no doubt, the rig has changed with the coming of the 'ticket'. He met G3WTJ when Peter was operating GB3FRC at Whitby.

WELCOME - Contd.

RSARS 0841 - GEOFFREY HOWARD TIBBEY, "HEATHERS", HILTON, BLANDFORD, DORSET. Geoff served with R.E.M.E. and left the Service as a WO I. Tells us little on the back of his form but further details should be easy to come by - Geoff works in a Workshop in the next room to G4RS!!.

RSARS 0842 - ALAN WILSON, G3JHS, 25 WESTDOWN DRIVE, THURMASTON, LEICESTER, LE4 8HY. A small "73 de Roley, G3VIR" on the top right-hand corner of the application form indicates that Alan was introduced to the RSARS by G3VIR before he left for the Far East. Alan's membership is effective from 1st September 1973 and he tells of service in Royal Signals at Catterick Camp from 1949 until 1951 where he trained as an Operator Wireless and Line B III later becoming a B II. After qualifying he carried on instructional duties on Signals subjects. After demob he worked for 20 years in domestic radio and television. At time of application he was a Civil Servant engaged on instructional duties at Leicester Government Training Centre as a Radio and TV Instructor. Welcome 'On Parade' Alan.

RSARS 0843 ALLAN J. GIBBS, VK6PG, 12 MUNYARD WAY, MORLEY 6062, WESTERN AUSTRALIA. Allan may have met a few members under his other calls - G3PHG, AX6PG or from the local Club station (he holds the license) of VK6II. Worked for 10 years under the (then) Ministry of Aviation on the development of Signals equipment such as the GR3US, GRK206 and GA480A items. Left this to work for Redifon as a Development Engineer. Emigrated to Australia where he is working for T.V.W. 7. Allan had about five years on the R.S.G.B. Exhibition Committee when he was in the U.K. and since moving "down under" he has become a Founder Member of The 29DX Club in Perth. He is also a member of the Wireless Institute of Australia (W.A. Division) and, by now, should be active on RTTY 45·45 and 50 Bauds with 850 and 170 shift. The Terminal Unit is an ST-6 and-the rig is a home-brew G2DAF type pushing 400 Watts into a 3 element 3 Band Quad.

RSARS 0844 - CHARLES ALAN DAVIS, G3SZR, 148 BIRKBECK ROAD, BECKENHAM, KENT. Charles joined us from 1st January 1974 and gives service details as follows : National Service 1952, Royal Signals. Trained as Operator Wireless and Line at Gallowgate Camp Richmond and then posted to Korea with 29th British Infantry Brigade until demob. Served in the T.A. for 3 years. Active on all bands 160, 4 and 2 on AM, 80 to 10 SSB with a FTDX-150 - when time allows.

RSARS 0845 - LEONARD PEARSON, G3JFE, 300 SCALBY ROAD, SCARBOROUGH, YORKSHIRE. Len was introduced by 0652 and the front of the form shows that he has also held the call-sign ZB1LP. The back of the form makes interesting reading and is written in the finest freehand script your Editor has ever seen (A small example appeared in a recent 'Mercury'), The details read : Enlisted 6th March 1939, number 2328768. Started service at Burniston Barracks, Scarborough. "Ovaltinies". 'A' Company Depot Battalion, Baghdad Lines, Catterick, May 1939. 'E' Company, Depot Battalion, Kemmel Lines, Catterick, July 1939. 55th West Lancashire Motorised Division Signals, September 18th 1939 (T.A.). 'E' Section, 2 Company, 'D' Section 1 Company (Commander 'D' Section was 2/Lieut. Clarkson - now Brigadier). 'A' Section, 1 Company until February 1941. In March 1941 joined Expeditionary Force Signals, Glasgow (C.O. was Lieut. Col. "Inky" Udell). This later became 1st Army Signals and went to North Africa. Was with 6th Armoured Division Signals just before campaign ended (in 2 Squadron). Finished war with 6th Armoured Division in Austria. Posted back down to Naples, Bari and Rome to work with Cable and Wireless. Trained by 96 Sub Cable Section, Posted home to Harrogate (my hometown) to 3 Intelligence School at Uniacke Barracks. Demobbed 6th March 1947. Re-enlisted when our friends became funny over Berlin and Airlifts became necessary. Joined War Office Signals at Bampton after re-mustering as Radio Mechanic. Went to Korea with 29th Indep. Inf. Brigade. OC now Colonel (Tubby) Marshall. This was October 2nd 1950. Returned to the U.K. in December 1951 and resumed duties at Bampton as Cpl i/c Workshops. Demobbed from Bampton in August 1952,

WELCOME - Contd.

Commenced work at Scarborough after further training at Winchester in September 1952. Served three years in Malta from 1956 to 1959 and held the call-sign ZB1LP. Have been in Scarborough ever since employed as Radio Operator/Technician. Trades in Royal Signals, Operator Wireless and Line B II, Operator Wireless and Keyboard A III, Operator Wireless and Keyboard A II, Lineman C II, Radio Mechanic A II. Promotions : Up and down several times, more up than down, never down for disciplinary reasons. Demobbed as Corporal with 'Exemplary' character and, believable character reports!. A fine record, Len. Welcome, 'On Parade'.

RSARS 0846 - DONALD FRANCIS WILSON BEM, 19 FISHERS CLOSE, BLANDFORD, DORSET. At the time of application (July 1971) Don was a Staff Sergeant serving at and Blandford with 30th Signal Regiment. He later served at The School of Signals as a WOII before leaving the Service time-expired and settling locally. Although not licensed in G-land, he did hold the call-sign DL2VK in BAOR from 1953 until 1957 and also operated- from VS1KD when "out East". Welcome, Don.

All we have space for this time - unfortunately. Much interesting material remains to be published from the backs of application forms when circumstances permit, If you can fill in any historical points from the Corp's past please let HQ know. The Royal Signals Association and Royal Signals Museum are always interested. Don't think your memories are not important. - THEY ARE.

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SWL SECTION REPORT.

GORDON ALLIS - RSARS 0481.

Personal profile - Bernard Hughes RSARS 0712.

Bernard first became interested in Amateur Radio in 1946 whilst serving with a Signals Unit at Luneburg, but did not take up the hobby seriously until 1964. The first receiver purchased was a RX60, progressing through an Eddystone 840C, AR88D, Trio's JR500SE, 310 until the present-day RX which is a Sommerkamp FR500SDX, 160 - 2 Metres, with all filters, and fed by Dipoles for 10, 15 & 20 Metres, a 66 feet Long Wire and an FM Beam. Achievements are quite impressive with 325 Countries Heard, 300 having been confirmed, with 125 Awards gained. Among these - Heard Asian Prefixes, Heard All Pacific, Hong Kong Firecracker Award, International Journalistic Award and CHC Top Honors.

