AUGUST, 1963

RSGB BULLETIN

VOL. 39, No. 2

JOURNAL OF THE RADIO SOCIETY OF GREAT BRITAIN

Volume 39 No. 2
August 1963
3/- Monthly

R.S.G.B. BULLETIN

CONTENTS

EDITOR:
John A. Rouse, G2AHL

EDITORIAL OFFICE:
R.S.G.B. Headquarters, 28 Little Russell Street, London, W.C.1.
Telephones: HOLborn 7373 HOLborn 2444

ADVERTISEMENT MANAGERS:
Sawell & Sons Ltd., Ludgate Circus, London, E.C.4
Telephone: FLEet Street 4353

The RSGB Bulletin is published on the first Wednesday in each month by the Radio Society of Great Britain as its official journal and sent to all members.

Radio Society of Great Britain

(Incorporated 1926)

PATRON

H.R.H. THE PRINCE PHILIP, DUKE OF EDINBURGH, K.G.

COUNCIL 1963

President

N. CAWS, F.C.A., G3BVG

Immediate Past President

E. G. INGRAM, GM6IZ

Penultimate Past President

Major-General E. S. COLE, C.B., C.B.E., G2EC

Executive Vice-President

G. M. C. STONE, A.M.I.E.E., A.M.Brit.I.R.E., G3FZL

Ordinary Elected Members

J. C. GRAHAM, G3TR — R. C. HILLS, B.Sc.(Eng.)., A.M.I.E.E., A.M.Brit.I.R.E., G3HRH

J. DOUGLAS KAY, G3AAE — A. O. MILNE, G2MI — L. E. NEWNHAM, B.Sc., G6NZ

R. F. STEVENS, G2BVN — J. W. SWINNERTON, T.D., B.Sc.(Econ.)(Hons.), A.I.L., G2YS

Zonal Representatives

H. A. BARTLETT, G5QA — L. N. GOLDSBROUGH, B.Sc., M.A.(Oxon), G3ERB — F. K. PARKER, G3FUR

A. D. PATTERSON, B.A.Sc., GI3KYP — A. C. WILLIAMS, GW5VX — E. W. YEOMANSON, G3IIR

General Secretary

JOHN CLARRICOATS, O.B.E., G6CL

Editor

JOHN A. ROUSE, G2AHL

Assistant Secretary

MAY GADSDEN

REGIONAL REPRESENTATIVES

Region 1.—North Western. B. O'Brien (G2AMV), 1 Waterpark Road, Prenton, Birkenhead, Cheshire.

Region 2.—North Eastern. J. R. Petty (G4JW), 580 Redmires Road, Sheffield 10, Yorkshire.

Region 3.—West Midlands. W. A. Higgins (G8GF), 33 Cedars Avenue, Kingswinford, Brierley Hill, Staffs.

Region 4.—East Midlands. F. C. Ward (G2CVV), 5 Uplands Avenue, Littleover, Derby.

Region 5.—Eastern. S. J. Granfield (G5BQ), St. Luke's, 47 Warren Road, Cambridge.

Region 6.—South Central. L. W. Lewis (G8ML), 34 Cleevelands Avenue, Cheltenham, Gloucestershire.

Region 7.—London. P. A. Thorogood (G4KD), 35 Gibbs Green, Edgware, Middlesex.

Region 8.—South Eastern. Norman D. Mattock (G2DFG), 70 Bouverie Road West, Folkestone, Kent.

Region 9.—South Western. R. E. Griffin (G5UH), 13 Alexandra Road, Uplands, Bristol 3.

Region 10.—South Wales. C. H. Parsons (GW8NP), 90 Maesycoed Road, Heath, Cardiff, Glam.

Region 11.—North Wales. Robert Jones (GW3JI), Beirut, Albert Drive, Deganwy, Caernarvonshire.

Region 12.—Office vacant.

Region 13.—South-East Scotland. G. P. Millar (GM3UM), 8 Plewlands Gardens, Edinburgh 10.

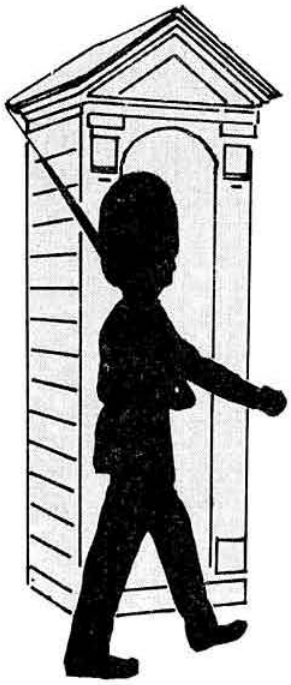
Region 14.—West Scotland. D. W. R. Macadie (GM6MD), 154 Kingsacre Road, Glasgow, S.4.

Region 15.—Northern Ireland. J. William Douglas (GI3IWD), 21 Wellington Gardens, Bangor, Co. Down.

Region 16.—East Anglia. P. J. Naish (G3EIX), 6 Mildmays, Danbury, Chelmsford, Essex.

Region 17.—Southern. M. P. Nicholson (G2MN), 80 South Leigh Road, Warblington, Havant, Hants.

The annual subscription rates to the RSGB are as follows: Corporate Members, Home and Overseas—35/- ($5 US or Canadian). Associate Members under 21 years of age—15/-. Application forms may be obtained from Headquarters on request.



Dependable as The Guards!

Mosley Commando II

■ SINGLE SIDE BAND TRANSMITTER ■

BRITISH PATENTS NOS. 906,636 906,637

- ▷ *180 Watts P. E.P.*
- ▷ *AM / SSB / CW Modes.*
- ▷ *Lattice Filter Exciter.*
- ▷ *Pi Tank Output Circuit.*
- ▷ *Vox and Manual Operation.*
- ▷ *80 thru 10 Metre Bandswitching.*
- ▷ *Full Vision Eddystone Dial.*
- ▷ *Ideal for RTTY by Tone Injection.*
- ▷ *Selectable Upper and Lower Sideband.*
- ▷ *Three Change-Over Contacts for External Switching Functions.*
- ▷ *Adequate Output to Drive the Beefiest QRO Linear.*

COMMANDO II incorporates many features which makes it *The Outstanding Transmitter Buy Today!* Only reliable "air-tested" circuitry is used. Power Supply is the latest cool-running Silicon Rectifier, fuse protected and conservatively rated. Power Amplifier employs two 6146 Tetrodes operating at 750 Volts Class AB_1 Linear Amplifier Service to give maximum I.C.A.S. rating at 180 watts P.E.P. The Pi Tank circuit bandswitching 80 thru 10 Metres gives efficient loading into low impedance coaxial lines. Sideband generation at 435 kcs. with half-lattice crystal filter for 45 db. sideband/carrier rejection. Sideband switch in "normal" position is correct for band in use, but, an "inversion" switch gives choice of alternative sideband.

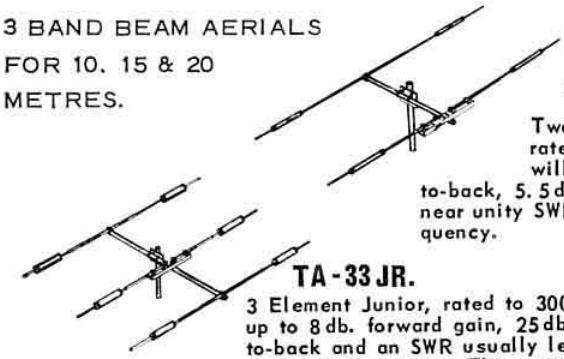
£140. 0. 0d.

It's MOSLEY AERIALS···

···For The BEST DX!

Hams, throughout the world, know that an outstanding signal depends, primarily, on the best aerial. When completing your dream station, install an aerial known the world over for it's performance and craftsmanship. Mosley aerials are unequaled and consistantly, give the frequency commanding signal necessary for top-notch, two way communications. Whether you work Local or DX, Insist On The Best, Rely On Mosley.

3 BAND BEAM AERIALS FOR 10. 15 & 20 METRES.



TA-32JR.

Two Element Junior, rated to 300 watts, will give 20db. front-to-back, 5. 5db. forward gain & near unity SWR at resonant frequency. £17.10. 0d.

TA-33JR.

3 Element Junior, rated to 300 watts, will give up to 8db. forward gain, 25db. or better, front-to-back and an SWR usually less than 1. 5 / 1 at resonant frequency. This aerial will give your signal real authority. £24.15. 0d.

Mosley Electronics Ltd.

15 Reepham Road ● Norwich, Norfolk

Telephone 45069

Cable: Antennas, Norwich.

A Subsidiary of

MOSLEY Electronics, Inc.

Bridgeton, Missouri, U. S. A.

Current Comment

discusses topics of the day

The Exhibition

EARLY on the morning of October 30, the doors of the Seymour Hall in London will open on the 1963 RSGB International Radio Communications Exhibition. This year the emphasis will be, quite naturally, on the Society's Golden Jubilee, and the theme of the exhibition will be the changes in equipment and practices of Amateur Radio over the years.

Probably few of the people who come through the doors will give much thought to the organization behind the Exhibition. On the other hand, a good many of them (especially the non-members) will gain an impression of the RSGB from what they see.

For some years now, the Society's Exhibition Committee has been concerned with the many problems of presenting the activities of the RSGB to the membership and the public. The change of venue to the Seymour Hall last year met with general approval, but many members felt that this move alone was still not enough, and that the presentation of the Society's stand and the Exhibition station left something to be desired. This year, the RSGB stand will be in a much more prominent position; and it is hoped that the membership will agree that the Council and the Exhibition Committee have interpreted their wishes correctly. But a stand, however well placed, can only act as a framework for a display, and the display *must* represent the activities of the Society, especially in this Golden Jubilee year.

Consider how *you* can help the Society to put on a show that will not be easily forgotten. The Exhibition Committee needs equipment for display, helpers for the RSGB stands, and last but not least, support from the membership.

More details will be found elsewhere in this issue; why not make plans now to support the Exhibition?

R. G. B. V.

Progress

LOOKING back is not one of our favourite occupations but just recently we have been doing a little. As an occasional exercise it can be rather illuminating, particularly at the time of a Golden Jubilee. For example, last month, the BULLETIN surveyed the growth of Amateur Radio in this country and the part played by this Society. No one, we feel, could read *Fifty Years for the Advancement of Amateur Radio* without an added feeling of pride in being a radio amateur and in particular in being a member of RSGB. Comments which have reached us indicate that the reactions of members confirm this view, even amongst those least given to any harking back.

This month the BULLETIN places on record in word and picture the Celebrations which took place in London last month to mark the successful completion of 50 years of continuous progress. The report is not, as so often is the case, for those who were there but for the benefit of those who were unlucky enough not to be.

It is with particular pride that we also publish this month the many messages of congratulation and good will received from sister societies, friends and members throughout the world. To see our Society through the eyes of others is to get some insight into the esteem with which RSGB and British radio amateurs are held in other countries. It helps us to understand what Lord Brabazon had in mind at the Golden Jubilee Dinner when he referred to the RSGB as " this great society."

Next month, the BULLETIN will return to the business of reflecting the many contemporary faces of Amateur Radio in all their variety.

J. A. R.

Retirement of the General Secretary

On December 31 this year our General Secretary, Mr. John Clarricoats, O.B.E., G6CL, retires after over 30 years' service with the Society. It is a great tribute to him that we are a thriving and vigorous Society today, for if it had not been for his foresight and enthusiasm, we should in all probability have ceased to exist during the war years.

I believe that many members would like to contribute towards a presentation to be made to him on his retirement. This is of course over and above the pension arrangements already made by the Council. If you wish to make a donation please send it to Mr. A. O. Milne, G2MI, who has agreed to act as a treasurer for this presentation, at 29 Kechill Gardens, Hayes, Bromley, Kent, marking the outside of the envelope " G.S. Presentation."

Norman Caws, G3BVG,
President

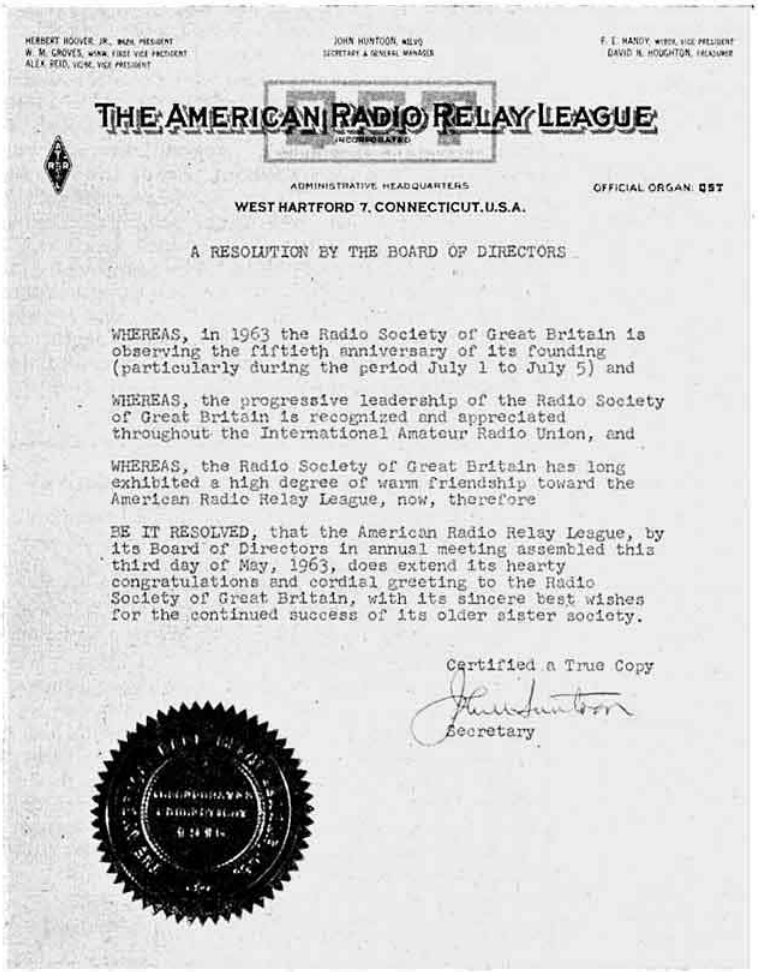
GOLDEN JUBILEE MESSAGES

On the occasion of the Society's Golden Jubilee on July 5, 1963, messages of congratulation were received from many parts of the world.

From the International Amateur Radio Union

On behalf of the International Amateur Radio Union it is my privilege to extend congratulations and all best wishes to the Radio Society of Great Britain on the occasion of your Golden Jubilee Celebration. The RSGB has maintained a consistently high standard of leadership in Amateur Radio affairs in the half century of its lifetime and I am confident it will continue in this role far into the future.

Herbert Hoover, Jnr. W6ZH
President



HERBERT HOOVER, JR., WA2L, PRESIDENT
W. M. GROVES, W9WM, FIRST VICE PRESIDENT
ALEX. REID, VE2RE, VICE PRESIDENT

JOHN HUNTOON, W1LVQ
SECRETARY & GENERAL MANAGER

F. E. HANDY, W1BDI, VICE PRESIDENT
DAVID H. HOUGHTON, TREASURER

THE AMERICAN RADIO RELAY LEAGUE
INCORPORATED

ADMINISTRATIVE HEADQUARTERS
WEST HARTFORD 7, CONNECTICUT, U.S.A.

OFFICIAL ORGAN: QST

A RESOLUTION BY THE BOARD OF DIRECTORS

WHEREAS, in 1963 the Radio Society of Great Britain is observing the fiftieth anniversary of its founding (particularly during the period July 1 to July 5) and

WHEREAS, the progressive leadership of the Radio Society of Great Britain is recognized and appreciated throughout the International Amateur Radio Union, and

WHEREAS, the Radio Society of Great Britain has long exhibited a high degree of warm friendship toward the American Radio Relay League, now, therefore

BE IT RESOLVED, that the American Radio Relay League, by its Board of Directors in annual meeting assembled this third day of May, 1963, does extend its hearty congratulations and cordial greeting to the Radio Society of Great Britain, with its sincere best wishes for the continued success of its older sister society.

Certified a True Copy

Secretary

From IARU Region I Committee

Congratulations on first half century of good work but remember life begins at fifty.

Harry Laett, HB9GA
Chairman

From Union Belge des Amateurs-Émetteurs

Au nom de notre association et au mien personnellement, je tiens à présenter à la RSGB nos sincères félicitations et meilleurs vœux de prospérité à l'occasion du jubilé d'or de votre association.

R. Vanmuysen, ON4VY
President

From the Radio Society of Ceylon

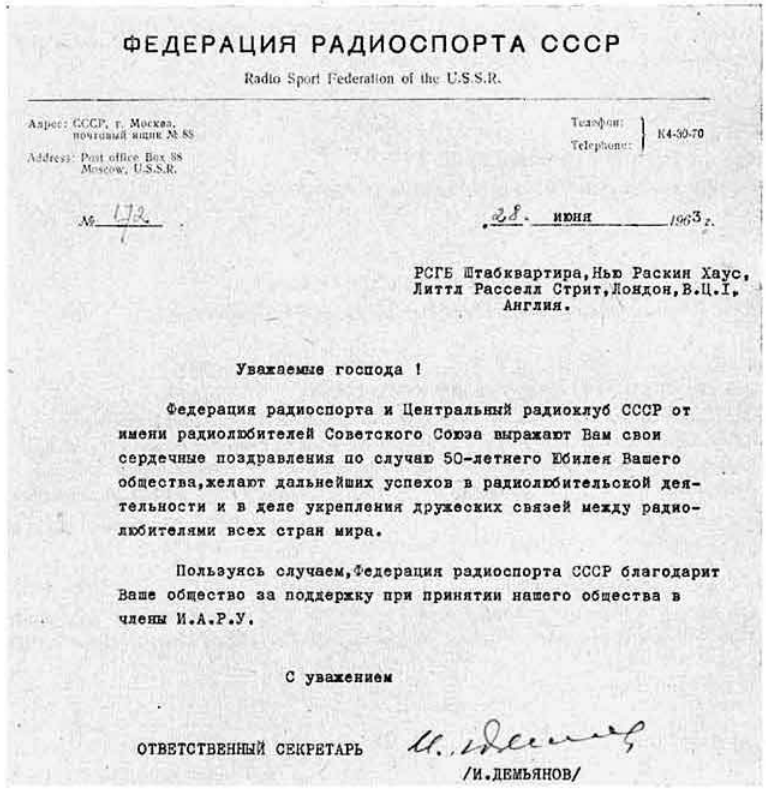
The President, Mrs. Soma Wickremesinghe, 4S7YL, Committee, and members of the Radio Society of Ceylon send their sincere congratulations to the Radio Society of Great Britain on the occasion of the Golden Jubilee Celebrations, and wish them all the very best for the next fifty years.

Ian Wollen, 4S7IW
Honorary Editor, 4S7 Bulletin

From the Radio Sport Federation of the USSR

The President and members of the Central Radio Club of the USSR present their greetings and cordial congratulations to the Radio Society of Great Britain on attaining its 50th anniversary. We wish you every success in the years to come and a continuation of the happy relations between radio amateurs all over the world.

I. Demianov
Secretary



ФЕДЕРАЦИЯ РАДИОСПОРТА СССР

Radio Sport Federation of the U.S.S.R.

Адрес: СССР, г. Москва, почтовый ящик № 88
Address: Post office Box 88 Moscow, U.S.S.R.

Телефон: К4-50-70
Telephone:

№ 172 28 июня 1963 г.

РСГБ Штабквартира, Ньюв Раскин Хаус, Литтл Расселл Стрит, Лондон, В.Ц.I, Англия.

Уважаемые господа !

Федерация радиоспорта и Центральный радиоклуб СССР от имени радиолюбителей Советского Союза выражают Вам свои сердечные поздравления по случаю 50-летнего Юбилея Вашего общества, желают дальнейших успехов в радиолюбительской деятельности и в деле укрепления дружеских связей между радиолюбителями всех стран мира.

Пользуясь случаем, Федерация радиоспорта СССР благодарит Ваше общество за поддержку при принятии нашего общества в члены И.А.Р.У.

С уважением

ОТВЕТСТВЕННЫЙ СЕКРЕТАРЬ /И.ДЕМЬЯНОВ/

From Experimenterende Danske Radioamatorer

EDR send congratulations to RSGB for admirable work on behalf of British and International Amateur Radio over 50 years.

Paul Andersen, OZ6PA
President
B. Petersen, OZ2NU
International Secretary

From Suomen Radioamatoeeriliitto

SRAL sends its best regards and congratulations to the 50th anniversary of the pioneering European radio amateur society. The radio amateurs all over the world owe much to RSGB. The Finnish amateurs wish you a successful and prosperous future.

Osmo A. Wiio, OH2TK, *President*
V. J. Velamo, OH2YV, *Secretary*

From the Radio Amateur-Association of Greece

On behalf of the Governing Board of the Radio Amateur Association of Greece, we would like to express our best wishes for the Golden Jubilee of the Radio Society of Great Britain.

Your Society, so well known to the amateur brotherhood all over the world, has a record in achievements for our hobby, which we hope will continue for years and years to come.

A good many members of our Association are also members of the RSGB and feel proud to belong to such a Society.

(Brig. Gen.) G. Zarifis, SV1AA
President
S. Tsaltas, SV1AT
General Secretary

From the Luxembourg Society, Reseau Luxembourgeois

Sincerest congratulations to RSGB. Best wishes for continued success and more prosperous years.

From the Radio Society of Southern Rhodesia

We wish to convey to your Society our warmest greetings on this auspicious occasion. We trust that the success of the RSGB will continue as it has in the past.

In passing we would like to mention that the 5th July is the anniversary of the birth of the founder of this country—Cecil John Rhodes.

M. E. Henderson (Mrs.), ZE1JE
Secretary of Council

From the New Zealand Old Timers' Club

On the occasion of the RSGB Golden Jubilee I have much pleasure in conveying the best wishes and heartiest congratulations from members of the New Zealand Old Timers' Club.

George Blake, ZL3FX
Honorary Secretary

From the Baltimore Amateur Radio Club

Congratulations on the occasion of your Golden Jubilee.

Bob Evans, W3NO
President

From the International Amateur Radio Club, Geneva

Best Wishes and congratulations extended to RSGB Golden Jubilee.

From the Royal Air Force Amateur Radio Society

On behalf of the members of the Royal Air Force Amateur Radio Society may I extend our best wishes for a most successful Golden Jubilee Celebrations Week. This is indeed a memorable occasion—the half-century mark which by coincidence or design is also our own Silver Jubilee Year and many members of both Societies will therefore be celebrating on two accounts.

May I add my personal greetings and wish the Society every success in the future.

Air Commodore W. D. Disbrey, C.B.E., A.F.C., F.R.Ae.S.

From the Television Society

On behalf of the Officers and Council of the Society, I would like to send you our warmest congratulations on your Golden Jubilee. Please convey our very best wishes to your Council and members for continued success in the future.

Charles Marshall
Honorary Secretary

From Lord Fraser of Lonsdale, C.H., C.B.E.

Lady Fraser and I are in Canada: that is why we are not with you tonight, and we are deeply sorry to miss your Golden Jubilee Celebrations. We are trying to " tune-in " a few salmon, which is just as difficult as working DX was in the nineteen twenties.

I used to think we worked in high frequencies in those days, but I now learn you are after the satellites and the moon. The best of good luck in your explorations; just the kind of thing that amateurs can do so well.

It shocks me to learn that I am almost your oldest ex-President, but reminds me, of course, of the Society's early problems and our battles with various Governments so long ago.

I am comforted by the thought that every " ham " is an " old man," and Lady Fraser agrees with every ham's wife that they have a lot to put up with.

73 OM from 5SU

From A. H. Mumford Esq., O.B.E., Engineer-in-Chief, General Post Office

I was very disappointed when I found that your Golden Jubilee Dinner was being held at the time when I would be out of the country and therefore unable to attend. Over the years I have had many dealings with your Society and have many friends within it. I know full well the valuable work which it does and which I am sure it will continue to do—I nearly said even better, but perhaps that could be misinterpreted.

I would like therefore to congratulate your Society on attaining its Golden Jubilee and may it go on from strength to strength.

From Air Vice-Marshal C. M. Stewart, C.B., C.B.E.

I feel sure I am fulfilling the wishes of RAF Signallers generally, past and present, if I offer hearty congratulations to the Radio Society of Great Britain on the occasion of its Golden Jubilee.

The following are just three of the many links which have been forged over the years between the RAF and the RSGB. We remember the service of your General Secretary, Mr John Clarricoats, O.B.E., with the Royal Flying Corps, and like to feel that it was his training then that put him on the proper path for his long service with your Society! Then in 1924, the short wave amateur experiments of Flight Lieutenant Durrant resulted in the first RAF inter-command short-wave W/T network. Again, just before World War II, the very active fostering by the RSGB of the RAF Civilian Wireless Reserve, initiated by one of my predecessors, then Air Commodore C. W. Nutting, O.B.E., D.S.C., resulted in many of your members seeing very early service with the British Expeditionary Force on the continent.

Long may your Society continue to prosper and its members to maintain their close association with Signallers of the Royal Air Force.

From Maurice Child Esq., ECX, NWX, 2DC

Much regret age prevents me joining you tonight. May Society continue to prosper and increase in amplitude.

From H. L. Wilson, Esq. EI2W

Congratulations on fifty years of service to Amateur Radio. All good wishes for the future.

From William W. Adam Esq., W5WW

May I take this opportunity to wish you a happy Golden Jubilee Celebration and to offer my congratulations on this memorable occasion.

From C. H. Young Esq., G2AK and W. J. Butler Esq., G5LJ

Congratulations on your Jubilee and a pleasant evening to all—sorry we are unable to be with you.

From *CQ Magazine*

On behalf of myself and the staff at CQ I want to extend to you and your group, our heartiest congratulations on the 50th Anniversary of the RSGB, together with our best wishes for continued success in the future.

Arnold S. Trossman, W2DTJ
Editor

From W. J. Halligan Esq., W9AC, The Hallicrafters Co.

Congratulations to all of you on the 50th Anniversary of your great organisation. I sincerely regret I am unable to be with you on this memorable occasion. During the next 50 years I know that RSGB will make as many if not more contributions to the advancement of the state of the art of communications as in the past 50 years, for man's desire to communicate still offers our greatest opportunity to achieve peace on earth and good will towards all mankind.

From L. W. Ensor Esq., ZS6BJ

Congratulations on Golden Jubilee.

From Miss Constance Hall, G8LY

I have been probing my old crystal with a cat's whisker; found several bright spots all forecasting continued success for the RSGB.

Congratulations and good luck.

From E. Robson Esq., VQ4ERR

Congratulations and good wishes on attaining fifty years.

From James N. Roe, Esq., G2VV

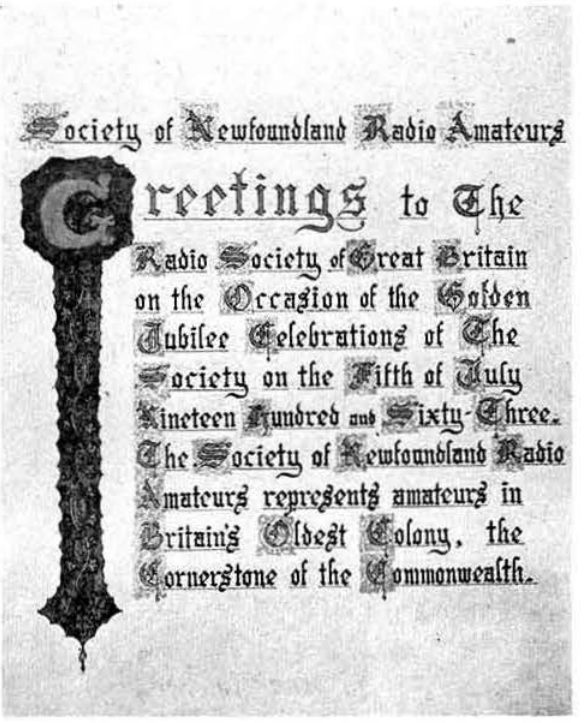
Congratulations to the Society and greetings to all old friends.

From G. R. Wigg Esq., G6JF

Congratulations and may you grow from strength to strength.

From The Society of Newfoundland Radio Amateurs

Greetings to the Radio Society of Great Britain on the occasion of the Golden Jubilee Celebrations of the Society on the fifth of July 1963. The Society of Newfoundland Radio Amateurs represents amateurs in Britain's oldest colony, the cornerstone of the Commonwealth.



(Photo by Rawood Ltd)

Part of the Grand Hall at the Connaught Rooms, London, during the Golden Jubilee Dinner on July 5, 1963.

GOLDEN JUBILEE CELEBRATIONS

RENE KLEIN could little have thought on July 5, 1913, that the meeting he held in his Hampstead home that evening would be celebrated with a five day programme 50 years later. But such was the case. For every one who attended the first meeting, scores—from all over the world—attended the Golden Jubilee Celebrations held in London from July 1-5, 1963.

The Celebrations programme got off to an excellent start on the Monday with parties of members visiting the BBC Television Centre at Shepherds Bush and the DSIR Radio Research Station near Slough.

At the BBC members were given a behind-the-scenes view of TV that the public seldom has the opportunity to see and gained an insight into the vast complex of equipment and services which goes to make up one of the largest units in the entertainment industry. But it was the unglamorous which was the most interesting: the workshops where props and backcloths are produced, the make-up rooms, the Ampex video recorders, even the vast air conditioning plant. Members were shown round the control rooms including the one used for Eurovision, the vast studios and the small presentation suites.

At the Radio Research Station members saw some of the work going on there at the present time. Among the projects inspected were the investigation of the lower ionosphere by rockets, sounding of the ionosphere by the satellite Alouette, the production of satellite orbit predictions, investigation of atmospheric noise and the results obtained from data collected during the International Geophysical Year. Visitors were also able to visit the ionospheric observatory and see back-scatter sounding of the ionosphere.

In the evening Mullard Ltd. held Open House at the Electronics Centre in Mullard House, London, and members had the opportunity to see something of the latest advances

Lord Brabazon of Tara, Lady Brabazon, Clr. Miss Arlow, Clr Harold Bright, Mayor of Holborn, Mrs Norman Caws and the President.
(Photo by Rawood Ltd.)

in this field. In addition, a number of films, for which the Mullard Organisation is well-known, were screened. Demonstrations of the latest equipment for high quality sound reproduction were most impressive, particularly those using semiconductors.

A similar programme took place on the Tuesday.

The London Members' Luncheon Club had its greatest attendance of all time at its Special Golden Jubilee Meeting at the Bedford Corner Hotel, on the Wednesday. Of the 109 present, 24 were from overseas.

During the evening of the same day, a very successful Official Reception, attended by nearly 150 members and visitors, was held at the London Planetarium. Indeed, this event was one of the highlights of the Celebrations. In addition to a first class running buffet throughout the evening, there was a special presentation of the Planetarium programme by the Director, Dr. H. C. King, using the Zeiss Planetarium Projector made in West Germany. The instrument in use in London is the universal model and cost £70,000.

On July 4, a large party of members and visitors boarded the launch *Marchioness* at Westminster Pier for a day-long river trip to Hampton Court Palace. During the voyage GB3RS/M, specially authorized to operate on the tidal

From left to right, G3FUR, Mrs G3HRH, Mrs G3FUR, W2GHK, Mrs W2GHK, VE3CJ, G8KW, G3HRH, G5RV, PA0FX, and W3AYD.
(Photo by LA5HE)

section of the Thames, was active using the new K.W. Electronics s.s.b. transceiver and a 14 Mc/s dipole.

At Hampton Court, the party was met by members of the Thames Valley Amateur Radio Transmitters' Society who acted as guides. TVARTS had gone to great pains to see that they were well briefed and this contributed in no small way to the success of the visit.

In the evening, the London U.H.F. Group held a Social Evening at the Whitehall Hotel, Bloomsbury Square, attended not only by v.h.f./u.h.f. enthusiasts but also by many visitors and friends and operators on the h.f. bands.

The Celebrations culminated on Friday, July 5, with the Golden Jubilee Dinner at the Connaught Rooms, attended by more than 400 members, friends and overseas visitors.

The Guest of Honour was Lord Brabazon of Tara, G.B.E., M.C., P.C., who was accompanied by Lady Brabazon. Other guests included Mr. Noel Eaton, VE3CJ/G3SDA (Canadian Director of the American Radio Relay League), Dr. R. L. Smith-Rose (Past President and member of the Society since 1913, and Chairman of the Government's Frequency Advisory Committee), Councillor Harold Bright, M.A., M.I.E.E., Mayor of Holborn, Mr. A. Wolstencroft, C.B., Director of the Radio Services Dept. of the GPO, Mr. C. T. Melling, C.B.E., M.Sc.Tech., M.I.E.E., President of the Institution of Electrical Engineers, Mr. F. C. McLean, C.B.E., B.Sc.(Hons.), M.I.E.E., Director of Engineering, BBC, Mr. P. A. T. Bevan, C.B.E., B.Sc., M.I.E.E., Chief Engineer, ITA, Mr. W. J. L. Dalmijn, PA0DD, President of VERON, Mr. K. Schultheiss, DL1QK, President of DARC, Mr. Hans Raetz, HB9RF, President of USKA,

The President, Mr. Norman Caws, G3BVG, cutting the Jubilee cake at the Reception in the Electronics Centre at Mullard House on July 1, 1963. With Mr. Caws are the General Secretary, Mr. John Clarricoats, O.B.E., G6CL, and Dr. F. E. Jones, a director of Mullard Ltd.

(Photo by courtesy of Mullard Ltd.)

The President of the DARC, Mr. K. Schultheiss, DL1QK, presenting a cheque for the Headquarters Fund to Mr. Norman Caws, G3BVG.

(Photo by Rawood Ltd.)

Mr. John P. Wilson, G3BGP, Editor of *Electronics Weekly*, Mr. F. L. Devereux, Editor of *Wireless World*, Mr. W. N. Stevens, G3AKA, Editor of *Practical Wireless*, W/Cdr. A. J. E. Forsyth, O.B.E., G6FO, Editor of *Short Wave Magazine* and Dr. A. C. Gee, G2UK, of *Radio Constructor*.

Lord Brabazon, President of the Radio Industry Council, proposed a toast to the RSGB in a witty speech in which he recalled his own early associations with radio.

The President, Mr. Norman Caws, replied on behalf of the Society. In the course of his speech Mr. Caws paid tribute to Mr. Frank Fletcher, G2FUX, for his outstanding work as Honorary Business Manager for the Golden Jubilee Celebrations and read a selection of the many messages congratulating the Society on celebrating its Golden Jubilee.

The toast of " The Guests " was admirably proposed by the General Secretary, Mr. John Clarricoats; Mr. W. J. L. Dalmijn, and Mr. Noel Eaton replied.

At the conclusion of the formal speeches, presentations to the Society were made by the President of DARC, the President of USKA, the President of VERON, and by Mr. R. Otterstad, LA5HE, on behalf of NRRL.

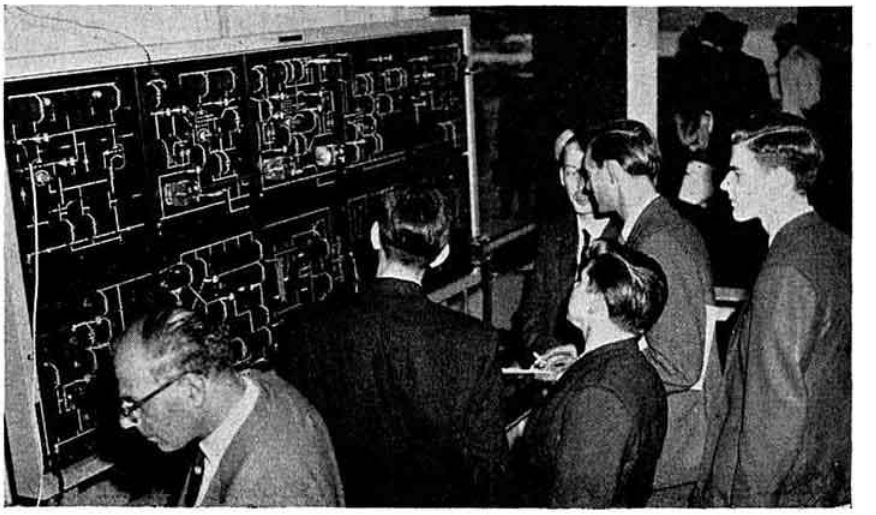
Mr. R. Otterstad, LA5HE, on behalf of NRRL, handed a vase for the new Headquarters to the President.

(Photo by Rawood Ltd.)

At the Golden Jubilee meeting of the London Members' Luncheon Club, l. to r., LA5HE, GM6IZ, VE3CJ/ G3SDA, G6CL, G2EC, Mrs. LX1JW, LX1JW, ZL2ABJ and G3BGP.
(Photo by G3NMR)

Dr. King in the control room at the London Planetarium after the special programme for the Society.
(Photo by G3NMR)

Noel Eaton, VE3CJ, Canadian Director of ARRL, addressing the London Members' Luncheon Club on July 3, 1963.
(Photo by G3NMR)



Mullard Ltd. held Open House at the Mullard Electronics Centre in London on July 1 and 2, to mark the Society's Golden Jubilee. The programme included demonstrations and films. In this picture, members are listening to an explanation of the latest methods of teaching electronics.
(Photo by courtesy of Mullard Ltd.)

One Man's Golden Week

By JACK HUM, G5UM

Sunday, June 30. This Is The Week This Is—RSGB 50 years old and still going strong. The feeling is strong, too, that few of us are likely to see the *next* Golden Jubilee of the RSGB so let's make the most of *this* one.

The Week began when Geoff Stone's voice over GB2RS this Sunday noon reported mass bookings for almost every one of the events due to take place in the days that were to follow. Clearly, keen anticipation—as the local newspaper might put it—was in the air. So far as *our* party was concerned—a crowd of us from The Mid Herts Net—this anticipation was more than realized as the week unfolded.

Monday, July 1. A last-minute check-up on The Net at Eight about rendezvous details for Tuesday onwards . . . yes, better leave cars at an out of town tube station and travel onwards electrically.

Tuesday, July 2. No difficulty in finding Allsop Place once you pinpointed the giant inverted parabola that is the London Planetarium.

Aha, a diamond-in-a-lapel walks past. "Hullo OM! Looking for the coach?" He was G3BTU. Never heard of him, nor he of me. No matter: The Diamond Badge united us both. In the distance a tall CHAPpie looms: I knew *him* all right. We buddied in North London 30 years ago. A whistled CQ temporarily stems the roar of London's traffic, Sid's head turns in our direction, and G6SC joins the throng. Soon G3TR ushers us into the coach, and an hour later we are "ushed" out again under some of the most mouth-watering skyhooks you ever did see.

This was the Radio Research Station at Slough where lab after lab of scientists were seen developing radio techniques that seemed pretty far-out by Amateur Radio standards. Demoralizing? Not a bit of it: lots of the boffins, one noticed, were wearing The Diamond. Many more couldn't wait to pick *our* brains—not us theirs—about anomalous propagation at v.h.f. Whether AMS or PROFS we all seemed to be in it together.

It was hard to tear oneself away from Hut 18—a real ham-shack, this, out in the meadow remote from the smart new Station Headquarters RRS have recently had built—where pulsed Six Forties yanked across the spectrum that Sonde Signal you often hear dash past but can never catch . . . . All the other fellows were waiting in the coach as one panted back, 10 minutes late. Too much to see!

Wednesday, July 3. Not *out*side the London Planetarium this time but inside it, for a session specially laid on for the RSGB. "No public performance this evening" stated a notice on the door. Strange that such a fascinating place should exist an hour's ride from home, and one had never been! DJ1YL said the same: we gathered there was a planetarium in her own Hamburg yet crowds of people she knew had never visited it.

If a Golden Jubilee represents the passage of a considerable slice of time in a man's life-span a session at the London Planetarium suggests that it is no time at all. Dr. King very effectively put us all in our place as denizens of a minor solar system that lurks modestly at the edge of an RST599 galaxy —itself only one of a few trillion.

If that session in the dark of The Planetarium prompted the stray thought that maybe that recalcitrant heap of electronic hardware at home didn't really count for much after all, the supreme importance of Amateur Radio soon reasserted itself as ragchewing recommenced in the concourse.

Thursday, July 4. And what a day! Were we foolish to book for the all-day river trip and its tramp around Hampton Court, as well as for the London UHF Soiree that evening? Many Mid Herts feet did feel a bit beat by the time they clumped off the bus at 7.45 p.m. for Bloomsbury Square's Whitehall Hotel. Some of them had been on the go for 12 hours solid.

Frank Fletcher's superb organization of the documenta-

One of the several groups that toured Hampton Court Palace. Left, G3GGK, Mrs. G3GGK, G2AIQ, Mrs. G2AIQ, Mrs. G5UM, Caroline and G2BLA. Right, Mrs. G2BLA with her parents.
(Photo by G5UM

Two of the tables at the London Members' Luncheon Club on July 3. At the left are G2YL, G2AMV, DL9KJ, DJ1YL, G2IY and Miss May Gadsden of RSGB Headquarters. Right, W2GHK, Mrs. W2GHK, Mrs. G3NMR, G3KVF, Mrs. G3KVF, G3BHT and G8KW.
(Photo by G3NMR)

The President of VERON, Mr. W. J. Dalmijn, PA0DD, presenting a beautiful plaque in Delft china commemorating the Society's Golden Jubilee to Mr. Norman Caws, G3BVG.
(Photo by Rawood Ltd.)

tion for the Golden Jubilee events had been evident to all, long before The Week began. Tickets in differing colours stapled up in booklets had arrived through home letter-boxes well ahead of time—so long as you had *applied* well ahead of time, as you were exhorted to in the BULLETIN. Frank himself *de*stapled the appropriate tickets as we went on board *Marchioness* beneath the smile of Big Ben's dial.

" Three cheers for the Thames Valley Group! " he called —or someone did—as the launch pushed off from Hampton Court pier on the *retour*. And at 40db over nine the cheers were given. Les Cooper, G5LC, and his merry men had been our guides around this noble QTH, built about nine Golden Jubilees ago, and some of them sacrificed holiday time to do so. The cheers they got from the departing hamtinerants were well deserved.

Two lively young Bradford recent-licensees on board were doing " the lot " where the Golden Jubilee events were concerned. They were high in praise of the BBC Television Centre outing the day before, and the reception at Mullard House on the Monday. Unhappily, we had to give these a miss.

That evening. And so to the soft lights and sweet discourse of the London UHF Group's Reception at the Whitehall Hotel, wondering how, after all the energizing of the afternoon, you managed to summon up reserves of stamina to stay on your feet another two hours talking v.h.f.

At the reception at the London Planetarium on July 3, 1963: G5CS, G3BVG, G2AHL and GM5NW.
(Photo by G3NMR)

Friday, July 5. And so to the climax of The Week: the Grand Banquet at the Connaught Rooms, only a stone's throw away, or two or three, from the Society's Headquarters.

If you could imagine all the Conventions and ORM's you've ever attended rolled into one, set in the palatial surroundings of the Connaught Rooms (magnificent food a *sine qua non*) and an array of brilliant speakers from Lord Brabazon of Tara downwards . . . if you can imagine all these things to the 'enth power then you have some slight idea of what the Golden Jubilee dinner was like.

Better choice as guest of honour could not have been imagined than " Brab," as he was universally known before his promotion to The Other Place. He is president of the Radio Industry Council, and as was made plain in his highly diverting speech, an experimentalist to his very marrow, and still, at the age of nearly 80, vitally interested in the things he has grown up with—motors, aeroplanes and radio.

From him came the toast to " The Society "; and from President Norman Caws, G3BVG, came the response in a sincere and moving speech, with tribute paid to those early founding-fathers whose foresight built our more than 11,000-strong Society of today.

" The Guests " was proposed by the General Secretary, John Clarricoats, G6CL, himself almost one of those found-

G2WZ, K9EBE, G3VW, G4KD and G3HPH at the London Members' Luncheon Club Luncheon.
(Photo by G3NMR)

ing fathers, if not quite—at any rate, he could claim to have known practically all of them. " We've got something special in mind for Clarry " the President had said, referring to the fact that this was " Gen Sec's " year of retirement, after all those decades of Society service.

There were two responses to Clarry's toast, one from President W. J. L. Dalmijn, of the Netherlands society (VERON) in perfect English, the other from Noel B. Eaton, Canadian Director of ARRL—a nice touch by our American brethren to send a delegate all that way. Noel, an old hand at Amateur Radio, disclosed that he had just acquired a very new call-sign, G3SDA.

Just for the record, no fewer than 13 overseas call prefixes, excluding the humdrum G series, were represented among the 400-odd people present at the Banquet that night, and encomiums were showered on the Society literally from every one of them—and some of the showers were golden ones in the form of contributions to the building fund. Thanks OMs.

Home long after midnight: and a day or two later by the time these words came off the typewriter all that remained were a few mementoes such as cloakroom ticket 73 from the London Planetarium, the souvenir programme from the banquet and a few snapshots—but a cranium full of vivid memories that will last a very long time.

The Adjustment and Recalibration of Surplus Meters

By GEORGE W. McDONALD, G2OX*

IF economical cost has to be considered, the supply of milliameters and voltmeters for use in the amateur station is in the hands of the surplus equipment dealers. These meters are practically all very good value, but not all have been stored under good conditions before the dealer obtains them, and as he buys in very large batches, it is not uncommon to find that a meter has minor faults when it comes to be put into service. Most of these faults are of a minor nature and can often be found and cured with very little difficulty if one knows the way to go about the job.

The expert knowledge of a instrument mechanic is not necessary for the work likely to be encountered and after studying this article the average mechanically minded amateur should be able to set most faulty meters to right. Notes on the partial dismantling will be given as well as the most common pitfalls likely to be met. Ex-government meters usually require to be recalibrated, a very easy job if approached in a practical rather than a theoretical manner.

Partially Dismantling a Meter for Examination

It will be assumed that the meter requiring attention is working more or less correctly but has one or more of the following faults causing erratic operation: erratic deflection of the pointer, no set zero adjustment, glass fouling the pointer or vice versa, bent pointer, or adjacent turns touching on the balance springs.

Before commencing any work on the meter always prepare a clean working surface. The writer uses the dining table close to a north facing window thus assuring ample daylight. A sheet of white drawing paper is laid flat on the table. The workshop bench should never be used for meter work as it will probably have metal filings hidden in the cracks and crevices. These will not remain hidden long if a meter movement is laid on the bench and many will find their way into the coil gap and be firmly held there by the strong magnetic field. Should this unfortunately happen the only way to remove them completely is to totally dismantle the movement. This is no job for the inexperienced; an expert in instruments will be required to put things right.

For minor repairs such as we have in mind only the minimum of simple tools are necessary: a set of watchmaker's screwdrivers, eyeglass or other magnifier, instrument or similar tweezers and a small camel-hair brush.

The meter must first be taken out of its case by removing the three small screws around the back edge. If one of them is sealed, pick out the sealing compound with the point of a screwdriver. The case should be carefully pulled away from the meter movement. A turning motion should never be used, otherwise damage to the set zero adjuster and even the coil is almost certain. Should it be found that the joint between the case and the movement is difficult to part it may have been treated with some sealing compound when originally assembled. This compound can usually be softened by brushing a small quantity of methylated spirit or carbon tetrachloride round the joint and waiting for the compound to soften.

Once the case has been removed it should be examined and any dust shaken out. The condition of the glass should be noted and cleaned if necessary. If the glass is loose it will, on the slightest touch from the outside, fall slightly inwards and foul the pointer. A loose glass should be fixed into the case with a suitable adhesive such as Durofix. A broken glass can be easily replaced by one made from a piece of clear plastic.

While examining the case do not forget the set zero adjuster: the pin may be missing. The writer has found this to be a fairly common fault on surplus meters. A piece of stiff wire, long enough to connect with the set zero fork, can be used as a replacement pin should the original pin be lost. The pin can be fixed to the set zero adjusting screw with Araldite adhesive. This adhesive will easily withstand the twisting movement on the pin.

Before leaving the case as repaired, we shall return for a moment to the substitution of plastic for glass. A plastic glass readily acquires a static charge and this can sometimes cause errors in calibration, and an apparently sticky pointer. To avoid this happening a piece of thin metal foil in contact with the plastic should be connected to one terminal of the meter. This will allow any static charge to leak away from the glass.

The Movement

The movement is now ready for mechanical examination. The first check to be made is on the freedom of the pointer to move across the scale. The pointer should never be moved by pushing it with the finger—use a camel-hair brush very lightly. Should the pointer stick for any reason the brush will pass over it without damage. It cannot be too strongly stressed that the pointer should never be forced across the scale. For a quick test it is permissible to blow lightly across the face of the meter with your breath and move the pointer that way.

Any tendency for the pointer to stick should be investigated. The causes are relatively few, such as dirt or some tiny object in the coil gap or the pointer mechanically fouling the dial plate. Metal objects in the coil gap can, if they are magnetic, be removed by some deft work with the point of a fine sewing needle. Careful use of a sharp pointed match stick will remove any other object.

* *55 Cherrytree Drive, Whickham, Newcastle upon Tyne.*

The more obscure causes of a sticking pointer are rusted pivots, bent pivots, or severely damaged balance springs. These faults are, to most amateurs, irreparable, and if the meter is a valuable one it should be sent to an expert mechanic. The latter course is never worth it where a surplus meter is concerned.

The balance springs rarely give trouble but if the meter has had a bad mechanical shock the adjacent turns may be fouling each other. Careful examination with the magnifier and some work with the point of a needle will usually clear the touching turns.

There may be reason to remove the dial plate, such as for recalibration. The care required when removing the dial plate is just the same as required when handling other parts of the movement. The dial plate is fixed to the magnet assembly by two screws and if they are removed while the meter is lying on its back the plate will seriously damage the pointer as it falls over backwards. To avoid this, hold the dial while removing the screws and slide the dial plate off, carefully clearing the pointer.

Since damage to the pointer is highly likely when inexperienced hands dismantle meters, a few words on pointer repair and replacement will not be out of place. Bent pointers can be straightened by gentle use of tweezers, and a broken one can be refitted on to the broken stub using a little shellac as adhesive. A new pointer can be made from a bristle taken from the domestic broom, stiffened with shellac, and stuck on to the stub of the broken one. The writer has used this method several times with success.

It should be appreciated that replacing a pointer will upset the balance of the movement. Faulty balance shows up in that the pointer zero varies according to the plane in which the meter face is lying. This balance is of some importance in an accurate multirange instrument which is liable to be moved from vertical to horizontal during use. If the meter is to be permanently fixed to a panel, and the pointer is capable of being set to zero by the zero adjuster it can be taken that the balance is good enough for the purpose. If the set zero adjuster will not bring the pointer to zero the adjuster at the back of the movement may be adjusted slightly in order to zero the pointer. More experienced readers may like to try balancing a movement. This is done by adding or subtracting weight from the balance arms which extend at right angles and vertically from the main pointer where it meets the pivot. Suitable weights are made by tapping a hot soldering iron on the bench thus producing lots of tiny blobs of solder. These blobs make ideal balance weights and are fixed to the balance arms with " tacky " shellac. It should be mentioned, however, that balancing an expensive movement is a job for a trained instrument mechanic.

While the dial plate is removed it is as well if the meter is to be recalibrated to find out whether a permanent shunt is fitted across the meter terminals. This is often so and when fitted the meter has a fairly high full scale deflection current.

If the meter is scaled to read above 10 mA an internal current shunt will usually be found connected across the terminals at the rear of the magnet assembly. By removing this shunt the true full scale deflection of the meter may be measured. This may be anything above 2 mA in the cheaper grade of surplus instrument. Any required shunt should be fitted externally to the meter terminals rather than internally because removing a movement from its case in order to fit a shunt or multiplier risks damage due to accidental mishandling of what is a very delicate mechanical structure. It will also be seen that using externally shunted meters in the shack makes for maximum utilization of available meters.