Some of the best QSLs received include VK2BKM/LH (Lord Howe Island), VK9KY (Cocos Keeling), K7LMU/TI9 (Palau), ZLIDS/C (Chatham Island) and IS9WNV on Spratly Island. Bernard was voted the Most Outstanding SWL CHC in 1970. Other activities include ISWL Council duties, responsible for Sub-Editor and Sub-Bureau Manager, Member of the International DX Association and RSGB BRS 25901. When not at the receiver Bernard collects Mint Stamps from ZL, VK, VE and G.

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Personal Profile - - Don Osborne AMISM RSARS 0879.

Don is ex-Royal Signals and was 2600777 serving from 1942 until 1946. He "passed out" as an OWL (Operator Wireless and Line) B III and served with the 2nd Ind. Para. Bde., and 1st Airborne Division. The QTH is situated 3 miles South of Derby, 100 feet a.s.l. Equipment in the shack consists of a FR400SDX, a receiver of unknown origin (believed to be a BEA 1155, but still receiving strongly!), backed up by a 9R59D, The antennas are a mixed bag - a 100 ft Inverted "L", also a 40 M Dipole and a 12 ft Vertical mounted in a false floor of the QTH. Ancillary gear includes a PR30 Preselector, a ZA 23831 Rejector Unit and a WS19 Variometer.

A selection of QSL cards on the shack wall includes XE1 - JA2 - JA3 - VE2-6 - VU2 - WA8 - PY2 - FM7 - FP8 - ZD8 - EL2 - VE8 - TU2 - CT1 - 9H1. All confirmations received are FOR CW RECEPTION (A point worth noting is that CW can be copied at 30 wpm - Ed.). Bands most frequently used are 10, 15 and 20 Metres with brief excursions to the LF bands for Signals Net and RSGB News on a Sunday morning. Don bemoans the poor return of cards when sending direct to a

Personal Profile - - Don Osborne AMISM RSARS 0879. - Contd.

DX station although sending more than enough IRCs for postage. In future cards will be sent via the Bureaux to see if the return ratio improves. (Trust your health is on the mend, OM, and keep up the good work with the typewriter. -Ed.).

QSL Information = QSL VIA.

A4XVB = G4DLG A4XGD = G3MOT A4XVI = G4DLG FR7AI/J = FR7AI HB0NL = HB9NL JA8AQN/JD1 = JA8JL WA6LRG/KB6 = WA6OWM N8GMI = K8HPS P29EW/P = VK4AE VP2ABB = 9Y4SF VP2EQ = WB2ZMK VP8OB = G4DIF VR1PE = KH6GKD VEZEBQ/5B4 = VE2RCS XJ0MAB = VE0MAB 5B4CA = G4AWJ 5W1AR = WA7LFD 7X5AB = F6BFH.

SIGN OFF.

As the post-bag is now empty of contributions, I would like to appeal to members once again to let me have details of their stations. It would be particularly interesting to hear from our overseas membership, listener or licensed, about their SWL days. One suggestion received has been for a Countries/Band Table in the SWL Section. This will be started as from the next edition of "Mercury". Meanwhile, Gd DX Hunting. 73 Gordon 0481

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THE LEICESTER SHOW - 1975.

Although only Les, G3VYZ, made the show from Blandford, it was pleasing to see that many members made the trip, some over considerable distances. Our sincere thanks must go to Rita, G3NOB, who, apart from working full-time on the RAIBC Stand, also looked after the interests of RSARS by maintaining the RSARS Visitors Book, The Book shows that the following members, 'signed in'.

30-10-75. G2CVV, G3NOB, G4DBR, G3NT, G3ZYE, G3EDW/9J2W, G4CAO, G8KLO, G4BOS, G3PHK, G4CGT, G3WNG, G3TTH, G3IBB, G2CKM, G3NVK, G2APN, G3SVP, G3HPJ, GD4ELI (Ex GD8IQM - Congrats OM), and G3XCS.

31-10-75. G3ZY, G4AXW, G3HCM, G4DXM, G3YIP, G4ECN, G3XSN, G3YRT, G4DJI, G4CVL, G3YBO and RSARS 0712.

01-11-75. G3MAY, G4AEJ, G3VYZ, G4AWS, G3FMW, G3DBU, G8IXD, G3GEJ, G2AUA, GW3ASW, G3VVE, G3UAA, GXYF, G3XWS, G3TXN, G3NUR, G3DCZ and RSARS 0647.

The OWL, who recently popped in after a spell away, said he had been to the Show as well and, after scanning the above list, said that he thinks he also saw G3MOW, G4BU, G4CJ, G8TK and G5PP there. We trust you all had a good time and we will be listening for all those brand new rigs, driven by those brand new keyers and/or microphones and feeding those brand new antennas!.

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GET-TOGETHER REPORT. By GEORGE G4BNI/0982.

Who worked GB3STD during the week-end 18th/19th October?, A call-sign not often on the air, it is the call-sign of St. Dunstan's Amateur Radio Society. It was during this week-end that St. Dunstans had their Amateur Radio Convention. Twenty-five White Stick operators eager to pick up any news on antennas, tuning gimmicks, speech processors - you name it they wanted to know. Among the company gathered for this convention were three members of RSARS, G4AWI, G4BNI and G4DJI.

The Convention had four guest speakers, Captain (TOT) J. Cooper Royal Signals, (Mr G4RS himself) who gave a very interesting lecture on Military Communications through the Ages. We had Jack on his feet for an hour or more. He covered the period from the year dot to the present day. He is a fair historian, ever ready to be questioned, but never wrong. Thanks, Jack, from all 25 of us - it was instructive, enjoyable and very interesting.

GET-TOGETHER REPORT. - Contd.

The next speaker was H.J. Hughes of the R.S.G.B, who, brought us up-to-date with the activities of the R.S.G.B. Again very interesting. After lunch, which was taken in the Winter Gardens at Ian Fraser House, St, Dunstan's Centre at Ovingdean near Brighton, we had a lecture by R.A. Ham FRAS, a lecture which created a deal of interest in the 10 Metre band, backed up by tape recordings and a number of items of radio equipment from his private collection, which we were all allowed to handle. This was followed by an account of the activities of the R.A.I.B.C, by Mr Con Scarrctt. A very enjoyable week-end - as always it went far too quickly. Our thanks must go to The Commandant, School of Signals, for giving us the privilege of hearing so able a lecturer as Captain Cooper. We have you on the speakers list for next year, Jack!. George, G4BNI.

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FINAL BRUSH-UP FROM HEADQUARTERS.

There are still a few "Telegraph" Atlases left.....All members are reminded of price and membership fee increases which become effective January 1st 1976.....Apologies again for the delay on Dymo badges and Windscreen Stickers. The manufacturers in Bradford have several times told us that "they are in the Post", "Mislaid in the warehouse", "Will be despatched tomorrow", etc. The first batch of Stickers received had all been printed upside-down and had to be returned.....Local suppliers of Dymo badge frames no longer stock them, but an alternate source of supply has been found".....Ties have been on order for sometime and are expected by the end of the year. Each new order requires a Mill order for weaving just enough cloth to fill the order..... It is hoped to produce OSCAR 7 predictions from our own computer program in the New Year…… Happy Christmas and a good '76.