It should be noted, however, that a small wire-wound series resistor is often fitted on the back plate and is usually connected between the back balance spring and one meter terminal. The purpose of this resistor may be for temperature compensation or to bring the normal scale reading to a convenient value. This resistor should not be removed; its existence is mentioned only because it may be confused with shunts across the meter terminals.

Reassembly of any part removed will be fairly obvious and the only point to watch is the fitting of the case which should be fitted as it was removed; that is without any turning movement. Make sure the set zero adjuster is correctly fitted into the fork on the front of the movement.

Recalibration of the Meter

It is well known that the current reading of a meter can be increased by inserting resistance in parallel with the meter terminals, and that the voltage reading can be increased by adding resistance in series with the meter. It will also be appreciated that whether a meter reads current or voltage is purely a matter of scale calibration.

Basically, the moving coil meter is a current-operated device. Theoretical formulae are given in the Appendix to this article to enable the value of current shunts and voltage multipliers to be calculated, but the writer intends to say no more about theory and calculation and confine his description to more practical methods of calibration. Only one item of equipment is necessary for recalibration and that is a meter, preferably multi-range, of known accuracy.

It is necessary to know the internal resistance of the meter if the formulae given in the appendix are to be applied, and an essentially practical way of doing this is as follows. Pass a current through the meter under test and the one of known calibration until the former meter shows full scale deflection. The meters are of course connected in series. Various values of low resistance are now placed in parallel with the meter under test until its reading has fallen to half scale. The parallel resistance of the meter and the shunt are now of equal value. Measuring the value of the shunt on an ohmmeter will give the internal resistance of the meter.

Calibration procedure to increase the current range of a meter starts by connecting the two meters in series and passing current through the circuit so that the meter under test

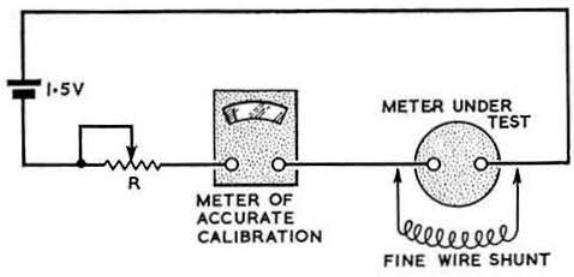


Fig. 1. Circuit for the calibration of a current meter. Resistor R is adjusted until the current in the circuit causes full scale deflection of the meter under test. The f.s.d. is measured on the meter of known accuracy. The length of the fine wire shunt is adjusted until the meter under test reads one tenth of its original f.s.d.

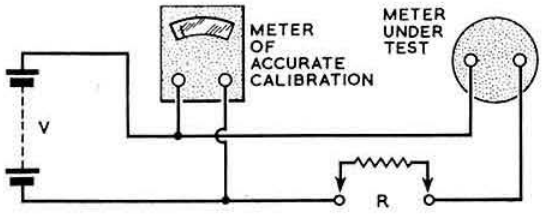


Fig. 2. Circuit for the calibration of a voltmeter. Select the voltage V to suit the full scale voltage reading required of the meter under test, with an open circuit at terminals R. Touch the ends of a high value (say, 100K ohms) carbon resistor across these terminals. Observe the deflection on the meter under test and adjust the value of the resistor higher or lower to make the meter read full scale.

reads full scale deflection. The circuit is shown in Fig. 1. Assume it is required to make the meter under test read ten times its full scale reading of, say, 1 mA. The easy way to do this after setting the meter to read full scale deflection current is to connect one end of a piece of thin copper wire (38 or 42 silk covered) to one terminal of the meter. Run off a foot or so of the wire and connect that end to the other terminal of the meter. The deflection should now be less than before due to the shunting action of the wire. By increasing or decreasing the length of this wire as the case may require, the current reading on the shunted meter is made to fall to one-tenth of its full scale value. The piece of wire is now removed from the meter and would on to a suitable small former. The current measuring set up is again repeated and the shunt trimmed to give an accurate reading on the meter under test compared with the one of known accuracy. Difficult to describe perhaps but it takes only seconds to carry out in practice and there is little danger of seriously damaging the movement because the rough work is done within the f.s.d. current of the meter. It should be realized

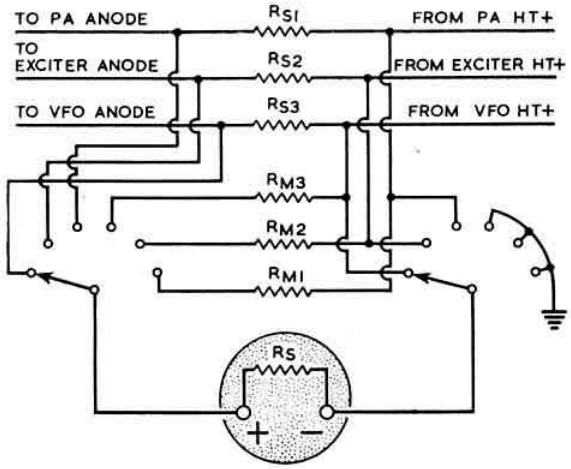


Fig.3. Suggested metering circuit for a multi-stage transmitter using a surplus meter of 4mA f.s.d. R_S, permanent shunt to make meter read 10mA f.s.d.; R_{S1}, shunt to give f.s.d. of 500mA; R_{S2}, shunt to give f.s.d. of 100mA; R_{S3}, shunt to give f.s.d. of 20mA; R_{M1}, multiplier to give f.s.d. of 700 volts; R_{M2}, multiplier to give f.s.d. of 350 volts; R_{M3}, multiplier to give f.s.d. of 120 volts.

that there is always some risk of damaging a meter during recalibration so care in the operation is advised.

Fig. 2 shows the practical circuit for the recalibration of a voltmeter or the conversion of a milliameter to a voltmeter. A series resistance of high value is required in this case and a good supply of low wattage carbon resistors is useful. The procedure is to find a value of multiplier resistor which will make the meter under test read the required voltage as indicated on the accurate instrument. Several resistors in parallel or series parallel may be required to make up the correct value.

In this way any surplus meter can be made to read any higher current or voltage the user requires. Fig. 3 shows a method favoured by the writer to enable a plug-in surplus meter to be used to give various current and voltage readings throughout an exciter and transmitter unit.

It may be necessary to rescale the meter after recalibration and this is most easily done by pasting a piece of fine writing paper over the old scale and carefully marking the new scale with a fine pen and black ink.*

Surplus meters have been used by the writer in various pieces of equipment and given good service and reliability over many years.

Appendix I

Formulae for the calculation of the value of resistance required to increase the range of voltmeters and milliameters.

Voltmeter

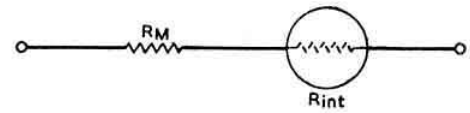


Fig. 4. Use of a milliameter as a voltmeter. R_M, multiplier; R_{int}, internal resistance of meter.

If R_m is required value of multiplier resistance and R_{int} the value of the meter internal resistance then

$$R_m = R_{int}\,(n-1)$$

where n is the desired scale multiplier.

Milliameter

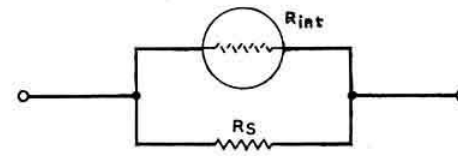


Fig. 5. Extending the range of a milliameter by means of a shunt, R_S.

$$R_s = \frac{R_{int}}{n-1}$$

where R_s is value of required shunt resistance, and n is desired scale multiplier.

* An alternative method would be to remove the original calibration with " Thawpit " and make the new markings with " Letraset " dry transfers of suitable size.—*Editor.*

TECHNICAL TOPICS By PAT HAWKER, G3VA

Ergonomics · Transistor Transmitters · Crystal Synthesizer · VXO

Hybrid Power Supply · Voltage-dropping Capacitors

V.H.F. Converters with Amateur-band Receivers · U.H.F. Ignition Interference · Batteries

Battery Stabilizer · Simple Baluns · Wee Birdcage · Information Retrieval

ERGONOMICS is not one of those words that get swapped around much on the amateur bands; yet the subject is one of considerable interest to those amateurs who —almost unique in the electronics field—both design and operate their equipment. In this age of specialization, these two functions have long been separated in professional communications.

Perhaps a better term for ergonomics is human engineering or even operability. It simply means designing equipment from the user's point of view, with full recognition of human quirks and foibles. This is exactly what some amateurs have been doing for years, although with much less use of the multi-syllable words which float around psychological research laboratories.

A search through the back copies of amateur radio journals will show that many of the current findings of the ergonomics experts have long been appreciated by the amateur operator: that large round knobs are best for sensitive controls; that switches and controls should be within easy reach and neither too stiff nor too loose; that good lighting, a comfortable chair, and a good feel to a Morse key all tend to make a station more efficient over longer periods; and that good grouping of controls and meters has a tangible effect on the smooth running of a station.

But this does not mean that we can afford to neglect the mass of information which is being dug up by ergonomics research. We know that some amateurs have been following this work with interest. A short "check list for human engineering" published in *TT* (October, 1961) attracted several comments, while many members will recall a stimulating RSGB lecture on the subject by G6CJ (and later gloriously illustrated in the BULL by G. Toose-Eady showing how ergonomics could help the DX operator.)

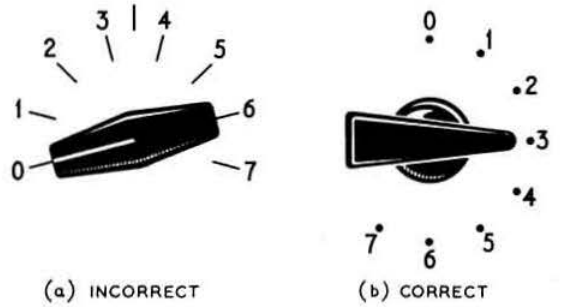


Fig. 1. Practical suggestions resulting from ergonomics research. (a) shows how a symmetrically shaped pointer and switch positioning leads to ambiguity and has to be read carefully. (b) an unambiguous pointer and clock-face layout makes reading at a glance much easier.

Recently we have been reading a short booklet published by DSIR (*Ergonomics for Industry: 2, Instruments and People*) which stresses that electronic instruments and equipment should be regarded along with the user as a combined "working unit" and that neglect of human factors leads to inefficiency. Some of the practical points come from studies into the design of large digital computer consoles (see *Ergonomics*, Vol. 5, No. 1) but are equally applicable to amateur stations.

For example, Fig. 1 shows two methods of mounting a multi-position rotary switch. The type of knob shown in Fig. 1(a) was found to lead quite often to 180° errors in reading. The adoption of an unambiguous knob and the use of the familiar "clock face" layout resulted in correct readings at a glance.

The use of knobs of different shapes, with special groupings and colour codings if there are many controls, may not at first please those who love symmetrical control panels, but can result in far fewer incorrect operations. Where there are a number of meters, colour and patterns can be used and it will be helpful if the "correct" position of all meter needles can be arranged in an exact pattern (for instance all needles horizontal or all vertical) so that a meter showing an incorrect reading stands out. With meters, the creation of specular reflections on the glass makes them difficult to read; this can be avoided by careful arrangement of the illumination.

The balancing of tasks between the two hands (not forgetting that the c.w. operator often needs to hold and use a pencil); the placing of controls so that the operator does not have to stretch or turn; chairs of the right height—these and many other factors are the type of ways in which ergonomics can help not only industry but also the amateur designer.

Transistor Transmitters

Almost three years ago, *TT* reported a forecast made by a well-known transistor expert at the 1960 RSGB Convention at Cambridge that "150 watt h.f. transistors at prices comparable to valves of equivalent dissipation are now but two years or so distant." Despite the steady progress in semiconductors in the interim period, this is regrettably far from having come true. For example, we noted recently the new 2N2884 transistors which will provide between one and four watts output up to 500 Mc/s—but blinked when we found that in small quantities such units cost $150 (about £54) each. The Motorola type MM800 which will provide 15 watts (unmodulated) output up to 50 Mc/s with a col-

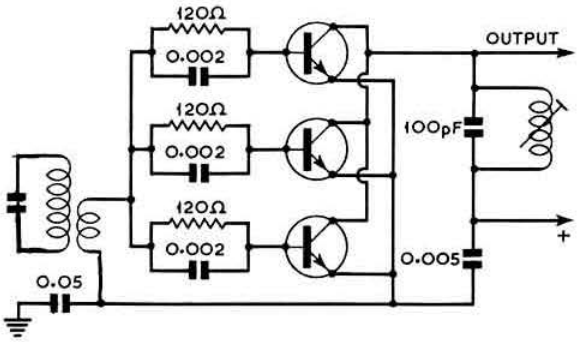


Fig. 2. Three PT857 n-p-n transistors are connected in parallel in a 5-watt, 27 Mc/s citizen's band rig now marketed in the USA (*Electronics World*, June, 1963).

lector voltage of 25 and 3 watts drive is much cheaper—but still costs around $44.50 (about £16). Power transistors for v.h.f. and even h.f. thus still have a good way to go as regards price before they can appeal to many amateurs. This explains why there are still few published designs for amateur transistor rigs with output in real watts.

Transistors can of course be connected in parallel to increase power, and the circuit of Fig. 2 comes from a 5 watt 27 Mc/s " citizens band " transistor rig marketed in the States.

More on Crystal Practice

The technical accent at the moment seems to be fair and square on methods of increasing oscillator stability. We have referred several times to the elaborate mixer-type units known in commercial circles as frequency synthesizers, and rather guessed it would not be long before someone got around to producing simplified designs for amateur work.

One of the most promising is W3QLV's design in *QST* (May, 1963) which uses 20 FT243 crystals. One oscillator operates in steps of 10 kc/s between 7900 to 7990 kc/s (10 crystals); a second in 1 kc/s steps between 4400 to 4391 kc/s (10 crystals). The outputs are mixed in a 6BA7 stage to produce an output between 3500 to 3599 kc/s and then amplified by a 5763 stage. To provide continuous coverage a 2 × 100 pF differential capacitor is connected so that the

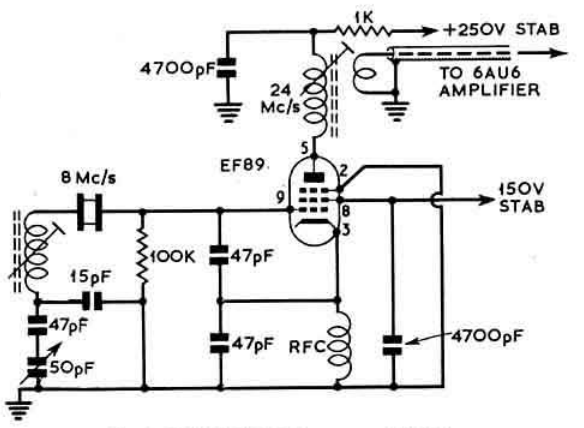


Fig. 3. F8NB's VXO for use on 144 Mc/s.

parallel trimming capacitance across one oscillator can be increased while the other decreases; this provides a variation of at least 500 c/s on each side of the nominal frequency, so that provided all crystals are etched to the correct frequency (probably the trickiest part of the construction) continuous coverage is achieved. Two rotary switches select the units and tens (a chance to put Fig. 1(b) to use!).

The degree of crystal " pulling " with parallel capacitance as above is much less than when inductors are used in vxo circuits (but stability is also degraded much less). Where stability is not quite so important, the vxo can be a useful device, and G2BVN has drawn our attention to a variation of the usual circuit described by F8NB in *Radio-REF* (January, 1963 with circuit correction in February issue): Fig. 3. This unit is intended for 144 Mc/s operation with an 8 Mc/s crystal and the stability will depend largely upon the construction of the grid coil. In the article the coil dimensions are given in terms of a proprietary former, but will be of the order given in the usual vxo arrangement (*TT* February, 1961). The 50 pF capacitor will provide a shift of about 100 kc/s on 144 Mc/s but with an active crystal adjustment of the inductance is said to make it possible to obtain an output anywhere between 144-145·3 Mc/s with a single 8075 kc/s crystal. We suggest however that pulling should be kept to the minimum needed. At least three French stations are quoted as using this arrangement on 144 Mc/s so it is probably worth considering if you do not mind some trial and error with coil and circuit values.

The use of the vxo principle for v.h.f. operation is likely to be given a further push by a unit described by W1HDQ in *QST* (July, 1963) for 144 and 432 Mc/s. This uses the basic circuit (*TT*, February, 1961) with a 6AK5 oscillator, 6U8 amplifier-multiplier.

Recently we attended an interesting symposia, held by Mullard Ltd. to introduce a new range of h.f. and v.h.f. crystals using miniature and sub-miniature holders (corresponding to styles HC6U and HC18U) of all-glass, evacuated type which are said to have some useful advantages (such as less ageing) over metal holders. While we doubt whether many amateurs will be tempted away from lower price surplus types, it may be worth noting that these new holders are available.

Hybrid Power Supplies

Back in April, 1960 we gave the circuit of a hybrid (mixed valve and semiconductor) power supply by K4EEU capable of supplying a 700/800 volt line and several lower voltage h.t. rails from a single 350-0-350 volt transformer. At the time, silicon rectifiers were not readily available in the UK so that some of the advantages went unnoticed. The basic idea continues to turn up and a point underlined by WA4EPY in *Electronics World* (June, 1963) is that a conventional 350 volt power pack can very easily be converted to provide a transmitter supply of 700 volts by adding two strings of silicon diodes and changing the conventional capacitor input smoothing filter into a choke input type. Fig. 4 shows the arrangement as published, although we advise the addition of transient suppressor resistors or capacitors across the silicon diodes. While WA4EPY uses six 400 p.i.v. diodes with a 375-0-375 volt transformer, we feel it would be safer to add an extra diode to each string to take care of mains transients. Two 800 p.i.v. types in each string (four altogether) would give a reasonable safety margin.

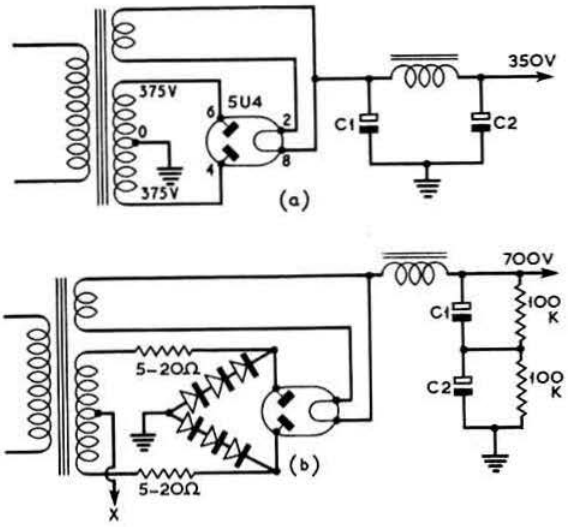


Fig. 4. How a conventional 350 volt power supply can be easily converted into a 700 volt supply for a transmitter with the aid of two strings of silicon diodes (we advise connection of 100K ohm resistors across each diode for transient protection). A lower voltage rail (about 350 volts) can be taken from point X through a further ripple filter which can be of the capacitor input type.

An important point with this circuit is that the efficiency of the bridge rectifier arrangement is roughly 40 per cent higher than for the full-wave circuit; this means that the transformer can deliver considerably more power. In intermittent service, such as for amateur transmitting, the power output can be raised to 150 or even 200 per cent of the original; in other words if the original pack supplied say 200 mA at 350 volts, it would be fairly safe to draw up to almost this current at 700 volts (less if appreciable current is drawn from the lower voltage rail, if any).

Capacitors for Voltage Dropping

Some years ago there was a small Philco broadcast receiver using series-connected valve heaters but with the usual voltage-dropping power resistor replaced by a 2·7 μF paper-dielectric capacitor. Since voltage dropping resistors usually contribute considerably to the heat, and are a fairly frequent cause of breakdown, the idea seemed a good one, though it meant that the receiver was suitable only for 50 c/s mains. The only heat generated in the capacitor would be the small amount resulting from power factor loss. There may have been disadvantages, probably economic, since the idea never caught on. But one still occasionally comes across

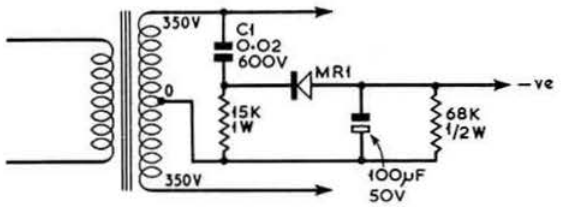


Fig. 5. To obtain a negative bias supply from one half of the main power transformer, C1 (0·02 μF, 600 V.) is used as a voltage dropping component instead of the usual resistor. MR1 is a 20 mA 135-volt metal rectifier.

the use of capacitors for voltage dropping in various applications. Fig. 5 shows the bias supply of a high fidelity amplifier using a pair of 6973 valves in fixed-bias class AB1 from *Electronics World* (January, 1960). This idea might be worth remembering when a negative bias source is required in modulators or transmitters; the capacitor also provides current limiting. In this particular circuit the key component is C1, a paper capacitor rated at 600 volts. The value, 0·02 μF, would have been calculated for 60 c/s mains.

V.H.F. Converters with Amateur-band Receivers

The advantages of amateur bands only as compared with general coverage receivers are by now widely appreciated. The subject is discussed in the *RSGB Handbook* and some additional points are mentioned in a National Co. advertisement in the May *QST*. Apart from tuning rate, the amateur bands only receiver is easier to stabilize both electrically and mechanically, and is clearly preferable where optimum performance in the h.f. amateur bands is the only criterion.

One problem which arises with most such receivers is the difficulty of using them in conjunction with crystal-controlled v.h.f. converters. Some receivers have special wider bands intended for use as tunable i.f. stages with such converters, but this is rare. This is a particular problem in the US where the two-metre band is 4 Mc/s wide.

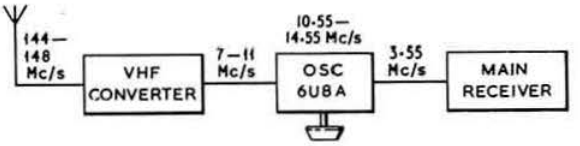


Fig. 6. A 6U8A tunable mixer is used in this arrangement to allow a fixed-tuned v.h.f. converter to be used with an amateur-bands-only receiver to give a 4 Mc/s wide coverage.

A different approach to the problem, due to W2DVG, appears in the June *QST*. This interposes a tunable 6U8A mixer stage between the v.h.f. converter and the main receiver. In the particular example discussed, the 144-148 Mc/s v.h.f. converter provides an output on 7-11 Mc/s, and the tunable oscillator of the 6U8A covers 10·55-14·55 Mc/s, thus providing a fixed output on 3·55 Mc/s for feeding into the main receiver.

Clearly, there are disadvantages to this technique: the possibility of spurious responses is increased; the tuning mechanism on the main receiver is no longer used; and there is another h.f. oscillator whose stability affects incoming signals. Nevertheless, W2DVG has found the system very satisfactory in practice, and it certainly provides one solution to what is likely to become an increasingly common problem as general coverage receivers gradually fade out of use.

Ignition Interference at U.H.F.

Above about 100 Mc/s the intensity of ignition interference begins to fall away, though as u.h.f. receiver sensitivity increases the interference becomes more noticeable. Some detailed tests have recently been carried out on 895 Mc/s using large 28 ft. parabolic aerials of the type used for troposcatter communications aimed at a road some 1,300 ft. away, and capable of distinguishing the source of interference from among the passing cars.

Among the points emerging from these tests is that they

showed that conventional ignition suppression techniques (such as using a resistor in series with the spark plug, or using high resistance wiring) have very little effect at u.h.f. A possible explanation of this is that the bulk of the radiation occurs directly from the shank of the spark plug. However, it was found that interference is much less on modern cars than older ones, a likely reason being that many cars (at least in the US) now tend to have metallic plates over the entire spark plug section.

A further finding was that interference was of random polarization so that, from this point of view, horizontal aerials are unlikely to show any marked improvement over vertically-polarized ones.

Batteries Again

Just after we wrote the notes on batteries for the June *TT*, we found out that Mallory are now marketing alkaline-manganese batteries in the UK. These high-energy cells were discussed in *TT* back in December, 1961 but at the time were not readily available here. As we have said, these units fall intermediate between conventional carbon-zinc cells and mercury cells, both in performance and price. They

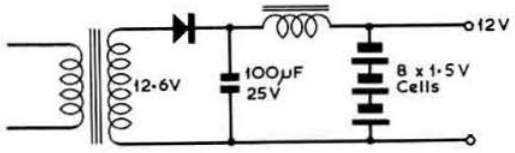


Fig. 7. The use of batteries to stabilize the output of a low-voltage mains unit for use with transistor equipment.

stand up to long periods of discharge better than c-z cells and also have a better shelf-life.

Several methods of stabilizing the output from small power packs for use with transistor equipment have been given from time to time. But one of the simplest dodges (*Electronics World*, June, 1963) is simply to connect a small battery of appropriate voltage across the output of the power pack. This not only stabilizes the output but also reduces ripple and can be used to replace the output ripple capacitor if required: see Fig. 7. Provided that the voltages of the pack and the battery are roughly the same, the total current drawn from the battery will be very low so that the battery should last practically its shelf life.

While on this subject of small power sources, we note that the US Army recently complained that some 75 per cent of failures of portable communications gear can still be attributed to power supplies. In this field, it considers that progress has been much slower than other aspects of portable and handheld equipment. The US communicators are therefore seeking entirely new techniques capable of providing up to about 150 watts, quite apart from the urgent demand for power sources for communications satellites.

Of the present systems, thermionic power sources are deemed hot and inefficient; fuel cells are not yet reliable or efficient in any practical size; nuclear techniques require extensive shielding which adds to the weight; and cadmium type batteries classed as not yet efficient enough.

Remembering only too clearly the troubles we experienced during a period when we had to rely on 350 watt petrol generators to maintain communications links—and the frenzied efforts involved in starting motors with a rope in

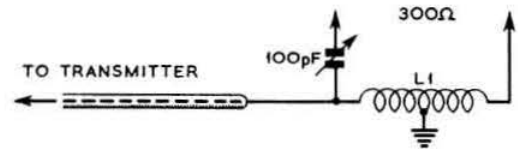


Fig. 8. A simple aerial coupler to provide 300 ohm balanced output. Coil dimensions for 50 Mc/s are L1 8 turns of No. 10 B & S wound on a ¾ in. dowel which is then removed and wire stretched for wire-diameter spacing. Centre tap 4 turns.

time to keep schedules (and keeping discreetly quiet about the ways in which we managed to ruin two generators in the course of a few months), we can well believe that there is a fortune awaiting anyone who comes up with a really convenient means of generating electric power in small but appreciable amounts.

Aerial Topics

In the June *TT* we included an *L*-match circuit for feeding medium- and high-impedance single-wire aerials from 50-75 ohm pi-network transmitter output sockets. Another common requirement is for feeding balanced 300 and 600 ohm transmission lines. Co-ax (see below) and coil-type baluns (see *TT* December, 1960) can be used for this purpose, but a very simple arrangement is given by K3EJU in *Electronics World* (July, 1963). His coil dimensions are for the American 50 Mc/s band but could be scaled for other bands.

Some suggested dimensions for co-ax baluns for 144 Mc/s and 432 Mc/s are given by WA2INM in *73* (December, 1962) for feeding 300-ohm ladder line to reduce the appreciable power losses on these frequencies of low-impedance co-ax feeder. The dimensions are for RG8/U co-ax and may need a little adjustment for different types of co-ax.

In *73* (April, 1963) K3LNZ comes up with the idea of using the G4ZU " Birdcage " type aerial in a quarter-wave version instead of the original full-wave form, and calls this the " wee birdcage." In effect, this means simply using an array built for 14 Mc/s on 3·5 Mc/s, etc. Or, for a 14 Mc/s array, the element size would be only 2 ft. 2 in. instead of 8 ft. 8 in., thus simplifying construction. Performance of the quart-size array is well below that of the gallon model, but K3LNZ and W3CYT claim that the miniature model still gives appreciable gain over a dipole.

The notes we provided on the low-height " Hula Hoop " aerial (April, 1963) created a stir (though a few wrongly believed it was all an April 1 item!). Recently we met G6CJ who told us he has been carrying out some experiments on the system using his famous model aerial table. We hope that he will be commenting later on the results achieved. A practical snag we gather is the low system impedance calling for an extremely efficient ground plane,

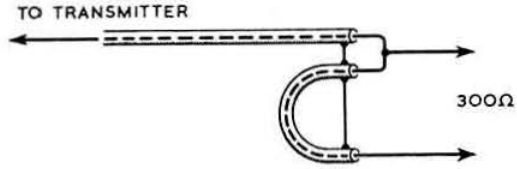


Fig. 9. A co-axial balun with a step-up ratio of 1:4, suitable for supplying 300 ohm feeder. Length of the balun section is 26½ in. on 144 Mc/s and 8⅞ in. on 432 Mc/s.

likely to be beyond the scope or space of most amateurs. In the original Californian model, operated over rocky soil, the ground plane was formed from no less than 90 half-wave radials, and while one could almost certainly get away with less than this, it does appear that ground losses must be kept very low.

Information Retrieval

One of the problems which face amateurs as well as professional engineers is how to cope with the mass of technical information which pours from the printing presses. Books, journals, makers' data sheets and booklets all contain items which may need to be consulted later in a hurry. Quite a number of suggestions on card-indexing and other schemes have appeared from time to time, and these can be very effective for the amateur who keeps his basic store of information in good order—though one can always upset a whole pile of index cards with devastating results.

Frankly, this is a problem which we have never solved to our own satisfaction, and we tend to depend on odd notes and hard-cover indexed exercise books in which important articles can be listed under subject matter, and circuits and minor items of information copied. One practical snag is that one tends to copy a circuit and then forget to include some component value—and more important the source from which it came. This is what leads to frantic searches every time *TT* is written.

We would, in this connection, like to congratulate our Editor on changing to a bound-in index instead of the loose leaf version which we always lost within a few months of issue.

Perhaps it is because of the lack of a good filing system, but we find it difficult to cope with the number of members' letters enquiring after all sorts of topics apart from those raised in these articles. While we do not want to discourage anyone from writing in on matters which have appeared, we find it impossible to run a general technical advisory service in the limited time available.

Another snag, which we have mentioned before, is that many of these items come from Library sources, so that we are usually unable ourselves to supply copies of the original articles, though publishers' addresses can be given.

New Headquarters for American Radio Relay League

The address of the American Radio Relay League is now 225 Main Street, Newington 11, Connecticut, USA.

Special Events Stations

The South Shields and District Amateur Radio Club will be operating a station at this year's South Shields Annual Flower Show at Bents Park, South Shields, under the call-sign **GB3SFS** on all bands from 10 to 80m, from August 9 to 11. RTTY equipment will also be demonstrated at the stand, and it is hoped to make skeds with other teleprinter stations in the UK.

The Northern Heights Amateur Radio Society will be operating demonstration stations under the call-sign **G3MDW/A** on August 10 at the Halifax Agricultural Show and on August 17 at the Forset Cottage Community Centre Gala, near Halifax. Special QSLs will be sent to all contacts on the h.f. bands.

GB3KEC will be operative on phone and c.w. from the Kent Summer School until August 9. All bands from 160 to 10m and 2m are in use. Contacts will be most welcome, especially with teachers and pupils. QSL cards from UK and near-European stations may be sent direct to the Kent Summer School, Folkestone, or via the RSGB QSL Bureau.

ZL2IY Honoured

Mr. W. D. Gorman, ZL2IY, of Wellington, New Zealand, has been awarded the M.B.E. for services to the community especially in connection with the New Zealand Amateur Radio Emergency Corps (Search and Rescue Organization).

Mr. John Savage, G3MSS

Mr. John Savage, G3MSS, formerly Sales Director of Collins Radio Company of England Ltd., has been appointed Deputy Managing Director of the company.

Electrical Engineers Exhibition, 1964

More exhibitors than ever before have booked space at the Electrical Engineers Exhibition to be held at Earls Court, London, from March 18 to 25, 1964.

The General Manager of Electrical Engineers (A.S.E.E.) Exhibition Ltd. is Mr P. A. Thorogood, G4KD.

The Bent Aerial

By GEORGE HOWE

HAVE you ever groaned at those articles on " Working on 80 metres from a Small Garden " which begin, " Take two 40 ft. poles about 90 ft. apart . . . "? I have, because my yard is only a mere 35 ft., and I only have one 25 ft. pole at the far end. Nevertheless, " 80 " was a band to be tackled.

First attempts were made with the core and braid of the co-ax feeding a 40m dipole joined together. The result—plenty of r.f. in the shack (making everything quite shocking) and very little in the aerial. I had better point out that the

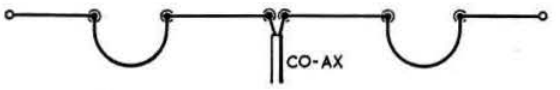


Fig. 1. Shortened 7 Mc/s aerial which could not be made to function on 3·5 Mc/s.

7 Mc/s dipole has a 66 ft. element, one end entering the roof space of the house. Approximately 10 ft. from each end of this aerial there is a loop as shown in Fig. 1. The aerial operates perfectly satisfactorily on the band for which it was intended. A loaded end-fed (Fig. 2) worked well in the direction of Scandinavia but made the rest of Europe almost impossible to raise.

After reading the discussion on folded aerials on page 364 of the R.S.G.B. *Amateur Radio Handbook*, it was decided to use a bent aerial. The inclusion of a loading coil finalized the arrangement which is shown in Fig. 3. All Europe from Sweden round to Ireland in a clockwise direction are all now easily worked. Results with VE, TT8 and TF compare very favourably with those of stations known to be using conventional long wires.

Construction

The loading coil consists of 41 turns of 2mm p.v.c. covered wire close-wound on a 2 in. diameter paxolin former. It has

Fig. 2. Loaded end-fed aerial.

a broadband characteristic, and thus has a number of technical drawbacks, but in the prototype, it works.

Precautions have been taken to prevent the " return " portion of the aerial fouling the down-lead by moving the " return " lead 18 in. to one side at the base of the vertical plane.

A reflectometer* was employed to check the s.w.r. and gave an indication of a ratio of very nearly 1 : 1, which showed that the aerial was loading well. Little readjustment of the

* *Amateur Radio Handbook*, p. 482.

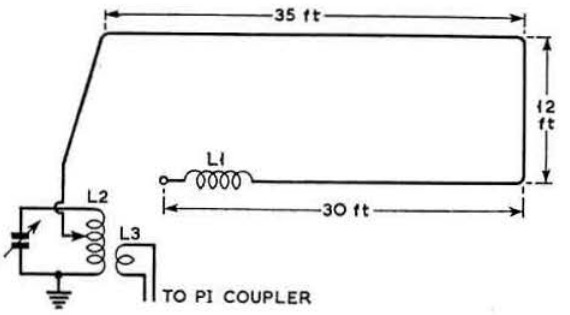


Fig. 3. The loaded " bent " aerial arrangement finally adopted.

capacitor in the tuning unit is necessary when changing frequency within the band.

Results

The problem of interference is very slight with the " Bent Aerial," particularly with respect to TVI. No interference is caused, even to a TV receiver in the adjacent terrace house, although admittedly the shack is very near to the Crystal Palace transmitter. Some BCI is noticeable at the high end of the medium wave band as a result of the second harmonic of the broadcast receiver oscillator lying within the 80m band, but the radiated energy has proved to be too small to cause any complaints from neighbours.

The general performance of the aerial is good, and it can be recommended to anyone who has little space to erect aerials but wants to operate on 80m.

THE MONTH ON THE AIR

A CHRONICLE OF EVENTS ON THE HF AMATEUR BANDS

By R. F. STEVENS, G2BVN *

IT was a great pleasure to be able to welcome a number of overseas DX'ers to the Golden Jubilee Celebrations, and it is hoped that their all too brief stay will not have been their last visit to the UK. Amongst the impressions gained by visitors to British amateur stations were (a) the large amount of commercial equipment now in use, and (b) the high power employed in a number of cases. It seems that the modern trend is for the amateur operator to build less and less of his equipment, a retrograde step which will lead in due course to amateurs being manipulators of " black boxes," and in some cases, not very expert at the task, judging by some of the atrocious signals on the bands.

With regard to the use of high power the methods of measurement of power are quite clearly laid down and any departures from the licence conditions reflect no credit on the operator concerned. As far as the outside world is concerned, the status of the amateur movement as a whole is suspect when breaches of the regulations occur. Even the rawest novice could raise Pacific DX with completely commercial equipment and a power of two kilowatts, but it takes skill to achieve the same results with home-built equipment used within the licence conditions.

News from Overseas

4S7IW, Ian Wollen, notes the absence of signals from the UK, although most days will produce European stations around 16.00. At the unusual time of 03.00 Swedish stations have been worked at good signal strengths. The only 4S7 station using s.s.b., Ian is always on the lookout for UK contacts, but apparently spends most of his time working the W6 area. At present the KWM-2 is used with a ground plane, but a HyGain beam is on its way out from the UK.

ST2AR is once again on the air using s.s.b., this time with a home-built rig using a McCoy filter. Eric will be on leave in the UK until September 23, his QTH being 119 Raeburn Avenue, Surbiton, Surrey. He will be pleased to deal with any outstanding QSL requests.

SM5BGK, Gary Wickstroem, formerly operator of **SL1CF** at Visby on the island of Gotland, would like to express his thanks to UK stations for many pleasant QSOs which helped to break the monotony of his spell of military duty on the island. There are only three SL1 stations and of these two are at present inactive. Gary will be pleased to honour QSL requests and the present address appears in *QTH Corner*.

Recently **G5RV** spent some weeks in **Iran** and was able to see first hand the progress made by Amateur Radio in that country. There are now 23 licences issued with seven others pending. This co-operation by the Government is due mainly to the efforts of EP2AR, the president of the newly formed Radio Club of Iran. The list is headed by EP1MP, HRH Prince Mahmud Reza Pahlavi and includes the nationals of seven overseas countries. Pending the issue of EP2RV, G5RV was permitted to operate as G5RV/EP2, and some 200 QSOs were made on 14 and 21 Mc/s during limited operating time. G5RV will be returning to Iran in about five months and hopes then to utilize the call EP2RV. Openings to Europe from Iran on 14 Mc/s were found between 08.00 and 23.00, whilst 21 Mc/s was frequently open during daylight hours. G5RV would like to record his appreciation of the most friendly welcome he received in Iran.

During a holiday in France which coincided with NFD, **G2MI** received a number of **Top Band** portable stations on a transistor receiver using about 8 ft. of wire added to the original rod aerial. G2MI mentions that there was absolutely no sign of Loran and says he was unable to log any UK portable stations on 3·5 Mc/s. The following stations were received at Duisery (about 50 miles south of Dijon) between 20.38 and 20.58: G5FA/P (559), G3EFX/P (569), G6CJ/P (559), G2BP/P (579 and the most consistent signal), G2DPQ/P (559), G3GMI/P (539), and G3RB/P (549).

A letter from Rowland Beardow, **VE3AML** (ex-G3FT), tells of the formation of the **Radio Society of Ontario Inc.** which has a membership of 500 licensed amateurs and 100 short wave listeners. The RSO is the result of an amalgamation of two former organizations, and the membership dues are $1 per year. VE3AML offers to deal with any questions regarding licences and operating conditions in Canada.

The **Sixth Jamboree-on-the-Air** will take place between 00.01 on October 19 and 23.59 on October 20, 1963.

DX Century Club members at the Region I IARU Conference in Malmö in June: left to right, standing, HB9J, VE3CJ, G2BVN, PA0FX, WILVQ, OZ2NU, SM4GL; seated, SM7ACB, SM5KV, LA5HE. Note the DXCC size bottles!

*Please send all news items to RSGB Headquarters to arrive not later than August 9 for the September issue and September 6 for the October issue.

VE3WSB, the Boy Scout World Bureau station in Ottawa, will again take part, and **GB3BPH** will be active from Baden-Powell House in London. Last year stations in 63 countries took part in this event including some 80 stations in the UK. It is hoped that many of the UK stations taking part will make use of the 144 Mc/s band thus easing congestion on the lower frequencies.

There have been several enquiries regarding the simultaneous use of the prefixes **M1** and **9A1** by two stations operating from San Marino. How this state of affairs occurred is not known, but both these prefixes have been officially allocated to San Marino by the ITU, and presumably either may be used at the discretion of the licensing authorities. In order that operators may have some idea of what to expect in the way of prefixes having a figure as the first cypher, a list has been compiled, which, it is hoped, is correct at the present time.

Top Band DX should not be dismissed as an impossibility during the summer months, for **VP8GQ** reports hearing **G3GRL** on 1825 kc/s on July 13, and **DHJ** has been heard in Eastern USA at 01.30 GMT. **ZS2FM** is active and contact was made with **W1BB** on July 18 at 04.55. The operating frequency of ZS2FM is usually 1901 kc/s whilst VP8GQ invariably uses 1801 kc/s. The summer *Bulletin* from W1BB records many DX happenings on this band in what was once regarded as the close season.

VK4SS forwards a note from Don Reid of the **Christmas Island Amateur Radio Club** telling of the arrival of Pieter Joubert, ZS6LM, with the first s.s.b. equipment, amateur or commercial, seen on the Island. A rotary beam was erected on June 22 and good conditions on the following day enabled contacts to be made with 28 countries, using the call VK6ZS/VK9. Since the departure of ZS6LM the equipment has been operated by members of the Radio Club under the call VK9DR.

DXpeditions

In view of the present situation regarding **Willis Island** the following note from **VK2AGH** will be of much interest. " W.e.f. June 13, 1963 a change of personnel will take place on Willis Island, and the new operator will have the call **VK4JQ.** This is John Copley ex-G3DYD, VR3N, JZ0PC and VK2AVU, who at the present time has a Swan s.s.b. transreceiver only. He hopes to be as active as conditions permit but will be limited by fuel, commercial skeds, weather and radiosonde work. Willis has one ship per year and is a completely isolated coral atoll, 300 yards long and 100 yards wide containing a cyclone warning station." VK2AGH notes that recent pile-ups have produced some of the worst manners he has heard in 34 years of operating, a situation that will, unfortunately, be endorsed from the UK.

For seven days from August 18 members of the South Shields and District ARC will be operating from St. Abbs, **Berwickshire** as **GM3ROA/P,** using 1·8 Mc/s c.w. as the *modus operandi.*

The schedule for the operation from the **Channel Islands** by **GB2GC** is as follows: August 9 to 21, all bands from 3·5 to 28 Mc/s from Jersey; August 9 to 11, 1·8 Mc/s from Sark; August 13 to 15, 1·8 Mc/s from Alderney and August 17 to 21, 1·8 Mc/s from Jersey.

The Wolverton District Radio Club will be operating under the call **G3OBY/P** and using s.s.b. between 1900 and 1930 kc/s, when active from **Rutland** during the period October 5-6. Transreceiver equipment will be used and stations should call on the transmitting frequency. Calls on all modes will be answered.

F9UC/FC and **F9RY/FC** were worked by many stations when operating from **Corsica** as the Hammarlund DXpedition of the Month. The QSL address appears in *QTH Corner.* It was noted that the advertising mentioned that Corsica had not before been represented on s.s.b. This, however, is not correct as F9QV/FC operated the HB9TL portable rig from this country in February, 1961.

Numeral Prefixes

3A	Monaco	5V	Togo Rep.
3B to 3F	Canada	5W	Samoa
3G	Chile	5X	Uganda
3H to 3U	China	6A/B	Egypt
3V	Tunisia	6C	Syria
3W	Vietnam	6D to 6J	Mexico
3X	Rep. of Guinea	6K to 6N	Korean Rep.
3Y	Norway	6O	Somalia
3Z	Poland	6P/S	Pakistan
4A to 4C	Mexico	6T/U	Sudan
4D to 4I	Philippines	6V/W	Senegal Rep.
4J to 4L	USSR	7A to 7I	Indonesia
4M	Venezuela	7J to 7N	Japan
4N/O	Yugoslavia	7S	Sweden
4P/S	Ceylon	7X	Algeria
4T	Peru	7Z	Saudi Arabia
4U	UN	8A to 8I	Indonesia
4V	Haiti	8J to 8N	Japan
4W	Yemen	8S	Sweden
4X and 4Z	Israel	8T to 8Y	India
5A	Libya	8Z	Saudi Arabia
5B	Cyprus	9A	San Marino
5C to 5G	Morocco	9B to 9D	Iran
5H/I	Tanganyika	9E/F	Ethiopia
5J/K	Colombia	9G	Ghana
5L/M	Liberia	9K	Kuwait
5P/Q	Denmark	9L	Sierra Leone
5R/S	Malagasy Rep.	9M	Malaya
5T	Mauretania	9O to 9T	Congo Rep.
5U	Niger Rep.		

A QSP by G3MEA from **PY4AS** gives the information that the Brazilian Navy were unable to take him to **Trindade Is.** as planned. A considerable amount of equipment had been prepared by PY4AS who had also arranged his vacation to suit. Better luck next time, Joe.

The first s.s.b. operation from **Mongolia** was organized by the members of radio club station UA3KOE, and UA3CA, Vladimir Belousow, will be operating **JT1CA** for a further five to six weeks from Ulan-Bator. Frequencies noted are 14,095 kc/s for c.w. and 14,108 and 14,111 for s.s.b. (UB5FG).

UA1CC has plans to be active from **UJ8** on s.s.b. during the period July 23 to August 10, but the call is not yet known.

The operation from **VK9BH** ceased on or about July 18, but at the time of writing relatively few UK stations have succeeded in working **Nauru.** That this is due partly to poor conditions is not denied, but the operation has been spasmodic and unpredictable, and the activities of unwanted but vociferous MCs from Europe have made conditions even more difficult. A number of stations completed their QSOs only by the relaying of reports in both directions! Surely this is something which cannot be tolerated even in these days of condoned malpractices.

The operation from **Christmas Island** is, at the present, clouded in mystery, and it is not known for certain just who was active on what dates, and how many piratical QSOs were made. What is known, however, is that ZS6LM received more than 50 requests by cablegram for schedules!

The operation from **St. Helena** by G3PEU as **ZD7BW** is scheduled to commence on August 7. QSLs should be sent to his home QTH, and will be dealt with on the operator's return home at the end of the year.

It is reported by the *West Gulf DX Club Bulletin* that a group of Argentinian stations are organizing a DXpedition covering South Sandwich, South Georgia and the Falkland Islands. LU2XL is apparently in charge of the operation.

CR5AA was the call used by W9JJF during his stay in Portuguese Guinea, and QSLs should go to his home QTH.

W4BPD commenced operation from Bhutan under the

call **AC5A** on July 18. After journeyings in this area Gus hopes to be in Australia on October 15, from where he will make trips to Willis Island, Lord Howe Island and other dxotic spots.

The following is a tabulation of DXpeditions which might materialize in the near future. Being based mainly on rumour and chit-chat heard on the bands, the dates must be taken as a guide only.

July 23 to August 10. UJ8 by Igor, UA1CC.
August 7 for several months. ZD7BW by G3PEU.
August 9 to 21. Channel Is. by GB2GC as detailed.
August 10 to 30. Alderney by GC2HFD/A.
August 18 to 25. Berwickshire by GM3ROA/P.
August 17 to September 1. Sark by GC3PAI/A.
August 31 to September 7. PX1MO and PX1QX.
August. W4BPD from AC5.
August. Vatican City as Hammarlund operation.
Until end of August. JT1CA by UA3CA.
September. Aves Is. (YV0).

DXCC News

The July 1963 issue of *QST* restates the criteria used to determine country status for DXCC. An additional point listed as para. 2 (b) and having an effective date of April 1, 1963 reads as follows:

Islands forming part of an island group, or which are geographically located adjacent to an island or island group which have a common government or administration, will be considered as separate entities provided there are at least 500 miles of open water separation between the two areas in question.

It has been decided by ARRL the recent operation of **VQ8BFA** will count as St. Brandon.

It had been assumed that **VP2CC/C**, operated from Carriacou Is., would count as Grenada, but there is apparently some possibility that it will count as St. Vincent. Definite word is awaited.

Contests

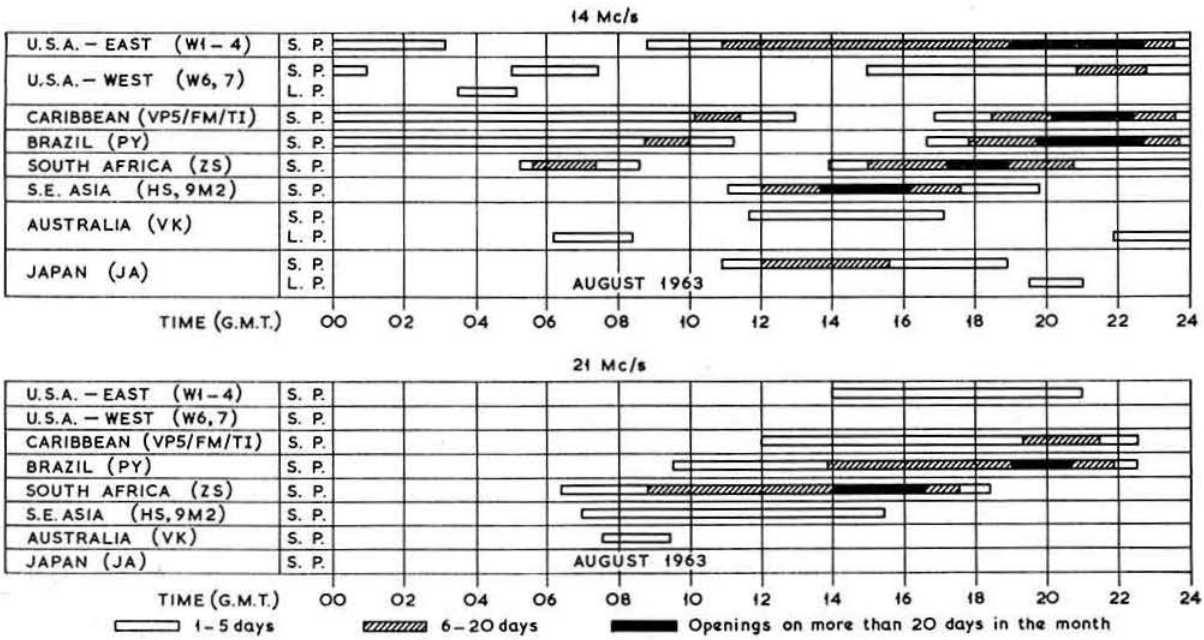
The **Pakistan Day Contest** organized by the Tiger Amateur Radio Club and held for the first time on March 23, 1963 attracted a large number of entries from all parts of the world, the leading UK station being **G2GM**, who received a handsome certificate.

The Finnish national society, **SRAL**, who are the organisers of the **Scandinavian Activity Contest** for 1963, have made

PROPAGATION PREDICTIONS

August is the last month during which typical summer conditions will be experienced. The short skip sporadic E contacts of between 300 and 1,200 miles on 28 and 21 Mc/s will come to an end, and the former band may open occasionally to South America between 14.00 and 19.30 and to Africa between 09.30 and 17.00. On 21 Mc/s, South America and Africa will provide good signals on a number of days, but North America and Australia will only be heard on rare occasions. The 14 Mc/s band will again carry most of the DX traffic, as would be expected during this phase of the sunspot cycle, but DX conditions will slightly worsen, particularly towards the end of the month, as the longer nights lead to lower F2 m.u.f. than during the summer. It is expected that with the corresponding change of seasons in the Southern Hemisphere that the path to Africa on 21 and 14 Mc/s will remain open longer than during previous months. Little change in conditions on 3·5 and 7 Mc/s is expected.