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CHRISTMAS IN THE PAST.

(Headquarters recently received the following two poems, written by members of Royal Signals probably stationed in Tobruk during W II. Unfortunately, nothing is known of the authors other than their names.

DESERT WARFARE.

Sigmn G. Harker.

A Universe of space, infinite sands,
Unbroken line to mark off cloudless blue,
A shimmering heat that plucks the very life
Of withered thorns which strive and stretch out shoots
Groping in vain to take a hold on life.
The desert, mighty, void of hope, immense,
Disturbed from tortured sleep by sounds of war,
Her barren bosom throbs with life once more.
Across her brow came men and guns to wrest
From foemans grasp another sterile stretch.
And so the game is played on age-old sands,
Shades of the Caesars of a bygone day,
Their might decayed, great triumphs turned to dust.
Soon, as with them, shall our deeds grow obscure,
Our victories unimportant, efforts vain
Defaced by time. Once more the desert reigns,
Our warfare but a phase, long forgot.

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CHRISTMAS IN TOBRUK.

Sigmn. H.G. Knight.

1. There were six of us that Christmas
(And a war was on in the Desert),
A wireless set, six Englishmen the crew;
By the truck two aerial masts,
Gaunt fingers, pointing skywards,
Strained eager at the guy-ropes,
Quivering.
Outside an angry wind,
Sand-laden,
Slashed the sage-clumps
To whirling eddies swirling through the night.
Within,
An atmosphere of home, warmth, and light;
The pipes glowing,
Cans of beer (good honest English brew),
Carefully hoarded, ready for the day,
Eked out with captured cognac.
There was food too -
No turkeys or plum puddings,
But a biscuit potage
Bubbling on the Primus
Flavoured with apricot jam;
And the sandwiches - sardines from sunny Portugal,
Inevitably bully, persistent, omnipresent,
With cheddar from Australian grasslands
Thick spread on wholemeal biscuits;
And the nuts, too -
Valencian almonds,
Ripe, russet hazels insistently recalling
Rich autumn hedgerows at home.

2. And when we had feasted
And the mugs were drained,
Our voices lifted in song;
Time-honoured carols praising the wonder of Birth.
And soon we were deep in reminiscence.
Six schoolboys, muddy knees,
The smooth white snow,
Six piping voices shrilling through the crisping air
"While shepherds watched",
The door flung wide,
The cheery glow
Warm-spilt across the threshold,
The pennies clutched by eager, grimy hands -
"Merry Christmas, M'um"
And still outside an angry wind,
Sand-laden,
Slashed the sage-clumps.

There were times we regretted -
That innate yearning from home,

CHRISTMAS IN TOBRUK. - Contd.

A loving mother, excited children, wondrous-eyed
At some new toy or bulging stocking,
The sweethearts, wives, awaiting our return.....
The little things we missed so much as well -
A crackling log fire, and the roasted chestnuts,
Parties, and the expectant mistletoe,
Clinking glasses,
Cinderella at Dury Lane,
Yes, there were moments we regretted!
But it was no time for repining,
So the cognac poured more freely,
And we toasted Benito, the donor,
And just as heartily cursed him,
For it was he who made us spend,
That Christmas in Tobruk.

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A much more modern author offers the following :

From: G4EEC/RSARS 1176, "When reading the Minutes of the 14th A.G.M. of the Society, proposition No. 2 (page 10) struck me as amusing in its implications. This is probably due to having cut my teeth in the Australian cavalry where a particular word was commonplace!. The undermentioned might fill a space….."

TRIBUTE TO THE 14th A.G.M.

K.A. Taylor.

At the 14th General Meeting it was solemnly submitted
That initials R.S.A.R.S. no longer really fitted
No Seconder uprose to support this strange new notion
So the members as was proper, could not vote on any motion
This ditty tenders thanks to all it did not come to pass
That R.S.A.R.S - became abbreviated "AARS"
For the spelling though phonetic, invites some well-aimed kicks
And, once adapted fellow hams, unfortunately, it sticks.

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WANTED - By people your Editor met at St. Dunstans. By Stan Heys, 81 Lincoln Avenue, PEACEHAVEN, Sussex (Tel. 3664), a good receiver for general and ham band listening. And by our White Stick Platoon member George, G4AWI, a good brass "Pump Handle" Morse key. One of the older types (brass with fine adjustments preferred). CAN YOU HELP - PLEASE!.

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AND JUST TO FILL THE PAGE…a single page of the May 1955 R.S.G.B. Bulletin recently came to light in the G3DPS shack. Four consecutive items are of interest : Mullard introduced the QQVO3-20A (39 Watts at 200 MHz) and the QQVO6-40A (72 Watts at 200 MHz and 45 Watts at 500 MHz) - H.M.V. introduced "Stereosonic" tapes, 2 tracks on ¼ inch tape giving "three-dimensional" realism - and on May 2nd 1955 the BBC introduced its first Band 2 frequency modulated service from Wrotham, and, lastly, a certain C.R. Emary MBE ZC4XA (now better known as G5GH) offered hospitality to visiting hams in Nicosia. (Remember No. 8 Olympias Avenue, Nicosia, Chas.?).

THE FINAL FINAL.

(Being items which have come to mind or hand whilst 'Mercury' has been at the printers).

Garry, ZC4AU/RSARS 1164, sends along a copy of 'The ZC4 News' which is well produced and gives a lot of information to the ZC4 boys. It appears that they are working in close co-operation with CARS, the Cyprus Amateur Radio Society. The 'News' also reports that they are having problems with a Pirate who likes the call-sign ZC4DB and also likes CW. A paragraph from Tom, ZC4TV helps us by asking the locals if they know of our two ex-ZC4 members (ZC4HS and ZC4IM) that we were enquiring after. The technical side is also catered for and there is an article on a Speech Amplifier and Symmetrical Clipper by Ray ZC4RC. Starting on 9th November was a ZC4 Net, as a trial, on 14,250 KHz at 0800 GMT and moving to '80' around 0815 (no frequency stated), It's on Sundays, by the way. This may be your chance to hook a few of the ZC4 members. The social side is not forgotten and there is a promised 'get-together' with the YLs and XYLs at a hotel in Limassol on 29th November. Garry also sent along a copy of the ZC4 Call-Book which shows the following : ZC4AK RAF Akrotiri Amateur Radio Club, ZC4AU - Garry himself, ZC4CG - Cpl Girvan (RSARS), ZC4DH - Sgt Humphries (RSARS), ZC4EJ - MAEO M. Hudson RAF, ZC4GH - J/T G. Head RAF, ZC4HH - Sgt J.Hobley (RSARS), ZC4LC - Episkopi Garrison Club Station, ZC4RH Cpl R. Hyde RAF, ZC4TV - Mr T.J. Venn (RSARS) and ZC4RC - Mr R.Cumming. Nice to see things ticking over so well, Garry, keep up the good work.