The provisional sunspot number for June 1963 issued by the Zurich Observatory was 36, with the period of greatest activity lying between June 8 and June 17. On June 10, a number of 92 was recorded, whilst the lowest figure of 7 was observed on June 22. Predictions for September and October are smoothed numbers of 21 and 20 respectively as the present cycle proceeds towards its minimum expected in the closing months of 1964.



available leaflets giving the rules for non-Scandinavian participants. The rules will not therefore be published as previously intended, but a copy of the leaflet may be obtained by sending a s.a.s.e. to G2BVN. One of the results of the recent IARU Conference was an agreement to publish contest rules at least 90 days in advance, and it is hoped that the good example of SRAL will be followed in the remainder of Region I.

Leaflets giving details of the **WAE DX Contests** on August 10-11 and August 17-18 are available from G2BVN by sending a s.a.s.e.

Leading claimed scores in the **1963 National Field Day** are:

Port Talbot Group	GW4CG/GW5VX	2303 points
Cardiff Group	GW5BI/GW4FW	2106 points
Gravesend ARS	G6VC/G6BQ	1946 points
Cannock Chase ARS	G3ABG/G4CP	1943 points
Stourbridge and District ARS	G8GF/G6OI	1905 points
Oxford and District ARS	G2DU/G8PX	1839 points
Medway Group	G2BP/G2ZP	1728 points
Stamford and District Group	G3ARS/G3FUR	1595 points
Croydon Group	G5BZ/G6LX	1541 points
Weston-super-Mare Group	G5UG/G8FC	1518 points

Awards

The Liga dos Amadores de Radio de Angola offers the **DAP Award** to operators who can produce proof of contact with at least 30 Portuguese stations in Africa since January 1, 1957, according to the following rules:

(i) QSL cards must be sent showing contacts with CT3—2 QSOs, CR4—3 QSOs, CR5 (Guinea or Sao Tome)—1 QSO, CR6—12 QSOs and CR7—12 QSOs.

(ii) A minimum report of RST337 is required for QSOs which may be of mixed modes on any amateur band. Contacts with the same station on different bands do not count, nor do QSOs with ships or aircraft.

(iii) Confirmations must be sent by registered post to LARA at PO Box 484, Luanda, Angola, and must be accompanied by a signed declaration that the applicant's licence conditions were adhered to and also ten IRC for postage. **(G3AAE).**

The Racine Megacycle Club offers the **Worked 99 Wisconsin Award** to operators able to produce proof of contact with 99 Wisconsin stations after January 1, 1957, including three Racine County contacts. There are no band or mode limitations. Stations outside North America may send a certified list of the QSLs held also stating that outward QSLs have been sent. If the list only is sent the charge is five IRC. Applications should be sent to R. Bayer, W9QGR, 1012 Walton Avenue, Racine, Wisconsin, USA. So far only one award has been issued to a station outside the state of Wisconsin. In Racine County more than 175 stations are active.

The Central Radio Club of Czechoslovakia has inaugurated the **P75P Award** for amateur contacts with the 75 geographical broadcasting zones established by the Geneva Radio Regulations (1959). Two way phone or c.w. contacts only are allowed and these must be dated after January 1, 1960, with minimum reports of 337 or 33. The Third Class Award will be issued to those who can produce proof of contact with 50 different zones; and the Second and First Class Awards will be issued to those who can produce 60 and 70 confirmations respectively. QSLs and ten IRC should be sent to the Central Radio Club of Czechoslovakia, PO Box 69, Prague from whom a map and list of zones is available. In sending this information **G8TS** enquires regarding a source of detailed maps of the USSR, in which a number of the zones are located. There exists a source of well-drawn, reasonably-priced maps in the *National Geographic Magazine* series, which are obtainable in the UK from the London agents of the *Magazine*.

W.e.f. **October 1, 1963, K6BX** is making alterations in the arrangements for the supply of the **Directory of Certificates** and associated publications. From this date the *Directory* will be produced quarterly from October 1 and will be available at 18s. 6d. for single copies. A year's supply of four *Directories* will cost 58s. These figures cover delivery by Third Class mail. Additionally, there will be the **Directory Extra News Letter** which will now carry all matter previously appearing in the *DX-QSL-NL*, and which will appear quarterly from October 1. The annual subscription, covering four issues by Third Class mail, will cost 15s. Existing *Revision* and *DX-QSL-NL* obligations will be phased out during the next year and no renewals at the existing figures will be accepted after September 15, 1963. This production of only two copyrighted publications is designed to assist in the reduction of clerical work necessary and to coincide with a revision of the present accounting system.

Around the Bands*

The reports this month show a similar picture to the May analysis—all quiet on the low bands, 7 Mc/s giving some interesting contacts, 14 and 21 Mc/s very busy and 28 Mc/s activity on the up and up.

Very little to report on **1·8 Mc/s** this month! **A.2461** (Torquay) comments that the additional countries now getting permission to operate this band will make it more interesting during the coming winter.

The W stations formerly to be heard regularly on **3·5 Mc/s** have practically faded out for the time being. **B.R.S.20317** (Bromley) heard ZP9AY (00.20) working EI9J and VP8GQ but both very weak. **A.2461** (Torquay) found OY2Z working G and GM stations and VS9KDV calling CQ. Also heard were VP8GQ (01.00) and TF5TN (01.00) and several W3/4's. **A.3621** (RAF Cosford) reports many special events stations on this band including GB3WYE, GB3VER, GB3MYA and GB3RCS at various times.

G3POI (London) submits a list of DX for **7 Mc/s** which shows that interesting contacts are there if you care to listen. His log includes CE4EC (23.00), F9UC/FC (20.28), LU6FA (21.58), PX1IK (21.30), PY7TK (20.35), PY7TY (23.51), TF2WHB (16.25), TF3KB (00.25), VP9BO (23.25), YV5BGG (23.12) and last but not least SM5DIC/9Q5 at 18.22—all on c.w. **GM4QK** (Strathaven) reports c.w. with CR7BJ (19.30), VQ4IV (19.30), and PY7TK (07.00). **G3LPS** (Blackburn) between 20.10-23.00 GMT worked HK7UL, HP1IE (06.00), UM8KAA, LU6FA, YV4FX, TF3KB, PY1NFC, PY1BCA, UF6FE and many others. Finally **B.R.S.20317** (Bromley) makes a useful survey of the band, summarized as follows.

Europe—UW1OF, CT2BO, PZ1IK and TF2WHB (ex-K4MQD).

Asia—Little to be heard but UM8KAA heard regularly at 22.50 GMT onwards and UJ8AB at 18.30.

Africa—Good representation including 6O1ND (01.06), FL5A (02.30), CR6AI (20.20), ST2AR (00.45), 9Q5TJ (22.40), VQ2WR (22.10), ZS6DF (20.24) and CT3AB (23.30).

South America—Plenty of PY's and LU's about, together with HK7ANZ and YV2AH (a new prefix).

North America—Principally east coast stations at their best in the late evenings.

Central America—Not a lot of DX from this area at this time of year but 6YAXG (23.45), KV4DB, and KP4AOO (02.34) at S8.

The **14 Mc/s** band has been providing DX for everyone. Starting with the short path in the early mornings to West

*Compiled by J. G. Cottrell, G3PSY

Coast W6, W7, VE 4 to 8, KH, KL, etc., and extending to the Pacific generally during the day, the band is providing many interesting contacts. The path to the south west opens late in the morning and gradually moves around to take in Africa and South and North America by late evening. Almost any country can be worked at some time or another. **G3YF** (Chingford) reports c.w. with CE0AC (01.30), CR9AH (17.37), KA7IB (17.10), KJ6BZ (08.15), JT1CA (16.00), PX1IK (14.05), M1QJ (08.35), VR2DK (07.30), VS4RS (13.45), VK9DR (14.45), VK6ZS/VK9 (14.50), WA6QRV/KJ6 (07.40), VS9MB (14.15) and W4BPD/4WI (16.50), whilst s.s.b. found CE0ZI/5 (00.15), F9RY/FC (12.30), KB6CB (09.00), KM6BI (13.30), KA2USF (13.15), K6CQV/KS6 (08.10), VQ1GDW (17.50) plus many others.

G3PVS (Woking) found AP2AC (15.40), CN8AW (13.20), 9M2GJ (15.07), VS4RB (15.16) and FP8CB (20.00). African activity is reported by **B.R.S.24821** (Barkingside) from 9U5TH (18.35), 9G1CC and 9G1EC (17.50) and EA8OM (18.25). **G3LPS** (Blackburn) found ST2AR (14.56), 5N2ACB (16.20), ZD8JP (19.35), CR6CH (20.14), ZD6OL (17.45), VS9KDV (21.36) and FL5A (19.04) all on c.w.

A.2498 (Co. Durham) has been using the propagation prediction charts and finds them extremely useful and accurate. His list includes (s.s.b.) CE3DH (22.30), CP1BH and CP5AD (22.30), FG7XT (07.30 and 21.30), MP4BCC (14.30), PJ2AA (22.15), VP5DB (23.00), VP6WR (22.45), W2ZXM/MM (*Flying Enterprise* off Korean Coast at 17.30), ZP5CF (22.00) and many others.

G3HCT (Warwickshire) worked c.w. with HR2FG, FL5A, VK6ZS/VK9, and the PX and M1 expeditions. **G3AAE** (Loughton) contacted VP4VP (20.45), CP3CB (20.50), TU2AQ (21.00), HL9TH (15.45), OA4CG (22.00), 5T5AD (16.55), FY7YJ (21.45), PJ2ME (22.00), YN3KM (01.00), BV1USC (19.20) and FP8CG (19.45). **G3PTO** (Wolverhampton) got some good DX using home-brew equipment and TA2BK (22.28), VE8RN (06.50), LU2EN (21.26), 9A1TAI (17.20) and EP2RH/P were among the catch. **A.3633** (Lancashire) reports for the first time with CR9AH (17.50), HK3HX (22.16), XZ4BB (23.29) and CM2QN (23.50). **GM3ITN** (Glasgow) made it on c.w. with VR6TC (07.30), TI9RC (23.30), HC8CA (23.00), KG6JD (16.25), HK0A1 (23.35, San Andres), TY2AB (19.00), XE1AX (23.40), 6R8CM (18.30) and ET3PT (17.25) to list the rarer ones only. Finally **G6XL** (Leeds) confirms conditions and adds VR1N (07.14), YN5JMB (23.55), VQ8BFA (18.03), FO8AA (06.45) and ZL1ABZ (08.00). Listeners **A.3699** and **A.2114** are also thanked for their reports which confirm the above findings.

Activity appears to be the limiting factor on **21 Mc/s** but many good contacts can be made. **G3LPS** (Blackburn) reports c.w. with PZ1BW (22.30), M1/ON4QJ and F9UC/FC. **G3AAE** (Loughton) found VK9LA at 09.45 whilst **A.3532** (Glasgow) adds 9U5BB, 6W8AA and JT1KAA (22.24) all on a.m. Your compiler **G3PSY** (Thorpe Bay) worked c.w. with G5RV/EP2 (17.32), CR7IZ (17.53), WA6GLD (18.00), EL2U (18.23), 5X5JE (18.22), PY4BC (19.08), 9G1EC on a.m. (19.45), 5N2RSB (20.18), EL8AF (20.33), PY7KIP (20.40), HK7AME (21.36), LU6MBF (21.52), OA4NQ (22.10), CE4CE (22.21), VQ4IV (12.12). F9UC/FC (17.55), IT2AI (20.01). **A.2340** (Plymouth) submits a long list of DX heard on a.m. including TT8AL (13.00), TU2AC (13.15), many South American areas and HP1MN (23.20), VQ2AX (18.04) and FG7XM (21.59). C.w. also yielded many stations such as KZ5HK (21.40), ZE3JO (10.38), VP9FC (19.34) and ZS6IW (15.37).

The **28 Mc/s** band has given many operators a number of new countries during recent weeks. Conditions have been good on both c.w. and a.m. for the whole of Europe and DX to the South West. Africa and South America have been heard and worked. **G3PSY** (Thorpe Bay) has contacted VQ2W (18.25), UF6CW (11.44), F9UC/FC (17.55) and many stations in UB5, CT1, HA, OE, UQ2, DL7, I1, DM, EI, SM, HB9 and LA. On June 15 LU3PJ was working into Europe at 58 for some time (20.00 GMT). **G3PUF** (Wolverhampton) heard EA1AB, UQ2HM and DM3IGY and worked DJ8LU and HB9PA. **A.2461** (Torquay) reports VQ2WR, VQ4AA, 9G1EE, PY2CEN and 5N2JKO. Contacts can be made from 08.00 GMT onwards and European stations are often to be heard up to midnight. **A.2340** (Plymouth) also reports a long list of European stations. More reports of stations worked on this band will be welcomed.

DX Briefs

VK8HB in Alice Springs is active on 14 Mc/s c.w. and particularly on the look-out for European QSOs. (VK4SS).

Three known cases of piracy come to be listed: **VP2AC** (worked by G3JAG) and saying QSL via K0BPO; **EA0FL** who is apparently located in Spain, and **PM1XX,** worked by some US stations.

G3JAG records that on several days he has been able to work VK5KO on 7 Mc/s at around 06.00 and again at 21.45.

G3MUM (Redcar) and **G2TS** (Sunderland), both Top Band enthusiasts and well known to members, are now approaching their 1,000 QSOs on this band.

QTH Corner

CN8FR	via WA5ADH, L. Cundiff, Route 3, Conway, Arkansas, USA (home QTH).
F9RY/FC } **F9UC/FC** }	Hammarlund DXpedition, General Post Office, PO Box 7388, New York, 1, NY, USA.
FK8AU	Box 697, Noumea, New Caledonia.
FP8CG	via W1DDF.
FU8AF	via W6UOU, Henry Radio, 11240 West Olympic Blvd., Los Angeles 64, Calif., USA.
FU8AG	via VK2QJ (home call).
FY7YJ	28 Goinet, Cayenne, French Guiana.
HI8JSM	J. J. de Madrena, Box 521, Santo Domingo, Dominican Republic.
HK9LX	via HK3LX.
JT1CA	Box 639, Ulan Bator, Mongolia. *UK only via G2BVN.*
KG4BX	via W2CTN.
KX6DB	via WA6HRS (recent activity only).
MP4QAR/4WI	via W4ECI.
OX3UD	via W2CTN.
PX1IK	via HB9KU.
PX1OX	via DL2OX, 212 Hohenzollern Str., Mönchen-Gladbach, W. Germany.
VK4JQ	via W6HYG, 1011 Tam O'Shanter Drive, Bakersfield, Calif., USA.
VP2GAC	via W8EWS.
SL1CF	G. Wickstroem, Svedmyrastigen 20, Enskede, Sweden.
VP2CC/C	via W8EWS.
VR4CU	via W6UOU (see FU8AF above).
VS9KDV	via W4ECI.
W4KKA/VS9	via K4SCT.
ZD7BW	via G3PEU (home QTH).
W4BPD/4WI	via W4ECI.
5N2ACB	A. Cyril Bell, AE-in-C., P & T HQ, Lagos, Nigeria.
5N2DJH	D. J. Hume, Dept. of Civil Aviation, Kano.
5N2EGL	E. G. Lintott, STO, Signal Section, Dept. of Civil Aviation, Ikeja, Lagos.
5N2ERL	E. R. Langford, P. & T. Bauchi.
5N2HJA	H. J. Alcock, The Admin. Office, NMS, P & T HQ, PMB 2217, Lagos.
5N2JAD	J. A. Daly, The Niger Marine Co. Ltd., PO Box 50, Makurdi.
5N2JEB	J. E. Burrel, Nigerian Television Service, Lagos.
5N2JWB	J. W. A. Best, Dept. of Medicine, University College, Ibadan.
5N2PJF	P. J. Fawcett, Nigeria Police Regional HQ, Enugu.
5N2PLH	P. L. Hammett, 52A Okorodu Road, Yaba, Lagos.
9A1TAI	via W4VPD.
9G1DX	via W0EQN.
9X5US	Box 28, Kigali, Rwanda.

* * *

RSGB QSL Bureau: G2MI, Bromley, Kent.

For those looking for contacts with the North West Territories, G8TS recommends **VE3BFC/VE8,** active on 14,098 kc/s c.w. and 14,125 kc/s s.s.b. daily between 12.00 and 17.00.

CE0AC on Easter Island was recently heard in the London area by G3YF at 02.00 on 14 Mc/s c.w., but apparently no one else has been awake at this hour to make a contact.

From **China,** BY9SX, BY1PK and BY1CK have all been heard on 14 Mc/s c.w. working the Communist bloc countries. Also QRV on this band is UA1KED in Franz Josef Land.

Recently heard on 14 Mc/s c.w., **W4KKA/VS9** is located in the Maldive Is.

G8KS reports that part of the **VP2SY** log transcript is missing but that the situation will be remedied as soon as possible. S.a.s.e. or IRC please when requesting cards.

5N2JKO has recently acquired a Viceroy transmitter and is very active on the low end of the 14 Mc/s band using s.s.b.

TU2AU is now active on 14 Mc/s s.s.b., his home call being W8HMI. QSLs should go to F. R. Smith, c/o US Embassy, Abidjan, Ivory Coast.

The Greek Government has authorized the establishment of an Amateur Radio station for the 11th World Jamboree at Marathon, Greece, from August 1 to 11, 1963. The station will operate under the call-sign **SV1SV** and will transmit on 20m s.s.b. only, although there is a possibility of a.m. and c.w. operation on 40, 20 and 15m in addition. (G3BHK).

* * *

Information from numerous correspondents is gratefully acknowledged, as well as news items from the *DX'Press* (PA0FX), the West Gulf DX Club *Bulletin* (W5IGJ), the LIDXA *Bulletin* (W2MES), and *DX* (W4KVX). Please send all items to RSGB Headquarters to arrive not later than **August 9** for the September issue and **September 6** for the October issue.

RAEN Notes and News

By E. ARNOLD MATTHEWS, G3FZW *

IN common with other county branches, the Surrey branch of BRCS held an exhibition and fair at Shalford Park, Guildford on May 25, as part of their celebration of the centenary of the British Red Cross Society. The event was officially opened by G2DQU, perhaps better known as Brian Rix, and was strongly supported by the Surrey RAEN Group, whose members staged a live demonstration of mobile and portable equipment.

Throughout the day communication was maintained with mobiles in the exhibition and fixed stations at BRCS HQ at Guildford and County Police HQ at Mount Browne. During the afternoon the RAEN stand was visited by the Chief Constable of Surrey who showed particular interest in G3JEQ's mobile rig, through which he was put in touch with his own HQ. In addition to a number of SWL members the following took part in the display: G3VK (CC), G8SM, G2FM, G3JEQ, G3JIP, G3MFB, G3GVR, G3PRW, G3RPD and G5RS.

A fortnight previously the group had participated in the celebration exhibition held at the Croydon Divisional HQ, great interest being shown by visitors in G3JEQ's playback of a recording made of a simulated police call-out. Fixed station links were established with BRCS HQ at Guildford and Wimbledon using 160 and 2m, and Deputy CC G8SM made contact on 2m. During the afternoon G2FM/M, accompanied by G3ORE made contact with the exhibition station G3RCC from various outlying points. In addition to those mentioned, G3ORE, G3PJX, G3PRW and G5RS gave good service in operating the stations.

Around the Groups

From **Carlisle** AC G3MNL reports that the police are interested in the possibilities offered by RAEN and discussions are to be held with the officer in charge of traffic and communications. There are few amateurs in the district, but all those approached by G3MNL have expressed willingness to assist the Network.

Describing himself as "the new boy" in **Essex,** CC G3PFL says, "I was rather doubtful when G8TL passed away, if the same enthusiasm would be maintained, but I am pleased to say that all members are as keen as ever." This is no more than one expects!

The group continues its fortnightly net, which is always well supported, and on June 16 exercise "Redpoll" was held with Essex BRCS. The narrative of the exercise was that a series of unidentified explosions in the north of the county had caused severe damage and loss of communications to the south, and casualties were being evacuated to the south and south-east of the county. BRCS stations at Colchester, Grays, Stanford-le-Hope, Southend, Romford and Upminster were requested to provide assistance.

Operation was by means of the well-known Essex system of stationing mobiles at the BRCS HQ, and routing their messages through fixed relay stations, where necessary, to maintain contact with the county HQ station G3NYP. This was a short scheme lasting 1½ hours and all messages were transmitted within the time limit. Operators were G3RIP, G2ARN, G3KMD, G3JSV, G3OMB, G3RHO, G3MJS, G3KPJ, G3PED, G3PEV and G3PEN.

G6DN, **Manchester** AC, reports an exercise held on June 11, based on the story of an imaginary colliery disaster in the district. This scheme was in co-operation with Manchester Police and used a fixed station at their HQ, with mobiles at the incident and at various hospitals. Police patrols made contact with these stations and handed them prepared messages for transmission, 40 being disposed of in two hours. Operations were on 160m and it was demonstrated that this band afforded satisfactory communication throughout the police area. In all 15 RAEN members participated.

Surrey Group issues a *Newsletter* at suitable intervals, the pages being perforated so that copies can be conveniently filed in a small loose leaf ring binder. The latest issue contains details of a new scheme which has been adopted which will enable more practice surprise call-outs to be held. The need for accurate map reading is stressed and it has been agreed to use maps as often as possible in exercises.

Commencing a list of essential needs to be kept in vehicles for mobile operation the CC, G3VK itemises "two pencils." In these days of tape-recorded dictation he has perhaps forgotten the shorthand writer's dodge of sharpening them at both ends?

Personnel

J. W. Marlow, G2FT has resigned his appointment as Area Controller for Mablethorpe.

* 1 Shortbutts Lane, Lichfield, Staffs.

Mobile Column*

By C. R. PLANT, G5CP

THE **Derby and District Mobile Rally** is to be held on Sunday, August 18, at Rykneld School, Derby. The talk-in stations, G3ERD/A on Top Band and G3EEO/A on 144 Mc/s, will be in operation from 10 a.m. to 4 p.m.

The programme of events will begin at 2 p.m. and, as always, there will be something to interest everyone. The outstanding item of interest will probably be the monster junk sale, presided over by the indefatigable G3FGY. Also of interest will be field displays by the Fire Brigade, anti-theft and security devices by the Derby Police Department, a display of radio controlled model aircraft by the Derby Model Aircraft Society, a Judo display, food testing stands and a host of other attractions. The first prize in the grand sweep will be an electric dishwashing machine, and in addition to other useful prizes there will be a number of electric dry shavers. A brass band will provide music during the afternoon.

A competition in which all mobile operators will have equal chances of winning is also scheduled.

Admission will be free, there is ample room for parking, and in the event of bad weather indoor accommodation will be available. The RAC will signpost all main roads into Derby, and also minor roads to the school. The Derby rally is always excellent, and is well worth your support.

The **Lincoln Short Wave Club** is holding its annual Hamfest and Mobile Rally on Sunday, September 15, at the North Kesteven Grammar School, North Hykeham, three miles south of the centre of Lincoln on the A46. Talk-in stations G3MZB/A on 144 Mc/s and G4BU/A on Top Band, will open at 11 a.m., and the rally will commence at 1.30 p.m. An interesting programme has been arranged, with highlights consisting of a photoquiz, " Bertie Beacon " road safety entertainment for the juniors, a film and demonstration by the National Guide Dogs for the Blind, and a visit to the Guildhall, Lincoln.

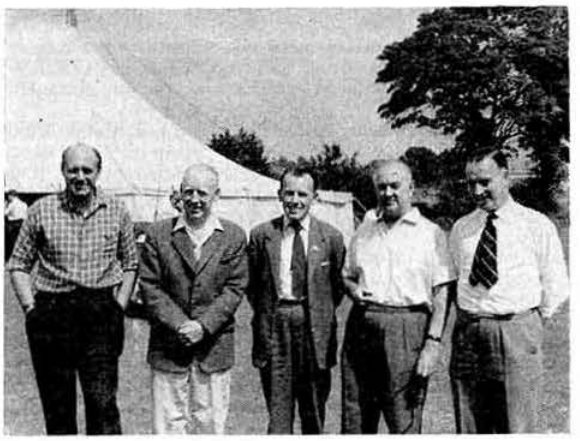
Refreshments will be available in the school canteen during the afternoon. The usual raffle will take place, and also a sale of surplus equipment. Lincoln has always been noted for the quality of the equipment offered, and the low prices. There will be plenty of parking space and should the weather be unfavourable, the school premises are spacious and comfortable. RAEN will hold a meeting on the same day. This has always been a rally well worth visiting, so make a note of the date and help to swell the crowd on September 15.

News from G3BID (London) gives additional information concerning the **International Mobile Rally** commemorating the Red Cross Centenary, to he held in Brussels, Belgium, on Sunday, September 22. Once again, arrangements have been made for the issue of temporary licences to foreign amateurs attending the rally. In Holland it will be possible for those who are reluctant to take their own cars abroad, to obtain permission to use portable transmitting equipment in a hired car. It is not clear whether this will be extended to Belgium.

A mobile licence to operate in Belgium from September 14 to 29 may be obtained by any licensed (mobile) amateur, provided an application, enclosing a fee of 100 Belgian francs and the following information and documents, are submitted to M. Rene Vanmuysen, 81 rue Joseph Baus, Wezembeek—Oppem BT, Belgium, before September 1. A statement to the effect that the operator is to visit the rally should be sent, together with a photocopy of his licence (this is not necessary if the applicant sent a copy for the Verviers rally), and the registration number of the car. Arrangements have also been made for similar facilities in Holland, and this, at the request of the Dutch authorities, will be comprised of a block application by the Amateur Radio Mobile Society, to whom enquiries should be addressed. The address of the Honorary Secretary is N. A. S. Fitch, G3FPK, 79 Murchison Road, London, E.10.