G4BXV, S.P.A. SMITH, of 38 Ramsden Street, Barrow-in-Furness, Cumbria, LA14 2HH is putting a lot of work into trying to gain recognition for the tremendous work put into the R.A.I.B.C. by Frances and (the late) Joe Woolley. G4BXV/RSARS 0591 has written to the R.S.G.B., etc., and now needs support from as many people as possible. To quote the RSGB letter "To sum up, as soon as appropriate support for an application can be assembled, I will be able to make a proposal to Robert Mellish M.P." (The Government Chief Whip - Ed,). Why not write in support to G4BXV or better still collect some signatures on the enclosed form (maybe at your local Club, etc.) and forward to the above address. The many years of hard work put into this venture by the Woolleys without thought of recompense or reward deserves to be recognised. There are many hundreds, perhaps thousands, of RAIBC members and supporters around the world who would be prepared to second appreciation of the efforts of Frances and Joe.

A.R.D. MURRAY, RSARS 1006, writes from 11 Ardross Avenue, Northwood, Middlesex, HA6 3DS to say that he was sorry he missed both Aldershot and Worcester this year but was abroad on business. He also mentions that he recently visited Bill Lewis RSARS 1148 down in Keymer. He says "I have known Bill since 1942 when he acted as mentor to all the young subalterns, including me, straight out of OCTU on posting to the Unit".

I may have mentioned it elsewhere, but G3XWI/RSARS 0642 is looking for anyone who served in 2 Wireless Company at Sarafand. Write to : E. Tredgold Esq., 17 New Windsor Drive, Rothwell, Leeds, Yorkshire.

Robin, G3ZYE/RSARS 0944 recently stood for election to the RSGB council. He thanks all those who nominated him and all those who voted for him. He promised to do his utmost if elected. We wish him luck.

Captain J.H. Capicik, will, by the time you read this, have returned to the States and should be operating as K9CUA in Wisconsin. Bon voyage, OM, and thanks for the Log Periodic article.

REMINDER

ALL ANNUAL MEMBERS ARE REMINDED THAT SUBSCRIPTIONS HAVE BEEN RAISED TO £1 WITH EFFECT FROM 1ST JANUARY 1976. MEMBERS WHO PAY BY BANKERS ORDER ARE REQUESTED TO COMPLETE THE ENCLOSED BANKERS ORDER AND PASS THE TOP HALF TO THEIR BANK AND THE BOTTOM HALF TO THE TREASURER. BANKERS ORDERS SAVE BOTH THE MEMBER AND THE TREASURER A LOT OF TIME. IF YOU ARE AN ANNUAL MEMBER AND DO NOT PAY BY BANKERS ORDER, WHY NOT GIVE IT A TRY AS FROM JANUARY 1ST 1976 - ALL YOU NEED TO DO IS FILL OUT THE FORM AND KEEP AT LEAST A POUND IN YOUR BANK ACCOUNT!

PLEASE DESTROY ALL OLD MEMBERSHIP APPLICATION FORMS - NEW FORMS ARE AVAILABLE FROM HQ AT ANY TIME. THE SAME GOES FOR STORES ORDER FORMS - NOW THAT PRICES HAVE HAD TO BE INCREASED THE OLD FORMS ARE OUT OF DATE AND THEIR USE MAY CAUSE A LOT OF EXTRA WORK. NEW STORES ORDER FORMS ARE AVAILABLE FROM HQ AND A SAMPLE WILL BE ENCLOSED WITH THIS 'MERCURY'.

HEADQUARTERS REGULARLY RECEIVE APPLICATIONS FOR MEMBERSHIP FROM PEOPLE WHOSE MILITARY SERVICE HAS BEEN WITH THE ROYAL AIR FORCE AND THE ROYAL NAVY. IT IS STRESSED AGAIN THAT SUCH SERVICE DOES NOT QUALIFY ONE FOR MEMBERSHIP OF THE ROYAL SIGNALS AMATEUR RADIO SOCIETY AND SUCH APPLICATIONS CAN PRESENT PROBLEMS TO YOUR HEADQUARTERS STAFF IN HAVING TO REJECT THEM AND RETURN MONIES ALREADY MADE OUT TO 'R.S.A.R.S.' THE INTERESTS OF SUCH APPLICANTS IS WELL CATERED FOR BY THE ROYAL NAVAL AMATEUR RADIO SOCIETY AND THE ROYAL AIR FORCE AMATEUR RADIO SOCIETY AND WE CAN ONLY ACCEPT APPLICATIONS FROM PAST OR PRESENT MEMBERS OF THE BRITISH ARMY, (REGULAR, TA, AER AND TAVR), SERVING MEMBERS OF THE ACF/CCF, CIVILIANS WHOLLY AND FULLY EMPLOYED BY A ROYAL SIGNALS UNIT, PAST OR PRESENT MEMBERS OF A COMMONWEALTH ARMY SIGNAL CORPS, PAST OR PRESENT MEMBERS OF A NATO SIGNAL CORPS WHO HAVE BEEN ATTACHED TO, OR WORKED IN CLOSE LIAISON WITH, ROYAL SIGNALS. THE LAST CATEGORY IS SUBECT TO APPROVAL BY THE PRESIDENT AND COUNCIL. THIS SOCIETY IN NO WAY WISHES TO APPEAR 'ELITE' OR 'SNOBBISH' BUT WE DO HAVE APPROVED RULES TO COMPLY WITH, AND WE DO NOT WISH TO TRESPASS ON THE GOOD WORK OF THE OTHER SERVICE AMATEUR RADIO SOCIETIES. COUNCIL BELIEVES THAT MEMBERS WILL UNDERSTAND THE SITUATION AND WILL ASSIST BY ENSURING THAT APPLICATION FORMS ARE ONLY PASSED TO POTENTIAL MEMBERS WHO QUALIFY BY RULE FOR MEMBRSHIP.

THE LATE LATE SHOW.

The following items have come to hand during the printing of "Mercury" and preparation for despatch.

Sincere thanks to all those members who kindly sent Christmas cards and greeting to RSARS HQ, too many to mention here but your kind thoughts were appreciated.