There will be a 144 Mc/s mobile D/F Contest (Fox Hunt) near Brussels on Sunday, September 15, and fortunately this period is covered by the temporary licence. The Dutch licensing authority has already intimated that it will consider an application for temporary mobile licences for a proposed mobile rally to be held in Holland in 1964.

A letter from the Radio Club at Whiteness Manor School for Crippled Boys announces that a Hamfest and Mobile Rally is to be held on September 14 at **Whiteness Manor, Kingsgate, Broadstairs,** Kent. The rally will be opened by G6NU at 2 p.m. This will be the first event of this nature to be organized by members of the Whiteness Radio Club, and we wish them every success with their new venture.



Among those at the Wolverhampton Amateur Radio Society's Mobile Rally on June 15, 1963, were (left to right) G8CK, G6UI, G3LDY, G6GR and G8RY.

(Photo by G5CP)

Rally Reports

The **Wolverhampton Amateur Radio Society Mobile Rally** was held on June 15, at the Hobson Sports Ground. The weather was ideal, and attracted 35 amateurs and their families. The talk-in stations were G3KMT/A on 144 Mc/s, and G8TA/A on Top Band, the latter being operated by G3PTO and G3JJR. Throughout the afternoon, a complete s.s.b. station, operated and built by G3JRL, gave demonstrations of contacts with many Mediterranean areas. An outstanding contact made by the 144 Mc/s base station was with GM3KXA/P on both phone and c.w. A large number of visitors from the nearby Sports Day meeting gathered to see the TV demonstrations given by G3KQJ/T, assisted by G3JDM. The 415 line picture was of excellent quality, as were the results from a 625 line unit, the equipment being loaned by Contactor Switchgear Ltd. The prize winner for the most comprehensive mobile installation was G3JEQ (Leatherhead), who also obtained the award for the farthest distance travelled. Second was G3DCF (London), with G5CP (Chesterfield) third. The prize for the safest mobile installation went to G8CK, and the reserve prize was awarded to G3RGD for an ingenious installation mounted

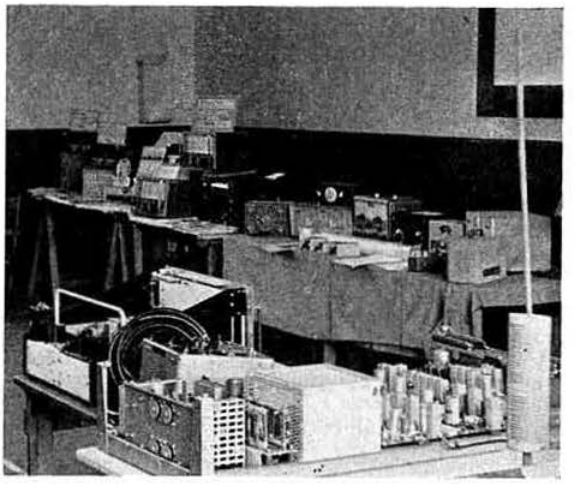
* Please send reports for the September issue to E. Arnold Matthews, G3FZW, 1 Shortbutts Lane, Lichfield, Staffordshire, to arrive by August 8.

on a scooter! A sweep in aid of the RAIBC raised the sum of £6; the prizes were a Joystick aerial (donated by Partridge Electronics Ltd.) won by G3RVA, a bottle of sherry by G6GR, a 19 set by G3AMX and an RF27 unit by G3GTW. The organizers are to be congratulated on a very successful and enjoyable rally.

The **Cornish Amateur Radio Exhibition and Mobile Rally** took place on June 15/16 after a period of uncertainty owing to the difficulty of arranging suitable accommodation. Despite the short notice a large number of amateurs and visitors attended. The amateur population of Cornwall is spread over a very wide area, but with the enthusiastic support and effort of a number of local club members, a representative display of home constructed equipment and commercial items was assembled. The local Meteorological Office provided a " Met " balloon, complete with transmitter, and the Marconi Marine International Company loaned several pieces of marine equipment. A number of Eddystone and Pye receivers were shown by Enners of Falmouth. An interesting display of radio equipment from over 40 years ago up to the present time attracted a great deal of attention.

The exhibition was in aid of the Cheshire Homes and the RAIBC, and the admission fee profits went to these worthy causes. Prizes were awarded to lucky-ticket holders, and the winners in the mobile competition were for the best commercial installation, G3ABB/M; the best home built set, G3GMN/M; the longest distance worked on Top Band, G3IWV/M; and the longest distance worked on 144 Mc/s, G3ABB/M. The special prize for the most original installation went to G3ICO/M who had a complete 144 Mc/s station in a Messerschmitt bubble car. An unusual feature, and one which may be commended, was the provision of a " companion " prize for the lady who accompanied each prize winner. She was awarded a piece of costume jewellery, which was a thoughtful gesture, and full marks must be given to the originator of the idea. Several raffles took place, one being in aid of the RAIBC. Two visits were arranged to the GPO Lands End Radio Station, and these were thoroughly enjoyed. An unexpected visitor was DJ6JN.

The **Longleat Rally**, organized by the City and County of **Bristol RSGB Group** was held on June 30, despite very bad weather. Rain did not stop the mobiles, however, and the count showed that 200 cars were present; a total of 171 licensed amateurs attended. Owing to an unforeseen hill climbing event, the normal entrance was closed, and the organizers wish to apologize to anyone who was inconvenienced. During the morning, all of the raffle tickets were sold, and once again apologies are extended to the latecomers who were disappointed as a result. In consolation, however, a promise has been made to increase the number at future meetings. In all, 64 prizes were distributed, totalling in value a figure close to £40. The lucky programme prizewinner was G2DMT, who received a clothes drier, and G2IK was runner-up with an electric razor. The children's treasure hunt was a great success, as was also the DX balloon race, when 240 balloons were released that all headed towards Scotland. Later, the 4 ft. diameter aerial balloon broke loose, with 132 ft. of copper braided nylon attached. If this should be recovered, please return it to G3JMY. The Concours D'Elegance was won by G3JEQ, the longest double journey by G3OMO (Hull), and the longest distance contact by G2CDN/M. Certificates were presented by G5UH, Region 9 Representative, and the lucky programme prizes by the Marquis of Bath. At about 4.30 p.m., the sun emerged, and thereafter the rally followed normal lines. The assembly included ZS1XM, VS1LK, LA5HE, F2BO and 5B4WD, who seemed surprised at the way British amateurs accepted the bad weather.



Some of the commercial equipment displayed at the Cornish Hamfest and Mobile Rally held in Penzance on June 16 ,1963.
(Photo by G3OJY)

Owing to a typhoid outbreak the **South Shields and District Amateur Radio Club** had to cancel the mobile rally scheduled for Sunday, July 7. Unfortunately, the decision was made too late for publication in the July issue of the BULLETIN. It is therefore hoped that no one made the trip to South Shields! We wish the club better luck at the flower show in Bents Park on August 9 to 11, when GB3SFS will be active, and also in County Durham next year.

Power Supply for Six-Volt Battery

There are still many cars in this country equipped with 6 volt batteries, particularly the French and German models. The owners of such vehicles are at a disadvantage because many mobile designs are based on the more popular 12 volt system. Recently, **G3ESR** (Saxilby, Lincs.) received information from DJ4QD, describing the construction of a transistorized power supply designed specifically for a 6 volt supply. Fig. 1 shows a circuit diagram of this unit which provides an output of about 25 watts, although this figure could be doubled by the substitution of transistors of higher rating. If either a higher or lower voltage output is required, it is only necessary to vary the number of turns on the secondary winding of the transformer. A check on the

RSGB NATIONAL MOBILE RALLY

Woburn Abbey, Bletchley, Buckinghamshire

(by permission of His Grace the Duke of Bedford)

SUNDAY, SEPTEMBER 22, 1963

* Park opens 11 a.m.
* State Apartments open.
* More than 3,000 acres and 2,000 animals.
* Children's Playground, Pets' Corner and Boating Lake.
* Restaurants and Snack Bars.
* Specially reserved rally car parks.

TALK-IN STATION
GB3RS on 2 and 160 metres

Organized by the RSGB Mobile Committee

power output should not be omitted, of course, in order to prevent overloading of the transistors.

The principle of the unit is conventional: the output from a square wave generator, operating from the power input, is applied to a step-up transformer primary. The secondary is connected to a voltage doubler employing silicon rectifiers, and the output subsequently smoothed to produce a clean d.c. supply. Should the unit fail to oscillate when first connected to the supply, the most likely cause is incorrect connections to the bases of the transistors. Changing over the connections should immediately cure the fault. The transformer windings are bifilar wound, the core in the prototype being a Permenorm 5000Z, manufactured by V.A.C., Vacuunschmelze, Hanau/Main, Germany, although suitable toroids should be available in this country. Radiospares REC51 rectifiers were originally used, but any silicon diodes of adequate rating and reputable make should be suitable. To realize optimum performance, variation of the resistance ratio of the base potential divider may be necessary, as the resistances listed were intended for the OC35 transistors specified. Adequate heat sinks must be used to dissipate heat developed by the transistors.

Operating Notes

G3LHA and **G3KEF** (Coventry) operated mobile on 144 Mc/s during a visit to the Christchurch area from June 1 to 8. Activity was at first very low, but later G3NAE, G3ION and G3MDH were worked, and this provided an introduction for other stations to come on the air. Personal contacts were made with G3NAE and G3ION, while the latter was visiting a /P site in Dorset. The outstanding contact was with G3PTH (Solihull) from the New Forest. The impression formed by G3LHA and G3KEF was that most 144 Mc/s operators in the south and on the Isle of Wight appear to have very similar sites, for no outstanding locations were seen, and on this assumption everyone should have equal chances for DX when it appears.

A welcome report from **G5DW** (Ashcott, Somerset) describes a new 144 Mc/s mobile installation. The transmitter consists of a 12AT7 double-doubler from 12 Mc/s to 48 Mc/s, and a QQV02/6 tripler to 144 Mc/s, which gives 5 watts r.f. output. The modulator is entirely transistorized,

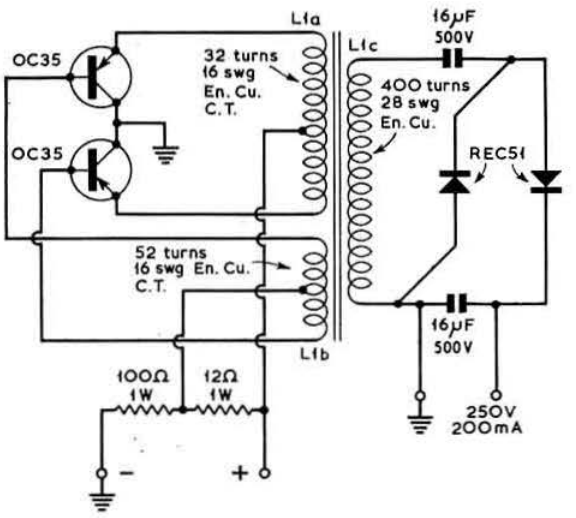


Fig 1. Circuit diagram of a transistorized d.c.-to-d.c. converter for use with a 6 volt battery.

MOBILE RALLIES 1963

August 11	Torbay ARS Mobile Rally, Naval College Dartmouth.
August 18	Derby Radio Societies Mobile Rally, Rykneld School, Derby.
August 25	Reading ARC Mobile Rally, Pangbourne, Berks.
September 1	Port Talbot Radio Club Bucket and Spade Party, Newton Institute, Porthcawl.
September 8	Thames Valley Amateur Radio Transmitters' Society Mobile Rally.
September 14	Whiteness Radio Club, Hamfest and Mobile Rally, Whiteness Manor, Kingsgate, Broadstairs, Kent.
September 15	Lincoln Hamfest and Mobile Rally, Kesteven Grammar School, North Hykeham, Lincoln.
September 22	RSGB Woburn Abbey Mobile Rally.
September 22	International Red Cross Centenary Mobile Rally, Brussels, Belgium.

terminating in a pair of OC16s. The receiver is also a transistorized unit, with two AFZ12 r.f. stages, OC171 mixer, OC171 oscillator, and three i.f. stages using ceramic transfilters. It was found impossible to miniaturize the apparatus sufficiently to enable the receiver to fit into the radio compartment in his Sunbeam Rapier, and so G5DW has purchased a TW mobile receiver, which allows the complete station to fit snugly away, and thus not affect the amenities of the car. The dipole aerial is mounted on a chrome pillar fitted to the sun-visor above the windscreen.

G3OHC (Birmingham) is operating mobile on 144 Mc/s using a Hamobile Mk. II with 20 watts feeding a halo. Recently, whilst demonstrating the rig to a friend during a trip to the Lickey Hills, contact was established with G6GN, GW3LJP, G3JXN and G3PNA. When this report is published, he should have been touring Wales for some time, and will probably continue operation into August, covering several rare counties during the period.

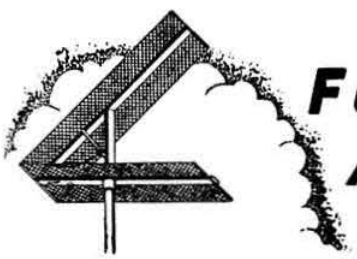
G5CP (Chesterfield) recently acquired a Volkeswagen, and was faced with the formidable task of fitting mobile equipment into rather a restricted space. A solution was found when the large 12 volt battery and all ancillary equipment was banished to the boot, and the transmitter and converter hung under the dashboard. The first call on 3·5 Mc/s raised G3ESR (Saxilby, Lincs.), GM3JFJ (Glasgow), and a listener report from Belfast. The equipment covers all bands from 3·5 to 28 Mc/s, and has been used to work WAC/M.

G3PLB (London) informs us that he and G3PLF are both active on Top Band with a new transmitter having the following line-up: EF91 v.f.o., EL91 buffer, and a 5763 p.a. The modulator is an EF91 into a single EL84. The receiver is a TW Topmobile, and the aerial is a 7 ft. 6 in. base loaded whip. By the time that this appears in print they will have been on a trip to North Wales, no doubt having had many contacts whilst in that part of Britain.

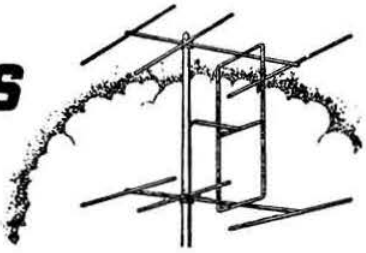
Fred Judd, **G2BCX/M** reports that he has made a recording with Jack Warner and Coco the Clown, in the interests of road safety. The proceeds from the sale of the recordings will be donated to various charities. Fred Judd will appear on BBC and Independent television, in connection with the record during the first week in August. Safety on the road directly concerns all mobile amateurs, and this enterprise deserves our support.

It is understood from G3LXP/P that a number of /M and

(Continued on page 122)



FOUR METRES AND DOWN



By F. G. LAMBETH, G2AIW *

THE Second 144 Mc/s Portable Contest held on July 6-7 attracted reasonable attention, but the now common story of variable, generally poor conditions prevailed. In these circumstances, the best review is simply a perusal of the views and experiences of a few participants.

Some of the **claimed scores** are G3PIA/P 12,100 points, G3LIT/P 12,147, G5ZT/P 7651, GM6XW/P 3585, GW3JGA/P 6261, GW3RUF/P 9073, G3FD/P 7818, and G3CGQ/P 7276.

G3OCB (Stithians, Truro) found conditions very poor with all signals from distances greater than 150 miles quite weak and subject to fading. He was portable from two sites, one near Falmouth (540 ft. a.s.l.) in the morning and another near Redruth (771 ft. a.s.l.) for two hours in the afternoon. The morning proved better, with G3MDH/P, GW4LU/P, GW3MFY/P, G3MAR/P, G3KMP/P and GW8UH/P called, and GW3PWH/P worked. After lunch, a spell from 15.00/17.30 GMT only realized contacts with G3OXD/P and GW2HIY/P, with occasional readable signals from G2JF and other c.w. portables. Reports exchanged, however, indicated that the new mobile rig was functioning well and that most of the faults had finally been eliminated. G5ZT/P was heard going well all day, and it appears from his results that G3OCB's trouble arose from the absence of a definite refracting layer, the high Tors of Dartmoor forming very severe attenuators (G5ZT/P was apparently hearing ON stations).

G3EMU/P was active in the contest, with the usual help from G3LCK, but it was a complete failure for them this time. Although PA and ON were worked and good reports received, they could not settle down owing to an uneasy feeling that something was amiss. The beam was taken down twice, and found to be in good order, but they went QRT after 14 contacts and are still very puzzled. G3EMU is very much in favour of the Portable Contest being of one day duration, as the all night events are becoming a little too strenuous. G3EMU was very pleased to hear GB3VHF again, as he finds it very useful for aligning his converters, of which there will soon be a new one.

G2BJY (Walsall) found, on the contrary, that the portable contest was quite a success, despite rather poor conditions. Some of the semi-local portables were at enormous strength but 100 miles was apparently the limit for consistent working. Little was heard from the London direction, but G3JXN/P was good at times. G3EVV (Kent) and G3OBD/P (Dorset) were excellent, and Bristol and district were well represented, with G5TN/P (Blagdon, Somerset) outstanding. Little was heard from the south coast stations. G2YU/P (Norfolk) provided the first QSO from that county. He radiated a good signal at times, but was interfered with by local stations working outside their zones—a practice which is steadily growing worse and should cease. This can perhaps be excused with portable stations, but for fixed stations, of which there were several heard, this is unforgiveable in the opinion of G2BJY. Nothing was heard from the north apart from G5YV who was well below his usual strength.

G3LTF (Galleywood), with **G3LIT** and **G3JMA** operated G3LIT/P from a site near Harlow. In all, 106 stations were worked, including about 12 Europeans from F, PA and ON. The best QSOs were with F8VN, PA0EZ and G3ILD. EI2A was heard and frantically called during the last minutes of the contest. On July 4, F8VN was worked and several stations in the Paris area were heard. G3LTF found the fact interesting that he could hear DL3YBA on his skeds with G2JF.

G3FD/P, with G3FD, B.R.S.20533, and A.2965 participated in the contest on July 7, and after some difficulties, which included a change of site, started operation an hour late. They worked a fair proportion of the Continental DX including ON4LQ/A (248 miles), ON4ZN/P (south east of Antwerp), and EI2A, who was heard but not worked. Seven GWs were worked and the best English contact was G5ZT/P (near Okehampton). The site was 4m south west of Daventry. A peculiarity was that hardly any London area stations were heard or worked.

B.R.S.21476 (Shrewsbury), having completed a new 417A-6AJ4 cascode crystal controlled converter, and spent several hours working on the front-end with a noise generator, found the RSGB 145 Mc/s Portable Contest on July 7 an excellent opportunity for testing the unit. Conditions do not appear to have been very bright, but 19 stations were heard during the Sunday morning. No DX was heard, although others had more success, as GI3GXP was called by one station and an ON by another. Operators heard, however, seemed to agree that the conditions were only fair. Nothing was heard by B.R.S.21476 beyond a distance of about 60 miles.

G3LHA/P was out for the Second 144 Mc/s Portable Contest on July 7 at a site east of Rugby at 720 ft. a.s.l. The weather was quite good for most of the day with propagation conditions variable, though definitely better than during the contest in May. Much DX was heard and worked. The gear was operated single-handed throughout most of the contest, but welcome visitors to the site were G3PGR (Rugby) who raised the aerial to 28 ft.; G3KEF (Coventry) who brought refreshments at a vital time (also a spare generator and battery when the original one packed up). G3FD/P was also a visitor just after G3LHA's arrival, and was just "pipped" to the site, but after a friendly chat alternative sites were suggested and G3FD/P was heard putting out a good signal later on. To sum up, 90 stations were worked including 53 portables in 37 counties. The best QSOs were with EI2A (242 miles, Co. Meath), GI3GXP

*21 Bridge Way, Whitton, Twickenham, Middlesex. Please send all reports for the **September** issue to arrive by **August 9** and for the **October** issue by **September 6**.

G3AEX/P operating from a point on the Purbeck Hills overlooking Poole Harbour in Dorset, 400 ft. a.s.l. A total of 32 different stations including three portables and two mobiles in 12 counties were worked in 12 hours operation during the week ending June 30. Among the more distant stations worked were GC2FZC, G2JF, G3MCS and G3JMA. The gear consisted of a QV04-7 p.a. running at 10 watts input, modulated by an ELL80 driven by a double button carbon microphone. The receiver was a simple single superhet with a 6AK5 front-end and 5 Mc/s i.f.

(238 miles, Co. Down), G3KHU/P (172 miles, Ashburton, Devon), G5ZT/P (175 miles, Okehampton, Devon), GW2HIY/P (162 miles, 6 m, n.n.e. Holyhead), G3ILD (160 miles, 6 m, north Darlington.) Among the DX called, but not worked was ON4XD/P.

G3JGJ (near Newton Abbot) heard many stations on July 7, but only worked three: G3KHU/P (Hay Tor, 59+), G5ZT/P (59+) and GC2FZC. Others heard included GW8UH/P (59+), GW5BI, Cardiff (59+), GW3RUF/P, GW3PWH/P, GW3IB/P and some of the Cornish and Southern stations. On July 8 G3EGV was heard calling G3XC who was 59+. G3IGV was also heard, with GB3CTC RST559.

Forthcoming Activity

GM3IUB/P (The University of Birmingham Radio Society) will be active again this year, from August 31 to September 8. Provided equipment is ready in time, there will be operation on both 2m and 70cm from six counties in Scotland: Roxburgh, Lanarkshire, Dumfries, Kirkcudbright, Wigtownshire and Ayrshire (terrain permitting). G3OAD would like anyone who requires skeds to send a stamped addressed envelope to him as soon as possible, stating the preferred times and bands, the dates on which he *cannot* appear, and the frequency he intends to use. It would be helpful if as many operators as possible would ask for skeds between 15.00 to 17.00 GMT to relieve pressure on the evening session.

GB2GC will operate from the Channel Islands on the following dates: August 9-11—Sark; August 13-15—Alderney; August 17-21—Jersey. The frequency used will be 144·2 Mc/s. Operation will be mainly c.w., but phone will be used if conditions are good. C.w. will be used on 160m during the same period. If anyone wishes to make a last minute sked they should telephone G3OUF after 7 p.m., on Perivale 7210.

The EDR Annual Scandinavian V.H.F. Day is scheduled for August 17 and 18. The times of operation will be as follows:

2m: Saturday 20.00-24.00, Sunday 09.00-12.00 and 13.00-16.00 GMT.

70cm: Saturday 19.00-20.00, Sunday 00.00-01.00, 08.00-09.00 and 16.00-17.00 GMT.

This contest is not open to amateurs outside Scandinavia, but Scandinavian contestants may include contacts with non-Scandinavian stations in their scores (from OZ5MK via G3HRH).

G3RPY and **G3NJF** will be operating portable as GM3NJF/P on 2, 4 and also 160m in various Scottish counties between August 17 and 24. This period of activity will be during their holiday, and no fixed route will be adhered to, although transmission will generally be in the mornings and evenings. The frequencies will be 145·72, 145·63 and 145·54 Mc/s (no crystals being available for the Scottish zone) and 70·29 Mc/s.

G2DHV/P will be operating in Lincolnshire on 145·25 Mc/s from August 17 to 24.

Scandinavian Journey

V.H.F. Managers and observers from 15 member societies in Region 1 of the IARU gathered in Malmö, in the southern part of Sweden (SM7) over the period June 10-15, 1963, as delegates representing their respective societies at the triennial Region 1 Conference. Hosts were the Swedish society SSA, and, during the several days of Committee meetings in a large and very modern hotel, a considerable number of matters affecting v.h.f./u.h.f. activity in Region 1 were thrashed out to a satisfactory conclusion. A full report on the decisions reached will be published in due course, but it is sufficient to say at this stage that the views of the RSGB were met on all important points.

Our own V.H.F. Manager, Ray Hills, G3HRH, was able to spend a few days in Copenhagen on his way to the Conference, and was able to meet several OZ v.h.f. operators through the kindness of OZ5MK, V.H.F. Manager for EDR. The trip included a visit to the Danish beacon station OZ7IGY, which has been in operation for over five years, and was in fact the first amateur v.h.f. beacon in Europe. Set up originally as part of the IGY programme, the 144 Mc/s and 432 Mc/s transmitters are located at the top of a cement storage silo just over 100 ft. high in the South Eastern suburbs of Copenhagen. The aerials are clamped to a handrail about 10 ft. above the actual transmitter cabinet, and comprise a single bay clover-leaf on 144 Mc/s and a two stack clover leaf on 432 Mc/s. Both these aerials have nearly omni-directional polar diagrams but frequent reports of reception of the 144 Mc/s signals are received from as far away as

V.H.F./U.H.F. BEACON STATIONS

Call-sign	Location	Nominal Frequency	Emission	Aerial Direction
GB3CTC	Redruth, Cornwall	144.10 Mc/s	A1	North-East
GB3VHF	Wrotham, Kent	144.50 Mc/s	A1	North-West
GB3GEC	Hammersmith, London	431.5 Mc/s	A1	East

RSGB V.H.F. BEACON STATION GB3VHF

The frequency of the Society's v.h.f. beacon transmitter when measured by the BBC Frequency Checking Station was as follows (nominal frequency 144.50 Mc/s).

Date	Time	Error
June 18, 1963†	14.06 GMT	400 c/s low
June 25, 1963†	11.15 GMT	345 c/s low
July 2, 1963†	17.45 GMT	350 c/s low
July 9, 1963*	10.53 GMT	600 c/s low
July 16, 1963*	16.29 GMT	490 c/s high

† Shooters Hill, South-East London.
* Wrotham, Kent.

Hamburg. The two transmitters, using respectively a QQV06/40 p.a. and a QQV03/20 tripler p.a. are housed in an enclosed steel box, but despite this, the whole equipment is covered in a heavy layer of cement dust. However, as far as can be determined, this does not seem to have any adverse effects upon the reliability or signal level radiated! Both transmitters are keyed by a rotary wheel type keyer originally belonging to the Wehrmacht.