A copy of the 1976 ZC4 Call-book from Gerry, ZC4AU, shows the following ZC4 stations : ZC4AK, ZC4AU, ZC4CG, ZC4DH, ZC4EJ, ZC4GH, ZC4GE, ZC4HH, ZC4LC, ZC4PK, ZC4TV and ZC4RC. The ZC4 boys intend holding a joint RSARS/RAFARS Net every Thursday at 1900 GMT on 3.750 MHz + or -. When the band is open be sure and check the frequency. A WORKED UNITED KINGDOM COUNTIES CONTEST is taking place for the ZC4 stations from 2359 hours GMT Saturday 17th January until 2359 hours GMT Saturday 24th January 1976, All UK amateurs are invited to take part. All you have to do is listen for a ZC4 station, contact him and give YOUR CALL-SIGN, YOUR NAME, HIS REPORT, YOUR QTH AND YOUR COUNTY. A contact made from the home QTH counts additional to a contact made from the same call-sign working /M in the UK. Contacts with Eire also count. Contacts count once per band only. If members wish to send in a check-log, please forward to THE SECRETARY, RAFARS, RAF AKROTIRI, B.F.P.O. 53. Any Band, any mode. Heres a chance to help out the ZC4s.

Congratulations to G8KBX/1122 now G4EPI, G8GKK/0640 now G4EOV and RSARS 0876 who is now G8LDP. RSARS 1149 recently mentioned that he is ZL4GW. John Capicik has now retired from the U.S. Army, dropped the DA1EH call, returned to the States to 538 South Marr Street, Fond du Lac, Wisconsin, 54935 where he hopes to be active as K9CUA. G3WTA is now GM3WTA at M.L Kinnersley-Taylor, Womblehill Cottage, Womblehill Farm, Kintore, Aberdeenshire. G4EJP, Cpl P.R. Sheppard is now at 318 Willems Park, Aldershot, Hants and Barrie Rosewarn, previously listed as 3D6BC in Swaziland is home at 21 Fairfield Road, Wimborne, Dorset, BH21 2AJ. No news as yet of a G-call. A welcome letter from GM3WHS tells of a QSY to Braeside Croft, Insch, Aberdeenshire and a hope, to get active again in the near future. G8LDP (see above) is now at 12 Green Lane, Bevere, Worcester, WR3 7QG and G3YBP has moved to 4 Brickhouse Hill, Tiverton, Devon, Gary Thomas has been on the move in New Zealand and his new address (via ZL1AXM and GW3ASW) is 13 Morrison Drive, Hobsonville, New Zealand. A change of call-sign will probably be forthcoming. We welcome back (with the same number 0728) R.P. Snow, still at 22 Thoresby Street, Princess Avenue, Hull N., Yorkshire, HU5 3RD. In case we have misled anyone, G2AIH, N.G. Hyde, lives at 114 (NOT 14) Tattenham Grove, Epsom Downs, Surrey.

HEADQUARTERS REGRET HAVING TO INFORM OF TWO MORE SILENT-KEY MEMBERS. 0897, GW2RV, Stan Higson of Lixwm and G8SG, R. Lyall of Cornhill-on-Tweed. Our deepest sympathies are extended to relatives and friends of these two Silent Keys.

G3YBP reports having been QRT for four years but hopes to be active again very soon. Fred Barnes, WA8PCT/RSARS 0234 seeks members help in finding a book he has read about dealing with the BRUNEVAL RAID. Fred was in charge of instruments repairs for the raid and seeks details of any books on the subject, please write to : 3300 TAMPA AVENUE, CLEVELAND, OHIO, 44109, U.S.A. ALL MEMBERS - PLEASE NOTE. WESTERN ELECTRONICS NO LONGER CONSIDER R.S.A.R.S. FOR DISCOUNT ON THEIR SUPPLIES. BILL BEVAN, G3DBU/RSARS 0130 HAS A "EUROPA" AND SPARE 6/40 FOR SALE AS HE HAS NOW BEEN COMPLETELY BITTEN BY THE QRP BUG. ASKING PRICE IS £50. Write to W.T.E. BEVAN, 10 HILLTOP CRESCENT, HARROGATE, HG1 3BZ. John Pover, RSARS 0985 is now at 63 Langton Road, Falmouth, Cornwall. Barrie Jenkins, G4CZJ, is now in Belize (VP1), hopes to get a ticket and will be looking for members, particularly G3WMZ and G3ALI on 80 CW after 2359 hours daily. A HAPPY NEW YEAR FROM ALL AT HEADQUARTERS.

MORE OF THE LATE, LATE SHOW.

DONATIONS - Looking back through the book for 1975 it is very pleasing to see the large number of donations, both great and small, received from members These have included the following : DA2WN DA2XF G2DX G2KI G2PT G2ZA G2AIH G2ACK G3CAA G3EFY G3HCM G3KBN G3LBT G3MYX G3NXM G3NZY G3VA G3VAN G3WKM G3XWI G3YSD G3ZEE G3ZFN G3ZMT G3ZYE G4ATD G4AXS G4BKQ G4BWV G4CAG G4CVM G4DES G4DIO G4DVH G4DZV G4GS G4PX G6RC G8AQT G8BLI G8EFJ G8GDD G8HDR G8KYG GC4BSL GC5TU GD4BEG GI2DZG GI3KVD GI5DX GI8KYB GM3KNX GM3LWS GM3TBP GM3WTA GM4CKP GM4ELV GW3CVY GW3DIX GW3RGE GW3XHJ VK2AND VK3CCC VK4IV VK6ZCU WB6JXC WA8PCT ZC4HH ZL2ACE ZL2BFB 9H1BX 0310 0318 0349 0739 0774 0958 1075 1149. If we have missed anyone, our apologies. Your FB efforts are very much appreciated.

SUBSCRIPTIONS - Many thanks to those members who have already forwarded their 1976 subscription, As noted elsewhere, subscriptions have had to rise. Would members who have forwarded 50p please note and forward the balance at their convenience, preferably before 30 June 1976.

Albert Cash, having now completed his DX QSY to Shoalwater Bay in VK6, recently had a visit from Allan Gibbs, VK6PG/Ex G3PHG, Allan wishes to pass along his best wishes for 1976 to all RSARS members that he might have known in the past.

A letter from RSARS 0159, Charles Collins-Hooper, of "Conewood", 63 Sandy Lane, St. Ives, Ringwood, Hants, BH24 2LE, encloses 1976 subs and gives a brief run-down on his past history. Charles mentions that he was a Signalman in Peshawar in the days when Major W.M. Miller was OC. This was circa 1930, and he wonders if any other members are of this vintage. He still has some photos of the Radio Station at Peshawar District Signals around that time. Charles hopes to take RAE in the not too distant future and we wish him well. (If you are better at remembering numbers than names, try 2317490 that was Charles, who spent 29 years with Royal, Signals in the Service followed by another 11 years working for them, a total of 40 years, which will probably take a bit of beating!!).

CONGRATULATIONS to Jim Trotter whom we have listed as 'NL' but who mentions when sending along his subs, that he is now G8KKM. His brother is G4ATD.

ACTIVITY FROM GD-Land has been boosted by RSARS 0709, Simon J. Brown, of Riverside, Glen Auldyn, Ramsey, Isle of Man, who was GD8IQM and is now GD4ELI. Simon runs an ex-Army WS52 (813 PA) and an Eddystone EA12 and is active on 160, 80 and 20 Metres. For those who have already QSO'd him, a card will soon be on its way - Simon has just ordered 1,500!!.

NEW ZEALAND should soon have another RSARS representative in the shape of M. Cunningham, ZL1BMW (this may have read ZL1BMH on some lists sorry OM!). Previously G4CUC he is now in temporary accommodation awaiting the completion of a new house which will be at York Road, (number not yet known), Paihia, Bay of Islands, NZ. With an order in for Log Books and QSL Cards we hope to be hearing him very shortly. Guess you might be looking up RSARS 0673, ZL1AUI, whose address is P.O. BOX 3 in Paihia.

THE STORES SITUATION. Apologies to those members, who have had to wait for Stores, particularly Ties, Lapel Badges and Great Circle Bearing Charts. Badges arid Ties have now been received and it is hoped to clear the back-log. Delay has partly been due to the Gen. Sec. having been away from Blandford for a while in December. Incidentally, a new General Secretary has not yet been appointed, and, although my "contract" ended on January 1st 1976, an endeavour will be made to keep the wheels of the Society turning. My sincere thanks to all those who have made life so interesting during my two tours of office. 73.

NEW - NEW - NEW - NEW - NEW - NEW - NEW - NEW - NEW - NEW - NEW - NEW - NEW

THE ROYAL SIGNALS AMATEUR RADIO SOCIETY'S NEW MOBILE LOG BOOK

SIZE 5" X 4" - HANDY FOR POCKET OR GLOVE COMPARTMENT. FRONT COVER SHOWS 'JIMMY' AND SPACE FOR LOG BOOK NUMBER, CALL-SIGN, AND RETURN ADDRESS IN THE EVERT OF THE BOOK BEING MISLAID. THE INSIDE FRONT COVER GIVES DETAILS OF MOBILE OPERATION LOG-KEEPING REQUIREMENTS. EACH PAGE HAS ROOM FOR EIGHT ENTRIES AND HAS SPACES FOR "DATE", "TIME", "JOURNEY/LOCATION", "BANDS USED", INITIALS, AND A "QSL" COLUMN. THERE ARE 40 LOGGING PAGES GIVING OVER 300 ENTRIES PER BOOK. LEFT-HAND PAGES ARE LEFT BLANK FOR JOTTING DOWN DETAILS SUCH AS NAMES, QSO DETAILS AND QSL INFORMATION, ETC. THE INSIDE BACK PAGE SHOWS A SAMPLE COMLETED PAGE.

THIS LOG-BOOK COMPLIES WITH ALL THE HOME OFFICE REGULATIONS REGARDING MOBILE STATION LOG KEEPING.

PRICES :

1 BOOK - 40p plus 7p part Post and packing = 47p
2 BOOKS - 79p plus 9p part Post and packing = 88p

THESE LOG-BOOKS ARE AVAILABLE TO ALL. WHY NOT MENTION THEM AT YOUR LOCAL CLUB - RSARS CAN CERTAINLY USE THE SALE OF THESE BOOKS TO BOOST THE TREASURY!!.

SPECIAL OPENING OFFER
SELL TEN TO YOUR FRIENDS - GET ONE FREE

.....Cut Here.....

ORDER FORM

TO : R.S.A.R.S. HEADQUARTERS,
SCHOOL OF SIGNALS,
BLANDFORD CAMP,
BLANDFORD FORUM,
DORSET,
DT11 8RH.

FROM: _____
_____
_____

PLEASE SUPPLY :

1 RSARS MOBILE LOG BOOK @ 47p ☐ (Tick)
2 RSARS MOBILE LOG BOOKS @ 88p ☐ (Tick)
SPECIAL OFFER 10 MOBILE LOG BOOKS @ 42p EACH - TOTAL £4 - 20p ☐
(I UNDERSTAND THAT YOU WILL INCLUDE 1 FREE LOG BOOK WITH EACH ORDER FOR 10 BOOKS).

I enclose Cheque/Postal Order/Money Order/Cash to the value of £____

Date _____ Signature _____

IMPORTANT NOTICE.

On the advice of our Auditors, it is regretted that, with effect from 1st January 1976, IN-ADVANCE SUSCRIPTIONS CAN NO LONGER BE ACCEPTED OTHER THAN FOR THE CURRENT OR FOLLOWING YEAR. This is in view of rising costs and the effects of inflation.

Although it is appreciated that payment in advance is often convenient to members. In-advance subscriptions for 1976 alone, paid at the old rate of 50p, means that the Society is out-of-pocket to the tune of over £70, and, if such subscriptions as far forward as 1979 are considered, this figure is probably well in excess of £100.

Subscriptions received prior to 1st September 1975 (the effective start of the 1976 subscription year and the approximate date of the Councils decision to raise subscriptions) will be accepted at the old rate. Members joining/submitting since that date will remain in compliance but are requested to forward the balance as soon as possible.

A check of the Secretary's books since 1st September 1975 up to and including 7 January 1976 shows the following :

(Where possible subscriptions have been adjusted to provide full subs for 1976 and onwards where applicable) :

PAID £1 FOR 1976 AND 50p FOR 1977 - 1168

PAID 50p FOR 1976 (50p DUE) - 0062 - 0065 - 0209 - 0220 - 0231 - 0294 - 0448 - 0543 - 0593 - 0728 - 0769 - 0800 - 0820 - 0836 - 0927 - 0970 - 0974 - 0985 - 0986 - 1021 - 1025 - 1045 - 1047 - 1055 - 1057 - 1062 - 1077 - 1103 - 1136 - 1149 - 1154 - 1155 - 1156 - 1157 - 1158 - 1159 - 1160 - 1161 - 1162 - 1163 - 1164 - 1166 - 1167 - 1169 - 1171 - 1172 - 1174 - 1175 - 1177.

PAID £1 FOR 1976 (No subs outstanding) - 0159 - 0488 - 0539 - 0683 - 0889 - 0892 - 0951 - 0991 - 1058 - 1170 - 1173.

WHY NOT MAKE USE OF THE BANKERS ORDER FORM ENCLOSED WITH THIS "MERCURY"????????????

……...

REPLACES ALL PREVIOUS STANDING ORDERS IN FAVOUR OF THE ROYAL SIGNALS AMATER RADIO SOCIETY

STANDING ORDER

TO : ____________________ Bank Ltd/GIRO. Date ____ /___ /___

____________________ Branch.

Please make payment, and debit to my Account No. : ____________________
in accordance with the following details. (I understand that charges at the rate of TEN PENCE will be deducted from my Account xx).