G3HRH also visted the home of OZ7BR, who was at the National Convention in Cambridge in 1960, and is the only active v.h.f. s.s.b. station in Denmark. He is located in Lyngby, some 18 km north of the centre of Copenhagen, in a delightful residential suburb. The same evening, a visit was paid to OZ9AC on the island of Amager, close to Kastrup International Airport, and some 20 km South East from Copenhagen. Kej was the first OZ to contact the UK on 70 cm, when he worked G3JMA last December—this despite a QTH virtually at sea level, and a simple long Yagi aerial at about 30 ft., together with a transmitter using a QQV03/20A p.a. His 70 cm converter in use for that QSO utilized lumped components, but a complete 2m/70cm receiver has now been constructed for home and portable use. This receiver uses a trough line r.f. stage.

G3HRH concluded his visit to Denmark with a trip on Saturday afternoon and evening to the Field Day site of OZ5MK. This is located at the Northern end of Zealand, close to the Kattegat, near a village called Vejby. The site is one of the highest spots in Northern Zealand, and OZ5MK has the use of an old "Gee" station, including a 225ft tower, which is now surmounted by a 6 element Yagi, on a commercial rotator. A helical membrane low-loss feeder (left behind by the previous user) runs down to the 50 watt transmitter which is permanently housed in the old buildings. Altogether a very fortunate arrangement, and one in which OZ5MK is to be envied.

During the Conference week in Malmö, several prominent Swedish v.h.f. men were in attendance, including SM7BAE, SM7BE, SM7BTT (who used to be in SM5), and on Wednesday evening a visit was made to SM7BCX, located very close to the southern tip of Sweden, near Trelleborg. The party included V.H.F. Managers from G, PA, YU, HB, OH and ON. As it coincided with an opening to the Low Countries, the evening rapidly developed into a rather severe form of babel, underneath which SM7BCX's XYL (who spoke only Swedish) not only survived, but was able to provide an inexhaustible supply of Swedish coffee and pastries right into the small hours. The rig at SM7BCX is a pair of 4-125A running at 500 watts input, to a long Yagi aerial at about 30 ft. The receiver is completely home built, with a cascode front end.

Altogether, G3HRH had the opportunity to see a very good cross section of Scandinavian v.h.f. activity, and is of the opinion that, while the density of operation may be less than in the UK, they lack nothing in enthusiasm or technical skill.

RSGB V.H.F. Beacon Station

With effect from July 5, 1963, the Society's beacon station, GB3VHF, on 144·5 Mc/s has been operating from its permanent site at the BBC station at Wrotham, Kent. The temporary beacon station at Shooters Hill, London, which had been in operation since the fault occurred in the aerial system at Wrotham, was closed down on July 3, 1963.

Nuvistor Converter for 144 Mc/s

G3JON has recently built a version of the G3FZL/G3IIR 144 Mc/s converter (described in the October, 1962 issue of the BULLETIN) for use with a tunable i.f. of approximately 28-30 Mc/s. The inductor details are as follows: L9 (19·350 Mc/s), 20 turns 28 s.w.g., ¼ in. diam.; L8 (58·050 Mc/s), 8 turns, 16 s.w.g. enamel wound on $\frac{7}{16}$ in. mandrel, air spaced; L7 (116·1 Mc/s), 3 turns 16 s.w.g. enamel wound on $\frac{7}{16}$ in. mandrel, air spaced; L5 (i.f. coil), 18 turns, 28 s.w.g. on ¼ in. diam. former without a 22 pF capacitor. The crystal should be 6450 kc/s.

September 7-8, 1963

V.H.F. NATIONAL FIELD DAY

For rules, see page 373, January 1963

REGION I IARU V.H.F. CONTEST

For rules, see page 138.

Two Metre News and Views

G5CP (near Chesterfield) has recommenced operation on the band, and recently worked GM3KXA/P (near Berwick-on-Tweed), and DL1RX on the key. The frequency in use is 145·56 Mc/s, with 25 watts to a 4-over-4 Yagi 850 ft. a.s.l. at the hill station two miles from home.

G3CCA (Oadby, Leics.) says that the PERA Laboratory had an open day on May 30, when G3CCA/A went into action to demonstrate low noise equipment. Many QSOs were made with Midland and Yorkshire stations while several amateurs in the surrounding area and from as far south as Swindon visited the establishment and inspected the station. After a personal QSO with G3RND (Pontefract) in Oadby at Whitsun, a regular sked was arranged and is now in operation every Wednesday from 20.00 to 20.15 GMT. The object is to exchange and record conditions over the northern path from Leicester, which is always a difficult feat. G3CKQ (Leicester) is greatly assisting in the experiments and is carrying out observations over the same path. Notes are compared during regular skeds every Monday, Wednesday and Friday at 20.15 GMT.

A.3016 (Lowestoft) enjoyed a very satisfactory listening session during June 6-7, when conditions were good to the east and south, and the following stations were heard: G3LTF, G3RK, G3RRA, G3PDG, G3JMA, G3KEQ, G6AB, G4HQ, G3NES, G3IIT, G5BQ, G3NPF, G3FLR, ON4MW and PA0COB. On June 9, 10 and 11, conditions were still good and stations heard included G3LBG, G3KMP, G3EMU, PA0JSK, PA0NG, DL9XW, DL9PC, OZ3JD, OZ5HF, OZ7WA, OZ5FK and OZ5AB. The receiver used is a Nuvistor converter (6DS4) into a CR100/2. The aerial is a 4-over-4 slot fed beam. Although the QTH is only 25 ft. a.s.l., 16 counties and five countries have been heard. Local 2m stations logged include G3JMU, G3JMX, G3HPR, G2FXR, and G3RXF (the latter is the most easterly UK amateur radio station).

G3OCB (Stithians, Truro) has experienced another month of very poor conditions. The fine weather of early June brought few openings, although G3BA was heard very well on two successive evenings. N.b.f.m. was stronger, but not easy to read, owing to the high selectivity of the home receiver, but G3BA's s.s.b. was excellent. Return calls on s.s.b. brought no response. The only other distant stations worked were G6GN, G3KHA, G3MTG, G2BHN, G3GYQ and G3EGV, with G3MPS and G3MVA called on several occasions. Local activity is still variable, with G3OJY, G3XC, G3IGV, G3CZZ, G3EKM and G3OCB all on from Cornwall. Devon produces activity from G5ZT, G3LMG, G6XD, G3KHU and G2DOT. G3OCB is active on s.s.b. (144·08 Mc/s) nearly every evening with 150 to 200 watts p.e.p. and an 8-over-8 beam aerial looking particularly for other s.s.b. QSOs.

G5YV (Morley, Leeds) has succeeded, after about a

dozen skeds over the past two years, in making contact with **HG5KBP** (Budapest). This was achieved at 05.35 GMT on June 29, and makes G5YV's twentieth country on 2m. At the time of this QSO the high power rig (750 watts input) was not in use, the driver stage only (a QQV06/40A at 90 watts input) being employed. HG5KBP was using 150 watts to a QQV06/40A, and as signals were up to S8 or S9 at times, it suggests that meteor scatter QSOs can be made with medium powers, in spite of the general idea that 1 kW or so is needed. Conditions otherwise in the Yorkshire area have been well down on last year so far, except for a short spell of EDX just after Easter. This makes the MS success all the more pleasing.

G3LTF requires MS skeds for the Perseids period in August. **G3HBW** has skeds with HG5KBP (Budapest) and UA1DZ (Leningrad). We hope that they will be successful, for such zeal deserves reward.

Four Metre News

B.R.S.21476 (Shrewsbury) is working on this band only at present and has heard the following stations in recent weeks: G3PJK (Manchester), G5JU (Birmingham) (c.w.), G3IUD (Wilmslow), G3EHY (Banwell), G3JIJ (Rochdale), G3PLX (Liverpool), G3AYT/P, and EI2W (Dublin). During the contest weekend, June 15-16, EI2W was heard for the first time on the Saturday evening, in QSO with G3AYT/P. EI2W was RS57 on an indoor dipole. The converter is a crystal controlled cascode into a home-built double conversion superhet.

G5CP (near Chesterfield) will be returning to 4m again (70·3 Mc/s) and will be pleased to have any reports. The input will be 25 watts.

A.3016 is listening on this band with a modified RF26 into an R1155 at 7 Mc/s.

The following is a list of the highest claimed scores in the **70 Mc/s Contest** held on June 15 and 16, 1963.

1. G3PIA/P	6109 points	6. G8PD/A	4315 points
2. EI2W	5569 points	7. G3KEU/P	3268 points
3. G3AYT/P	4878 points	8. G3PJK	3007 points
4. G3PYE/P	4624 points	9. G3NDF	2967 points
5. G3OJE/P	4404 points	10. G2AIH	2803 points

Bristol Technical College, G5FS/T

Test transmissions of pictures have been taking place recently from G5FS/T on 432 Mc/s. The transmitter, constructed by members of the Bristol Technical College staff, comprises a 12AT7 crystal oscillator and tripler, 5763 as second tripler, 5763 doubler driving an 832 on 144 Mc/s, followed by a QQV03/20A as tripler to 432 Mc/s driving a QQV06/40A to 40 watts input as a straight amplifier. The camera output feeds into an EF80 driving an EL84 which is used to grid modulate the final r.f. amplifier.

The aerial is a three element Yagi which will shortly be replaced by a rotatable 12 element array.

Reception tests have been carried out by one of the students, Roger Powell, G3RUJ, and excellent pictures have been obtained at a distance of several miles.

The receiver operates from a 6-over-6 Yagi array, feeding into a 70cm converter. This comprises an A.2521 r.f. amplifier, crystal mixer and 6J6 oscillator giving an i.f. of 45 Mc/s to an EF80 i.f. amplifier. This feeds into a normal television receiver as transmissions from G5FS/T at present are on 405 lines with positive modulation.

Transmissions will recommence when the College opens in September and reports will be welcome. In particular co-operation from technical colleges in the West Country and in South Wales will be appreciated.

LONDON U.H.F. GROUP

will meet at the

BULL AND MOUTH TAVERN

corner of Bloomsbury Way and
Bury Place, London, W.C.1,

at 7.30 p.m. on Thursday, September 5, 1963

All v.h.f. and u.h.f. enthusiasts welcome

NOTE THE NEW VENUE!

432-434 Mc/s ACTIVITY NIGHT
SATURDAYS at 7 p.m.

See You Saturdays, at Seven, on "Seventy"

It must be seven or eight years ago that G5KG and G5UM discussed over the air ways and means of stimulating activity on the then sparsely populated 2m band. From their discussions emerged the suggestion to make Monday Night Activity Night. And Monday still seems to be the busiest night of the week, even though the need to promote special activity grew less urgent as "Two" became so popular. The Monday Habit has stuck!

On 70cm the tale is a very different one. What little activity there is to be heard in the London region is largely devoted to crossband working to 23cm—a most laudable form of operation in the interests of the latter band of course. But random QSOs on 70 of the sort common on 2 are few and far between. This, observes G5UM, is a great pity in view of the fact that the band is there to be used, but conceivably won't be if we don't take more notice of it.

He reminds readers that for some years past Saturday Night at 7 p.m. has been the recognized activity period where 430 Mc/s is concerned, and urges all who are equipped for the band to show up then. On a local basis he looks forward to the time when it will be possible to start a spot frequency net on similar lines to the very successful Mid Herts Net on 2m. The latter operates on 145·1 Mc/s. The equivalent channel on 70cm would be 433·1 Mc/s, remembering that 70cm is band-planned over the 2 Mc/s range 432 to 434 Mc/s in just the same way that 144 to 146 is planned.

So to all u.h.f. operators this column urges "come up on Seventy on Saturdays at seven—and conform to the band-plan so that you will be easy to find."

Seventy Centimetres

G3LTF (Galleywood) worked PA0EZ (Nijmegen) on June 15 (240 miles).

G5QA (near Exeter) is still concentrating on 70cm, and is having much success on the band. Apart from the "local" skeds with GW3ATM (80 miles) and G3OYM (84 miles), the regular sked with G3KFD (Staffordshire) at 185 miles still continues.

Twenty-three Centimetres

G3LTF (Galleywood) worked G2WJ crossband (2m-23cm) on June 20. G3LTF was on 23cm with a 2C39A flat plate tripler. The distance was about 16 miles, but G3LTF's signal was also heard by G3LQR (Dedham, near Colchester) at about 30 miles. The report was RST579; it was the first 23cm signal to be heard by G3LQR.

On June 22, G3JMA, G3MCS, G3LTF, G3LIT, and an SWL operated G3LTF/A from a water tower in South Herts. The site was about 400 ft. a.s.l., and the tower 120 ft. high. All the equipment for 2m, 70cm and 23cm had to be

hoisted up the side of the tower on a rope, and was run from 240 volt a.c. The main emphasis here was on 23cm working as conditions were very unkind, and 2m appeared sub-normal. The 23cm gear comprised a 2C39A tripler, which gave 10 watts before going u.s., and a DET22 tripler, which produced about ½ watt output, but nevertheless it proved valuable. The receiver on 23cm was a 1N23E crystal mixer trough line, followed by a low noise i.f. amp. at 14 Mc/s. The aerial was a 4 ft. parabola fed by a dipole and disc reflector. Stations worked were G3FP, G2FCA, G2RD/P (Reigate and Oxfordshire), G3GDR, G8AL, G2WJ and G5DT. G3NOX/T was also heard. Unsuccessful tests were made with G3HBW/P (near Great Malvern) and G3KPT/A (near Birmingham), but a good time was had by all.

G3HBW informs us that he had two QSOs on the same day with G3KPT/A (Rowley Regis) and G3KPD (Kingswinford, Staffs.): both very strong signals. G3HBW/P was located on the Worcestershire Beacon, 1400 ft. a.s.l. near Great Malvern. Tests with G2RD/P at 105 miles were unsuccessful, and in that direction in fact, the band was apparently very lifeless.

G2RD (Wallington) went portable to Reigate Hill on June 22 and worked G3FP (11 miles), G3GDR (33), G3LTF/A (30), G2FCA (25) and was heard by G5DT. On June 23, again portable, this time from the Cotswolds near Watlington, Oxon, successful QSOs were made with G3FP (42 miles), G3LTF/A (32) and G3MPS (25). The latter QSO was especially interesting in that although G3MPS has had a 23cm converter and transmitter for two years he had never previously been able to hear or work anyone. After that, to have a first contact over 25 miles must be very rewarding indeed.

London U.H.F. Group

Commencing on September 5, meetings of the London U.H.F. Group will be held at the Bull and Mouth Tavern, Bloomsbury Way, London, W.C.1. The Bull and Mouth is on the corner of Bloomsbury Way and Bury Place, about mid-way between the previous meeting place, the Whitehall Hotel, and the Kingsley Hotel, venue of the annual V.H.F. Convention.

The Group's winter programme will commence on September 5 and it is hoped that as many v.h.f. and u.h.f. enthusiasts as possible will make a point of attending.

QRA Locator

Arising out of a decision made at the recent IARU Conference at Malmö in June, the QRA Locator system is to be rationalized by the addition of the letter "J" to represent the centre square of the final sub-division. Thus all QRA Locators will consist of five characters in future. Intending entrants in the September Region I IARU Contest are particularly reminded of the necessity to exchange full QRA Locators as described above, in order not to be penalized for incomplete contest exchanges.

EME Tests

From W1HDQ of ARRL HQ it is learnt that K1HMU and W1ZIG have a much improved aerial system and are ready for EME tests. The operating frequency is as close as possible to 144·0 Mc/s.

They are anxious to make skeds with any properly equipped stations in Europe. Those interested are asked to cable or write by air mail to W1ZIG, ARRL HQ, 225 Main Street, Newington 11, Conn., USA.

FIRST S/G CONTACT ON 1296 MC/S.

At 21.10 GMT on July 31, 1963, F8MX/A (St. Valery) worked G5NF (Farnham, Surrey) for the first two-way cross-channel phone contact on 1296 Mc/s. G5NF was using equipment constructed by G3MPS. Congratulations to F8MX, G3MPS and G5NF on a very fine effort. Full story next month.

HB1ADT appears on 144 Mc/s

On the evening of July 28, HB1ADT on Mont Tendre in the Jura Mountains made an unexpected appearance on approximately 144.96 Mc/s from a site about midway between Geneva and Berne at approximately 5,500 ft. a.s.l.

HB1ADT worked many Gs but it is believed none north of G2CIW (Birmingham) and G3FUR (Stamford). GW3MFY, G6NB, G3HRH and stations in the Southampton area were among those to make contact.

Signals from HB1ADT were reported to be of tremendous strength. Conditions at the time were above average, particularly in the direction north west—south east.

W. L. (Roy) Hall, Jr., WA2TGC, 11 Pine Street, Oneonta, Otsego County, N.Y., USA would like to correspond with British v.h.f. enthusiasts.

Mobile Column (Continued from page 117)

/P operators on holiday in **Cornwall** call at 12 noon and 6 p.m. daily on Top Band. If there is no response to these signals, they change to 80m and call again 15 minutes later. G3OJY, however, points out that the majority of Cornish amateurs do not finish work early enough to be available at 6 and 6.15 p.m. He suggests therefore that calls should be made at 7.30 and 7.45 p.m. respectively.

An interesting and informative book on *Radio Interference Suppression*, published by Bosch Ltd., contains detailed information covering interference suppression for various cars, together with a general section on both m.w. and v.h.f. mobile reception. Also described is a comprehensive array of suppression accessories. This handbook—reference No. A 2/1—can be obtained free of charge from Bosch Ltd., 20 Carlisle Road, London, N.W.9. It is one of the most useful books of its kind.

A recent publication, entitled *Product Summary*, by Texas Instruments Ltd., Bedford, gives a comprehensive list of germanium transistors, diodes, rectifiers, and a CV equivalents schedule. It lists many items of interest to mobile amateurs, particularly those who are considering the construction of completely transistorized equipment. There are several *n-p-n* silicon transistors with ratings in excess of 70 watts and other types for v.h.f. applications up to 500 Mc/s.

Parking at Wethersfield Rally

The Society's Mobile Committee wish it to be known that arrangements were made for a convenient parking area for cars at the Golden Jubilee Mobile Rally at Wethersfield on June 2, but had to be altered at the last moment due to operational requirements on the Base. The Committee regrets the inconvenience caused by the unavoidable change of plan which was of course beyond its control.

Farewell

Due to pressure of work following a business re-organization, the writer has reluctantly decided he must give up responsibility for conducting *Mobile Column*. From the September issue, the feature will be in the capable hands of E. Arnold Matthews, G3FZW, of 1 Shortbutts Lane, Lichfield, Staffordshire, who is already well-known to members through his work in connection with the Radio Amateur Emergency Network as Honorary Secretary of the RAEN Committee for some years.

Sincerest thanks are offered to those who have so loyally contributed in the past. It is hoped that the same support will be given to G3FZW in the form of reports and correspondence, for it is only with this backing that *Mobile Column* can be produced.

Single Sideband

By G. R. B. THORNLEY, G2DAF *

THE large majority of amateurs who do their own constructional work are keenly interested in the equipment and methods used by other workers. This applies particularly to new circuit arrangements and to original ideas that embrace some desirable feature. Circuits to be described in this article include:

(i) A c.w. break-in system for the G2DAF s.s.b. transmitter.

(ii) An " all band " s.s.b. transmitter using a v.f.o. unit and harmonic generator based on the Racal RA17 receiver.

GM3AVA has been kind enough to provide detailed information on his very effective differential keying system for c.w. operation, and this will be described first.

Keying System for the G2DAF Exciter

The features of the system include (i) Clean, chirp-free, click-free keying; (ii) Differential action—transmitter comes on when key is closed for first Morse character and holds for a letter or word—with adjustable delay; (iii) Small number of components required (five half watt resistors, one potentiometer, one capacitor, one 3 henry choke, one three pole three-way switch); (iv) Minimum of disturbance to existing circuitry.

The system provides full break-in operation, and differential keying is obtained by making use of the existing VOX circuits. To operate the VOX relay a negative-going voltage is required at the cathode of V15a. This is provided by the —100 volt bias supply via a potential divider created by VR1, R4, and the existing 240K ohms cathode resistor. When the negative voltage is removed from the cathode of V15a, the relay will hold for a period determined by the existing time delay circuit across the anode of V15a.

The exciter is keyed by breaking the common cathode earth return of the final converter V10. Under key-up conditions, about +30 volts appears at this point and this is augmented by R1 connected to the h.t. positive rail. This positive voltage is taken to the cathode of V15a via R3 and, on key-up neutralizes the negative voltage from the bias supply. The operation of the circuit is therefore as follows. Key-up: insufficient negative voltage at the cathode of V15a to strike the neon and operate the relay, transmitter biased off and receiver alive. Key-down: positive voltage at the cathodes of V10 earthed, R3 preventing the key earthing the cathode of V15a which goes negative and closes the relay, the transmitter being alive and the receiver muted. The length of hold can be varied by means of VR1. The grid return of V12 is modified by including R5 of 47K ohms to eliminate a click on making the first character of a word. L1, R2, and C1 effectively eliminate all key clicks. A suitable component for L1 is the small l.f. choke from a Command receiver.

S1a and S1b are self-explanatory and S1c in the c.w. position increases the bias on the 6146 valve to beyond cut-off. This is necessary to eliminate a slight feed-through of r.f. at the operating frequency due to the fact that, on key-up, the cathodes of V10 are not completely open circuit and a very small amount of current can pass to earth via R3 and the cathode resistor of V15a. This increased bias has the further advantage of improving the efficiency of the 6146 on c.w.

R.f. drive is provided by increasing the carrier insertion control and leaving it up. Netting is undertaken by using the switch S1 which in its second position turns on the final

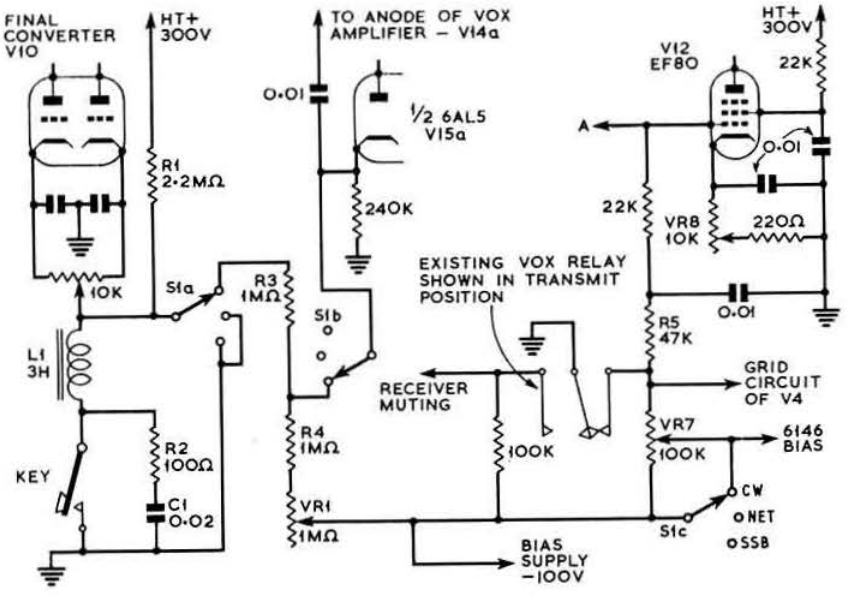


Fig. 1. Circuit arrangement for the GM3AVA c.w. break-in system with differential action applied to the G2DAF s.s.b. transmitter. VR1, R1, 2, 3, 4, 5, C1, L1 and S1a, b and c are new components. The rest of the circuit values and reference numbers are as in the original circuit published in the October 1959 issue of the Bulletin. (All switches shown in c.w. position.)

The October 1959 Bulletin is now out of print.

* 5 Janice Drive, Fulwood, Preston, Lancs.

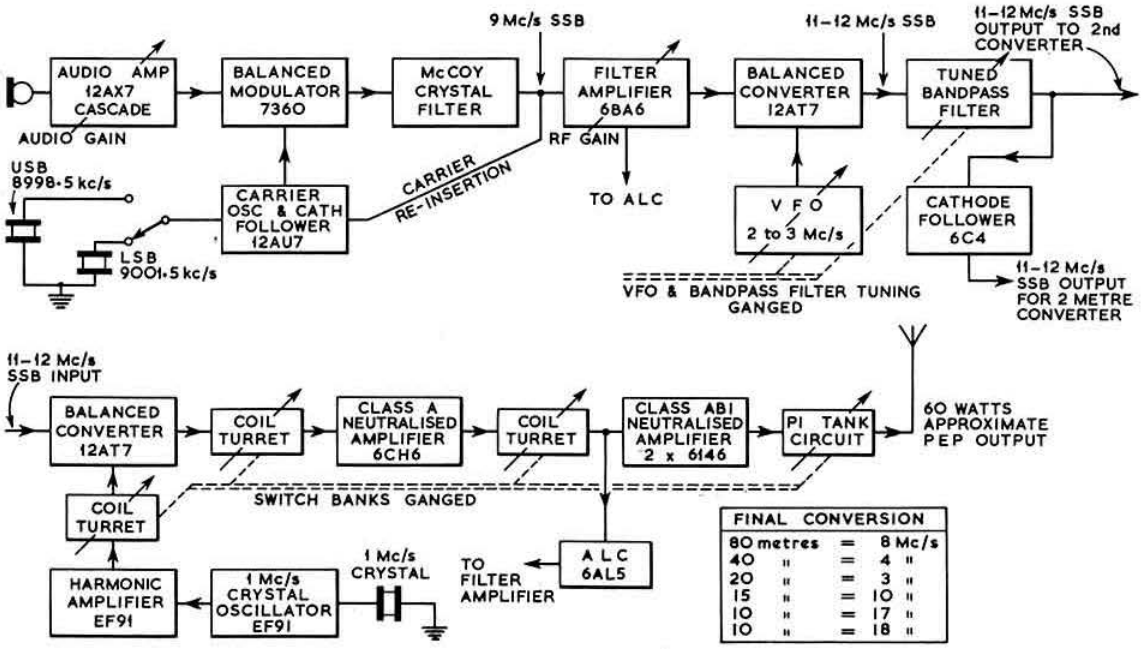


Fig. 2. Block diagram showing the basic layout for the G3MJQ sideband transmitter, using one conversion crystal only.

converter V10 but does not trip the VOX relay. For c.w. working the audio gain control is set to minimum, but an extra pole on S1 could be used to earth some convenient part of the audio chain when the switch is turned to " net " or " c.w.".