TO	:	MIDLAND BANK LIMITED.
BRANCH	:	BLANDFORD FORUM, DORSET.
CODE NUMBER	:	40-12-18.
FOR ACCOUNT OF	:	THE ROYAL SIGNALS AMATEUR RADIO SOCIETY
ACCOUNT NUMBER	:	00713309.
REFERENCE NUMBER	:	______ (Insert your R.S.A.R.S. Number here).
AMOUNT	:	£1. 00p (ONE POUND STERLING)
DATE PAYABLE	:	2nd JANUARY ANNUALLY.
FIRST PAYMENT	:	2nd JANUARY 19___.
LAST PAYMWNT	:	UNTIL FURTHER NOTICE.

IT IS IMPORTANT THAT THE REFERENCE NUMBER IS QUOTED WHEN PAYMENTS ARE MADE

____________________ (Signed)

NAME (IN BLOCK LETTERS) ____________________

..............................Cut here.........................Cut here.........................Cut here.........................

TO : TREASURER
ROYAL SIGNALS AMATEUR RADIO SOCIETY
SCHOOL OF SIGNALS BLANDFORD CAMP
BLANDFORD FORUM
DORSET DT11 8RH

FROM : ____________________ CALL-SIGN __________ RSARS No. __________

My R.S.A.R.S. membership subscription will be paid, with effect from 2nd January 19___, by Standing Order on:

____________________ Bank Ltd/GIRO

____________________ Branch

______________ Signed Date ___ /___ /___

Notes 1. (xx) Please delete if NOT using the Post Office Savings Bank.

2. Please detach lower half and forward to The Treasurer. The top half should be completed and passed to your Bank.

RSARS/SO/3 6/74.

WE, THE UNDERSIGNED, Being mindful of the extensive work carried. out by Mrs Frances Woolley and the late Mr Joseph Woolley on behalf of the Sick, Blind and Disabled members of the community in the organisation of the Radio Amateur Invalid and Bedfast Club,

AND, Being aware that many efficient organisations exist for the care of the Sick, Blind and Disabled but few, if any, apart from the Radio Amateur Invalid and Bedfast Club, cater for the encouragement, training, equipping and continued guidance of such persons in the international hobby of Amateur Radio, thus allowing such disabled and blind persons to converse with persons world-wide,

AND, that the R.A.I.B.C. came about largely by the efforts of Mr and Mrs Woolley who worked for a number of years without thought of reward or recompense,

FEEL that official recognition should be given to acknowledge such unselfish efforts, and, to request that such action be taken, do duly append our signatures here.

Signature	Call-sign etc.	Signature	Call-sign etc.	Signature	Call-sign etc.

ROYAL SIGNALS AMATEUR RADIO SOCIETY.
STORES ORDER FORM.

FROM: (Init.) _____ Surname _____

Call-sign _____ RSARS No. _____ Date _____

Address _____

_____

_____

_____ Postal Code _____

Please supply the following RSARS Stores (PPP = Part Post & Packing):

Qty	Item	Price £	Price p	PPP £	PPP p	Cost £	Cost p	Save! £	Save! p	Total £	Total p	Note (PTO)
100	Sheets of Headed Notepaper	-	55	-	5	-	60	Nil				
500	Sheets of Headed Notepaper	2	50	-	25	2	75		25			
1000	Sheets of Headed Notepaper	4	70	-	45	5	15		85			
100	Basic QSL Cards	-	70	-	5	-	75	Nil				
500	Basic QSL Cards	2	20	-	30	2	50	1	25			
1000	Basic QSL Cards	4	20	-	60	4	80	2	70			
500	Overprinted QSL Cards	3	60	-	40	4	00		Nil			See a)
1000	Overprinted QSL Cards	6	90	-	60	7	50		50			See a)
____	Plain Lapel Badge(s)	-	30	-	5	-	35	-----				
____	Call-sign Lapel Badge(s)	-	45	-	5	-	50	-----				See b)
____	RSARS Ties	1	60	-	10	1	70	-----				
1	RSARS Log Book	-	30	-	5	-	35	Nil				
2	RSARS Log Books	-	50	-	10	-	60		10			
3	RSARS Log Books	-	70	-	10	-	80		25			
4	RSARS Log Books	-	90	-	10	1	00		40			
1	RSARS Plastic Ball Pen	-	6	-	3	-	9	Nil				
5	RSARS Plastic Ball Pens	-	22	-	5	-	27		18			
10	RSARS Plastic Ball Pens	-	40	-	7	-	47		43			
15	RSARS Plastic Ball Pens	-	55	-	10	-	65		70			
1	RSARS Retractable Ball Pen	-	15	-	5	-	20	Nil				
2	RSARS Retractable Ball Pens	-	25	-	5	-	30		10			
3	RSARS Retractable Ball Pens	-	37	-	10	-	47		13			
4	RSARS Retractable Ball Pens	-	48	-	10	-	58		22			
1	Standard Dymo Badge	-	15	-	5	-	20	Nil				See c)
2	Standard Dymo Badges	-	26	-	5	-	31		9			See c)
3	Standard Dymo Badges	-	37	-	10	-	47		13			See c)
4	Standard Dymo Badges	-	48	-	10	-	58		22			See c)
1	RSARS Dymo Badge	-	18	-	5	-	23	Nil				See d)
2	RSARS Dymo Badges	-	34	-	5	-	39		4			See d)
1	RSARS Windscreen Sticker	-	26	-	5	-	31	Nil				
2	RSARS Windscreen Stickers	-	48	-	5	-	53		11			
1	RSARS Key Fob	-	15	-	5	-	20	Nil				
2	RSARS Key Fobs	-	28	-	5	-	33		7			
1	Great Circle Bearing/Distance Chart	1	40	-	10	1	50	-----				See e)
100	RSARS Index Cards	-	70	-	10	-	80	Nil				
250	RSARS Index Cards	1	60	-	15	1	75		25			
500	RSARS Index Cards	3	10	-	20	3	30		70			
1000	RSARS Index Cards	6	00	-	40	6	40	1	60			
1	144/146 MHz Divide & Print Chart	-	40	-	10	-	50	Nil				
2	144/146 MHz Divide & Print Chart	-	70	-	15	-	85		15			
___	'Q' & 'Z' Code List	----------				Free						(Tick)
___	Awards and Contests Rules	----------				Free						(Tick)
___	Membership Call-sign List	----------				Free						(Tick)
								Total				

NOTE a) : Overprinted QSL Cards. Normal overprint consists of: RSARS No., Call-Sign (or RRS No., ISWL No. etc.), Name and Address. Some special blocks are held (RSGB, RAOTA emblems, etc.) and there is no extra charge for their use. Any additional overprint will be subject to agreement and possible extra cost. The printer reserves the right to adjust layout to conform to good printing practice without changing detail. Overprint colours available: RED, GREEN, BLUE & BLACK. Where no colour is specified on order, overprinting will be carried out in RED. Cards are ordered through RSARS HQ and despatched direct to member by the Printer on completion. Please complete the following boxes IN BLOCK LETTERS to prevent printing errors.

RSARS NUMBER ☐☐☐☐ Call-sign ☐☐☐☐☐☐

NAME ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

ADDRESS ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐ Postal Code ☐☐☐☐ ☐☐☐

Colour ☐☐☐☐☐ Quantity ☐☐☐☐ Other details :

NOTE b): Call-sign Lapel Badges. Badges can be engraved with 6 figures/letters. This may be your call-sign, RSARS No., etc.

PLEASE ENGRAVE MY BADGE ☐☐☐☐☐☐

NOTE c) : Standard Dymo Badges. These are double-row, pin fixing, white plastic badges. Each row will accept printed tape with a maximum of 16 letters/figures/spaces. Tape colours :RED, BLUE, BLACK, GREEN, PURPLE, YELLOW, etc., or, if available, any colour in the Dymo range. All letters, etc., stand out in WHITE. Where no colour is stated on order, badges will be prepared using BLACK tape.

Badge No. 1.

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

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Badge No. 2.

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Badge No. 3.

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Badge No. 4.

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NOTE d) : RSARS Dymo Badges. These are similar to the standard Dymo badge, but have provision for one ½" tape of a maximum of 16 letters/figures/spaces at the bottom of the badge. The top half of the badge is engraved with the RSARS diamond and the words "ROYAL SIGNALS AMATEUR RADIO SOCIETY" in black. Tape colours as above.

Badge No. 1.

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Badge No. 2.

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NOTE e). Great Circle Bearing and Distance Chart. These are computer produced for each individual QTH. All that is required is your location in Latitude and Longitude (NOT MAP REFERENCES). The database is constantly being added to and the Society reserves the right to forward the latest edition. Over 2,000 locations are at present listed and the Chart lists Town names, Country, Latitude and Longitude, Distance in Statute Miles, Nautical Miles and Kilometres. Bearings TO and FROM are also given. PLEASE PRODUCE MY CHART FOR :

LATITUDE ☐☐ Degrees ☐☐ Minutes NORTH/SOUTH)

LONGITUDE ☐☐☐ Degrees ☐☐ Minutes EAST/WEST) Please delete as necessary.

I ENCLOSE CHEQUE/POSTAL ORDER/MONEY ORDER/CASH TO COVER TOTAL AMOUNT (CHEQUES AND ORDERS CROSSED AND MADE PAYABLE TO "ROYAL SIGNALS AMATEUR RADIO SOCIETY AND CASH REGISTERED, PLEASE)

Date __/_____/____ Signature._____

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

LF 'PHONE.

MONDAY	1100 GMT	3.650 MHz	+ or –	PHONE	RSARS FAR EAST NET
MONDAY	1315 GMT	3.720 MHz	+ or –	PHONE	EUROPEAN NATTER NET
TUESDAY	1315 GMT	3.720 MHz	+ or –	PHONE	EUROPEAN NATTER NET
TUESDAY	1900 GMT	3.720 MHz	+ or –	PHONE	EUROPEAN CONTROLLED NET
WEDNESDAY	1100 GMT	3.650 MHz	+ or –	PHONE	RSARS FAR EAST NET
WEDNESDAY	1315 GMT	3.720 MHz	+ or –	PHONE	EUROPEAN NATTER NET
THURSDAY	1315 GMT	3.720 MHz	+ or –	PHONE	EUROPEAN NATTER NET
THURSDAY	1900 GMT	3.720 MHz	+ or –	PHONE	EUROPEAN CONTROLLED NET
FRIDAY	1315 GMT	3.720 MHz	+ or –	PHONE	EUROPEAN NATTER NET
SATURDAY	1030 GMT	7.075 MHz	+ or –	PHONE	EUROPEAN NATTER NET
SUNDAY	1030 GMT	3.720 MHz	+ or –	PHONE	EUROPEAN NATTER NET

HF 'PHONE.

TUESDAY	0100 GMT	14.275 MHz	+ or –	PHONE	RSARS WESTERN HEMISPHERE NET
TUESDAY	1100 GMT	14.175 MHz	+ or –	PHONE	RSARS FAR EAST NET
WEDNESDAY	1300 GMT	14.275 MHz	+ or –	PHONE	RSARS WORLD-WIDE NET
THURSDAY	0100 GMT	14.275 MHz	+ or –	PHONE	RSARS WESTERN HEMISPHERE NET
THURSDAY	0800 GMT	14.175 MHz	+ or –	PHONE	RSARS FAR EAST NET
SATURDAY	0100 GMT	14.275 MHz	+ or –	PHONE	RSARS WESTERN HEMISPHERE NET
SATURDAY	0800 GMT	14.175 MHz	+ or –	PHONE	RSARS FAR EAST NET
SUNDAY	0100 GMT	14.275 MHz	+ or –	PHONE	RSARS WESTERN HEMISPHERE NET
SUNDAY	0800 GMT	14.275 MHz	+ or –	PHONE	RSARS FAR EAST NET

OTHER HF 'PHONE FREQUENCIES.

21.375 MHz + or –, 28.575 MHz + or –. (Dependent upon bands). Call "CQ RSARS" on the hour and half-hour.

VHF 'PHONE.

TUESDAY	1900 GMT	70.22 MHz	PHONE	RSARS NATTER NET
MONDAY	1900 GMT	145.33 MHz	PHONE	RSARS NATTER NET
FRIDAY	1900 GMT	144.33 MHz	PHONE	RSARS NATTER NET

LF CW.

WEDNESDAY	1900 GMT	3.575 MHz	+ or –	CW	EUROPEAN CONTROLLED NET
SUNDAY	1030 GMT	3.575 MHz	+ or –	CW	EUROPEAN NATTER NET

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

HF CW.

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

VHF CW.

SATURDAY	1900 GMT	145.33 MHz.	+ or –	CW	RSARS NATTER NET
SUNDAY	1500 GMT	144.025 MHz.	+ or –	CW	RSARS NATTER NET

LF RTTY.

SUNDAY 0900 GMT 3.590MHz/QSY RTTY NATTER NET 170Hz Shift and 45.5 Bauds if possible.

HF RTTY.

SATURDAY	1600 GMT	14.090MHz/QSY	RTTY NATTER NET 170Hz Shift and 45.5 Bauds if possible.
SUNDAY	1600 GMT	14.090MHz/QSY	RTTY NATTER NET 170Hz Shift and 45.5 Bauds if possible.

OVERSEAS MEMBERS ARE ENCOURAGED TO ORGANISE LOCAL OVERSEAS NETS TO SUIT LOCAL CONDITIONS/TIMES/BANDS ETC., AND U.S.A. MEMBERS ARE INVITED TO ARRANGE A 6 METRE NET. ALL DETAILS OF LOCAL NETS/TIMES ETC., TO RSARS HQ PLEASE FOR LISTING IN "MERCURY".

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 THE INITIALS '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 - FILL THE NEAREST CLEAR FREQ. AND CALL "CQ RSARS". ALWAYS BOOK IN AND OUT OF RSARS NETS. PASS ALL DETAILS UNASSISTED.