Many c.w. workers use a T-R switch for aerial change over, but a reasonably fast acting relay such as a Type 600 would be satisfactory—controlled by one of the contacts on the VOX relay. If a large linear amplifier is used, cut-off bias could be applied and could be controlled by one of the VOX relay contacts. (The writer has been informed that there is no break-through when using a G2DAF amplifier, and that it is not necessary to bias this amplifier to cut-off).

G2DAF does not normally operate c.w. and has no personal experience with this circuit. However, it is obvious from inspection of the details shown in Fig. 1 that this circuit will operate satisfactorily in the manner described. GM3AVA is to be congratulated for his original and ingenious method.

All-Band S.S.B. Transmitter with One Conversion Crystal

Any method of all-band transmission that eliminates the need for a considerable number of final conversion crystals is of interest. Full circuit detail is not available but the block diagram shown in Fig. 2 is self explanatory and to the experienced constructor who wants to try something new should present no difficulty. This design has been developed by G3MJQ and the two major units—the 2 to 3 Mc/s v.f.o. and 1 Mc/s harmonic generator—are based on the Racal RA17 circuitry. The initial sideband generation is at 9 Mc/s using a McCoy crystal filter now available in this country, but could if desired be at 9 Mc/s using the phasing method of generation. The tunable sideband output from the first converter at 11 to 12 Mc/s is heterodyned by a frequency obtained as a harmonic of the 1 Mc/s crystal; the various frequencies used are shown on the block diagram, and these are selected by anode coils in a turret that is ganged to the following signal frequency circuits.

In regard to power supply requirements, the voltages used by G3MJQ are 650 volts for the anodes and 210 volts for the screens of the 6146 amplifier valves, positive 100 volts stabilized for the a.l.c. section and negative 100 volts stabilized for 6146 bias and muting requirements.

Apart from the use of one final conversion crystal, the circuit arrangement requires two conversion processes only and the use of a high initial sideband generation of 9 Mc/s eases the problem of spurious conversion products. It is also quite simple to provide 160m band output if this is required.

The final conversion is as follows:

80m (11-12 Mc/s − 8 Mc/s) = 3-4 Mc/s
40m (11-12 Mc/s − 4 Mc/s) = 7-8 Mc/s
20m (11-12 Mc/s + 3 Mc/s) = 14-15 Mc/s
15m (11-12 Mc/s + 10 Mc/s) = 21-22 Mc/s
10m (11-12 Mc/s + 17 Mc/s) = 28-29 Mc/s
10m (11-12 Mc/s + 18 Mc/s) = 29-30 Mc/s

Enquiries Regarding Bulletin Articles

Members who write to the authors of BULLETIN articles are asked to enclose stamped addressed envelopes if they require replies.

A Surge Limiting Device

By C. R. PLANT, G5CP*

THE increased popularity of linear amplifiers, particularly for s.s.b. use, has substantially changed the trend in power supplies. Whereas in the past the average p.a. voltage has often been in the region of 750-1000, modern linears often require double this figure or even higher. This has raised problems in the protection of equipment and personnel, but in the main these have been successfully achieved. Recently, however, the writer came across an unexpected difficulty when commissioning a new linear using a 2000 volt power supply.

Fig. 1 shows the circuit adopted, a conventional full wave rectification circuit with normal smoothing, using mercury vapour rectifiers. After allowing an initial 20 minute period for heating the filaments of the 866A valves (this was later reduced to the normal 2 minutes), the switch

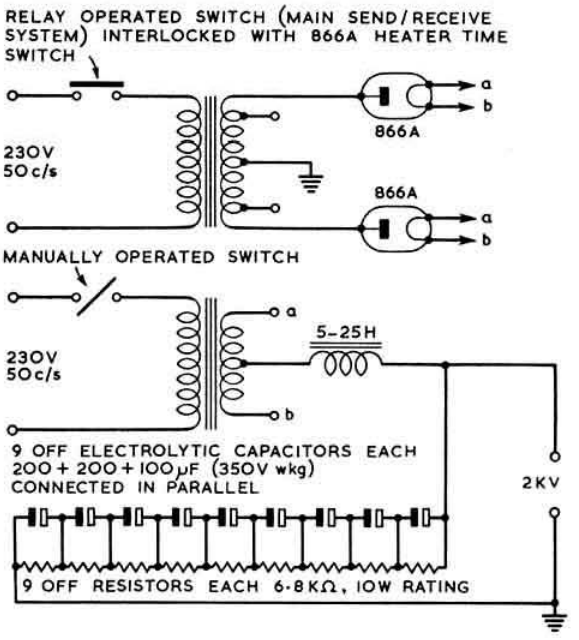


Fig. 1. The mains supply 15 amp fuses " blew " frequently with this arrangement of the power supply circuit.

controlling the h.t. transformer was closed, whereupon the 15-amp power fuse " blew."

After this the transformer was taken out of circuit and the d.c. resistance of the primary checked, and was found to be less than one ohm. Shorted turns were suspected but tests at a local repair depot, where a continuously variable a.c. supply from a motor-alternator was available, showed the transformer to be in good condition and therefore it

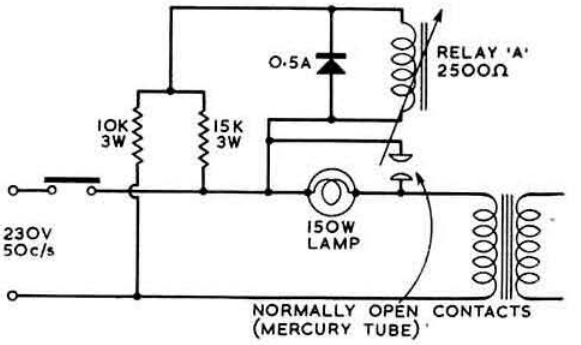


Fig. 2. The mains input circuit successfully adopted at G5CP.

was returned to the power pack. A 30 amp fuse was substituted for the previous one, but again there was a current surge which cut the circuit immediately the switch was closed. It was apparent that the initial surge, which is a combination of the transformer magnetising current, load requirements, smoothing capacity and outgoing current to the valves, was of a very high order indeed. It seemed likely that this would only persist for a few cycles, and so an examination was made of possible devices to operate for a short period when switching on the power pack.

Several alternatives presented themselves; (a) the use of anti-surge fuses suitably chosen to give protection to the primary winding and yet carry the surge current; (b) the insertion of Brimistors (temperature dependent resistors); (c) the installation of a suitable time lag contact breaker. Course (b) seemed to be the easiest solution and so a Brimistor was wired in series with the secondary centre tap. This was temporarily successful, but after a short period the heavy current caused a premature failure and because it was not possible to find a sample with a greater current carrying capacity, the experiment was abandoned.

It was at this time that the writer visited a switchgear manufacturer, and took the opportunity to discuss the problem with one of the senior technicians. He stated that this was a difficulty that they had previously experienced, but had overcome by employing the circuit which is reproduced in Fig. 2. Since putting it into service at G5CP it has proved to be completely successful. The operation is as follows: When the power is switched to the h.t. power pack the 150 watt lamp is placed in series with the transformer primary winding, thus limiting the amount of current that can flow. At the same time a potential is applied to the rectifier potential divider which energizes relay " A " causing it to operate, thus tilting the mercury tube which shorts out the lamp, putting the full mains voltage on the transformer. The action takes between 200 and 400 milli-seconds, depending on the position of the heavy beaded leads attached to the mercury tube, but this time delay is quite long enough to reduce the surge to a reasonable figure.

In actual operation the action of switching on the transmitter causes the 150 watt lamp to light brilliantly for a fraction of a second before the switch extinguishes the light and full mains voltage is applied. Since the installation of this device no further trouble owing to surges has been experienced.

* " *Lynton*," *12 Nottingham Drive, Wingerworth, Chesterfield, Derbyshire.*

Rules for the RSGB 21/28 Mc/s Telephony Contest, November 16-17, 1963

Radio amateurs throughout the world are again invited to take part in the annual RSGB 21/28 Mc/s Telephony Contest to be held this year on November 16-17.

Attention is drawn to changes in the scoring system described in detail in Rule 8. Contestants are advised that in previous years many points were lost by those who did not read this rule carefully.

RULES

1. **Duration:** The contest will start at **07.00 GMT** on Saturday **November 16,** and end at **19.00 GMT** on Sunday, **November 17, 1963.**

2. **Eligible Entrants:** The contest is open to licensed amateurs in all parts of the world. There will be two sections: (i) for single operators; (ii) for multiple operator stations. Entrants in the multiple operator section will not be eligible for awards under Rule 9 but will be eligible for certificates of merit.

3. **Licence Conditions.** Entrants must operate in accordance with the terms of their licences.

4. **Contacts:** Contacts may be made using any telephony system for which the entrant is licensed. Contacts with unlicensed stations will not count for points. Proof of contact may be required. Only one contact on each band may be made with a specific station, whether fixed, portable, mobile or alternative address. Duplicate contacts must be logged and clearly marked as duplicates without claim for points. Cross-band contacts may not be claimed.

5. **Contest Exchanges:** An exchange of RS reports followed by a three figure serial number starting with 001 for the first contact and increasing by one for each successive contact (for example, 58001, 56002, etc.) must be made before points can be claimed.

6. **Operators:** In the Single Operator Section only the entrant will be permitted to operate his station for the duration of the contest. In both sections all operators must be licensed.

7. **Entries:** Entries (*a*) should be clearly typed or written on **one side only** of foolscap or International A4 size paper; (*b*) must be ruled in columns headed (in this order) (i) Date/Time (GMT); (ii) Call-sign of station worked; (iii) I sent him; (iv) He sent me; (v) Band; (vi) Bonus Points; (vii) Points claimed; (c) must be addressed to the **Contests Committee, Radio Society of Great Britain, 28 Little Russell Street, London, W.C.1, England,** the name of the contest being clearly shown on the top left hand corner of the envelope, which must be postmarked not later than **December 2, 1963.** Log sheets are available from RSGB Headquarters.

8. **Scoring:** British Isles stations may not work each other for points. Overseas stations may only claim points for contacts with British Isles Stations (G, GB, GC, GD, GI, GM and GW). Scoring will be as follows.

British Isles Stations. Each completed contact will score **5 points.** In addition, a bonus of **20 points** may be claimed for the first contact with each new country on each band. For the purposes of scoring, the RSGB countries list will apply, with the exception that U, VE, VK, W/K, ZL and ZS call areas will each count as a separate country.

Overseas Stations. Each completed contact with a British Isles station will score **5 points.** In addition, a bonus of **50 points** may be claimed for the first contact with each British Isles country-numeral prefix on each band, i.e. G2, G3, G4, G5, G6, G8, GB, GC2, GC3, GC4, GC5, GC6, GC8, GD2, GD3, GD4, GD5, GD6, GD8, GI2, GI3, GI4, GI5, GI6, GI8, GM2, GM3, GM4, GM5, GM6, GM8, GW2, GW3, GW4, GW5, GW6, GW8. A further 50 bonus points will be scored for every ten stations worked in each of the above categories irrespective of band.

9. **Awards:** In the Single Operator Section, the **Whitworth Trophy** will be awarded to the leading British Isles entrant. In addition, **certificates** will be awarded to the leading station in each of the other five British Isles countries, and to the runner-up in the Trophy winner's country. Certificates will be awarded to the leading station in each overseas country, U, VE, VK, W/K, ZL and ZS call areas counting separately as in Rule 8.

SAMPLE COVER SHEET

RSGB 21/28 Mc/s Telephony Contest **Claimed Score**.....

November 16-17, 1963 **Call-sign**.....

Name .....

Address .....

Transmitter.....

Receiver..... Aerial(s).....

DECLARATION: *I declare that this station was operated strictly in accordance with the rules and spirit of the contest and I agree that the decision of the Council of the RSGB shall be final in all cases of dispute. I certify that the maximum input to the final stage of the transmitter was.....watts.*

Date..... Signed.....

Failure to sign the declaration may involve disqualification of the entry

The closing date for posting entries is December 2, 1963.

Rules for the RSGB 21/28 Mc/s Telephony Receiving Contest, November 16-17, 1963

1. **Eligible Entrants:** The contest is open to short-wave listeners throughout the world. All entrants agree to be bound by these rules. Only the entrant may operate his receiving station for the duration of the event. Holders of amateur transmitting licences are not eligible to take part.

2. **Duration:** The contest will start at 07.00 GMT on Saturday, November 16, 1963, and end at 19.00 GMT on Sunday, November 17, 1963. The RSGB 21/28 Mc/s Telephony Contest for transmitting amateurs will take place during the same period.

3. **Entries:** (*a*) To count for points, logs must show, in columns: (i) Date/Time GMT; (ii) Call-sign of station heard; (iii) Report and serial number sent by station heard; (iv) Call-sign of the station being worked; (v) Band in Mc/s; (vi) Bonus points claimed; (vii) Points claimed. *CQ or test calls will not count for points.*

(*b*) Entries should be set out on ***one side only*** of foolscap or International A4 size paper, must be postmarked not later than December 2, 1963 and must be addressed to the **Contests Committee, Radio Society of Great Britain, 28 Little Russell Street, London, W.C.1, England.** The name of the contest must be shown clearly at the top left hand corner of the envelope. Log sheets are available from RSGB Headquarters.

(c) All entries must contain the following declaration:

I declare that this receiving station was operated strictly in accordance with the rules and spirit of the contest and I agree that the decision of the Council of the RSGB shall be final in all cases of dispute. I do not hold an amateur transmitting licence.

Date..... Signed.....

4. **Scoring:** British Isles entrants may only log *overseas stations working UK stations in the contest.* Overseas entrants may only log *British Isles stations in contact with overseas stations in the contest.* A station whether fixed, portable, mobile or alternative address may be logged only once per band for the purposes of scoring. CQ or tests calls will not count for points.

British Isles Entrants. Each complete log entry will score **5 points.** In addition a bonus of **20 points** may be claimed for the first station logged in each new country on each of the two bands (21 and 28 Mc/s). For the purposes of scoring the RSGB countries list will be used, with the exception that U, VE, VK, W/K, ZL and ZS call areas will each count as separate countries.

Overseas Entrants. Each complete log entry relating to a British Isles station heard will score **5 points.** In addition a bonus of **20 points** may be claimed for the first station heard in each British Isles country-numeral prefix on each band, i.e. G2, G3, GM4 etc., as listed in Rule 8 for the transmitting contest. A further bonus of **50 points** will be scored for each ten UK stations (in each of the categories in Rule 8 of the Transmitting Event) logged irrespective of band.

5. **Awards:** At the discretion of the Council, the **Metcalfe Trophy** will be awarded to the leading British Isles entrant. In addition, **certificates** will be awarded to the British Isles runner-up and to the leading entrant in each overseas country.

★ ★ ★

The closing date for posting entries is December 2, 1963.

BERU CONTEST 1963

"There seems to be a fresh magic in this event each year"—VP8GQ

AFTER missing last year's scrutiny due to postal delays, Peter Hobbs, VP8GQ, of Signy Island, South Orkneys, won this year's Senior BERU Contest by a handsome margin over seasoned entrant W. E. Russell, G5WP. His consistent signals on 7, 14 and 21 Mc/s, his endurance and good operating—with only 6 hours' rest during the entire contest—gave him a lead of over 600 points from 480 contacts; there were very few entrants that did not include his call in the first dozen contacts in their logs.

To achieve this fine win, VP8GQ used a "home brew" mixer type exciter followed by a linear p.a. using TT21 valves. His receiver was an Eddystone 680X. Only one aerial was used for all bands—an unterminated rhombic with each leg 250 ft. long, and pointing in the general direction of the UK. With this he was able to make several 80m contacts with British and Canadian stations during the first night hours, and reports S8 signals from VS1LP on this band.

Runner-up G5WP of Guildford used an 813 final feeding ground planes for 80 and 40m and quad aerials for the 20 and 15m bands. With less than half of the winner's total of contacts he obtained 2,850 points by the judicious selection of bonus contacts, including VS1, several ZL's and VE's on 80m.

Third place went to ZB1BX, who was faced with a "slogging match" to work through the great number of G stations attracted to the DX bands. Nevertheless he turned in a highly creditable log—one of the neatest and most helpful received, with a number of good DX contacts to reward his efforts. "I have learned a few lessons" he remarks, and goes on to say "It is not a good idea to include curry in one's contest diet"!

In the Low Power Section, Frank Johnstone, VS1FJ, won by 150 points over ZB1CR. He used ground plane aerials for the three bands employed with 25 watts input to a QV06/20; an Eddystone 888 receiver completed the station. ZB1CR, deficient on bonus points and in much the same position as ZB1BX, made nearly a hundred contacts more than the winner. It is often said that a win for Mediterranean contestants is a "natural" because of their proximity to the British Isles: this result should not only correct the impression, but also underline the task which faces ZB1 and 5B4 stations.

COMMENTS

Most stations were kind enough to add comments to their logs, and these are very helpful when the report is prepared. Several such comments were: "I now know that South Africa is not in the Commonwealth" (ZB1BX); "The

HIGH POWER SECTION

Posn.	Call-sign	Points	Posn.	Call-sign	Points	Posn.	Call-sign	Points	Posn.	Call-sign	Points
1	*VP8GQ	3477		†G2QT	1544	44	G3APN	1050	67	VE2LY	710
2	*G5WP	2850	24	*VK5NO	1500	45	G3FPK	1040	68	VK3XB	670
3	*ZB1BX	2840	25	VU2GG	1392	46	G3LHJ	1039	69	G8QZ	665
4	*G3FXB	2598	26	VE2YA	1380	47	G3KHA	1034	70	VQ2JG / G3GJQ	645
5	*5B4IP	2590	27	VO1BD	1350	48	VE1EK	975			
6	5B4TC	2551	28	G3KSH	1339	49	G5VU	965	72	G3PSY	620
7	*VE2NV	2539	29	VE8DX	1310	50	VK3AXK	905	73	VE3EBU	594
8	*VS9AAA	2517	30	GB2SM	1305	51	VE1WL	880	74	G3GSZ	545
9	G5RP	2432	31	G3GEW	1304	52	G2BLA	865	75	G8KU	480
10	*VP5XG	2420	32	VE2AYY	1303	53	G2AJB	855	76	VE3DH	460
11	*VE3KE	2385	33	VE4MF	1299	54	GW3PSM	820		†VE3DFD	459
12	5B4KG	2224	34	G3VW	1260	55	G5JU	807	77	VK5JT	425
13	VE2YU	2190	35	VE3AU	1229	56	VQ4KPB	785	78	VK5KO	424
14	*ZL4BO	2145	36	VE2BV	1210	57	G3PVL	782	79	G3PFB / VE4JT	415
15	G5RI	2130	37	G3MXJ	1175	58	VE2WW	780			
16	G2DC	2050	38	VE3BMB	1135	59	ZL2PL	765	81	G3MWZ	405
17	*ZL2AWJ	1870	39	MP4BBE	1134	60	VK3ARX	760	82	GM4GK	370
18	*VQ2W	1745	40	G4CM	1110	61	5H3HZ	755	83	VE3BGW	365
19	G3GFG	1684		††VE3BWY	1093	62	G3KAY	754	84	G3ICH	330
20	*5N2RSB	1680	41	G3GGS	1085	63	VK2PV	740	85	VE3CYJ	329
21	G6CJ	1670		†G3EYN	1085	64	G3JKY	739	86	G2ZR	320
22	*ZK1AR	1560	42	G2DU	1075	65	ZE3JO / VE2WA	715	87	G2BRR	300
23	G3AAE	1550	43	VK2GW	1055				88	G3JVJ	285
									89	G3WP	235

LOW POWER SECTION

Posn.	Call-sign	Points	Posn.	Call-sign	Points	Posn.	Call-sign	Points	Posn.	Call-sign	Points
1	*VS1FJ	2180	5	*GW3JI	1375	8	*VK3RJ	1015	11	G3GNS	740
2	*ZB1CR	1930	6	G3DYY	1300	9	*ZE3JE	960	12	ZD6OL	725
3	*VQ4IN	1921	7	G3HRY	1160	10	VK3ZC	770	13	ZL1MT	290
4	*VK7SM	1435							14	VS9AAE	240

RECEIVING SECTION

Position	Name	Points	Position	Name	Points
1	*W. E. Wilkinson B.R.S.20317	2495	5	H. M. Davison A.2122	1220
2	*E. Howell B.R.S.24775	2051	6	D. S. Kendall B.R.S. 24643	1195
3	M. Harrison B.R.S.24733	1925	7	F. C. Powell B.R.S. 18461	704
4	*E. W. Trebilcock B.E.R.S.195	1450	8	W. J. C. Pinnell B.R.S.21624	700
			9	B. Crook B.R.S. 21008	615

* *Award winner* † *No power declaration* ‡ *Multi-operator station*

A moonlight view of the Base Hut from which VP8GQ operated.

sound of all those OT G calls never ceases to give me a thrill " (VP8GQ); " Had to borrow back for the contest my old rig, which I sold two years ago " (VE2LY) ; " Conditions on the whole were terrible " (ZE3JO); " A jolly good contest, enhanced by good operating, good procedure and good manners " (G3GEW); " My first BERU Contest—great fun " (VU2GG); " How about including 1·8 Mc/s next year as a temporary substitute for 28 Mc/s? " (VE2AYY); " The only contest worth entering " (VO1BD); " My one highlight was to work VP8GQ on 20, 40 and 80 " (VE4MF); " A delight to hear the bands populated by polite, competent hams " (G3GJQ); " Conditions from VK5 were below normal " (VK5KO); " My first contest ever —looking forward to next year " (5B4TC); " Apart from a power cut, W/K/Europeans calling me, QRM from the harmonic, poor conditions, and falling asleep—altogether a good contest " (5N2RSB); " You'd be uphill getting 1,500 points in this area! " (VK3ARX); " I ran into a hefty slice of transmitter trouble " (VS9AAE); " My thanks for some fine operating " (G3DYY); " Had to call VE6NX 42 times, and then got 579! " (GW3JI); " The old time in April was the best time of all " (VK3ZC) " Did not hear any BERU stations on 28 or 21 Mc/s " (ZL1MT).

A number of entrants comment on the clash with another contest, especially on the 7 Mc/s band, but with so many national societies organizing contests at the present time such clashes are difficult to avoid—there are not enough weekends in the calendar. First steps towards international contest planning are being made, and it is hoped that co-operation of this kind will increase.

Other than a suggested change of date, no contestant commented on the rules and scoring, so it is assumed these are generally acceptable. No contacts were reported on 28 Mc/s, but the suggested substitution of 1·8 Mc/s would penalize those stations not licensed for the band.

The shack at VP8GQ. For the BERU Contest, an Eddystone 680X receiver, not shown in this photograph, was borrowed.

RECEIVING SECTION

One of the great merits of BERU is that there is "something for everybody" whether he attempts the entire contest or just puts in a few hours. With real DX workable more or less for the asking from and in any part of the world, whether it be ZK1 on 80m, VS1 on 40, or comparative rarities like VR3E or ZS7M, the thrill of this oldest yet friendliest of contests retains its attraction and its interest. As a training ground for the listener it is pre-eminent, and so it is a little disappointing that only nine entries were made for the Receiving Section. This was won by W. E. Wilkinson, B.R.S.20317, who relied on his AR88 receiver with dipole and " Windom " type aerials. Second place was taken by B.R.S.24775, whose catches included VS4RS, VP5XG (a consistent signal), and on 80m several ZL stations. The sole overseas entrant, Eric Trebilcock, B.E.R.S. 195, had to be content with fourth place, and appears to have suffered from the generally poor conditions experienced in Oceania. Eric has been a staunch supporter of the Receiving Section for many years, and is no stranger to listening, as his low B.E.R.S. number indicates. He specializes in reporting unusual reception, and a QSL from him is something to be prized. Those who would aspire to become good DX operators can learn something from his example, and from the enthusiasm of the other eight who put in entries for this Section. Surely the entry should have been ninety, and not nine?

* * *

Check logs from G3CXM, G3LMD, G6JF, G8SC, G8UQ, GI5UR, VE1PA, VE1DB, VE3DDU, VE3EVK, VS6BJ, VU2MD, ZE3JE and ZL2AYJ are gratefully acknowledged.

CU in BERU 1964!

CONTESTS DIARY

August 10-11 - WAE DX (c.w.).
August 11 - D/F Qualifying Event (Newbury). (see page 137.)
August 17-18 - WAE DX (phone).
August 24-25 - All Asian DX Contest.
September 7-8 - V.H.F. National Field Day (For rules, see page 373, January 1963).
September 7-8 - Region I IARU V.H.F. Contest.
September 14-15 Scandinavian Activity Contest (C.W.).
September 15 - D/F National Final.
September 21-22 Scandinavian Activity Contest (Phone).
September 22 - Low Power Field Day. (see page 66, July, 1963.)

October 6 — RAEN Rally.
October 19-20 — 7 Mc/s DX Contest (phone).
October 27 — Second 420 Mc/s Contest.
November 2-3 — 7 Mc/s DX Contest (c.w.).
November 9-10 — Second 1·8 Mc/s Contest.
November 16-17— RSGB 21/28 Mc/s Telephony Contests.

Society News

Oscar III

The Society recently asked the Radio Services Dept. of the Post Office whether any objection would be raised to the use of the *Oscar III* satellite by UK radio amateurs. The P.O.'s reply states, *inter alia*, " You will be glad to know that we shall not regard United Kingdom amateurs as being in breach of the conditions of their licences if they make transmissions via the satellite *Oscar III*. This is an exceptional arrangement, however, pending the outcome of the EARC on the Space Service."

RSGB International Radio Communications Exhibition

The Exhibition Committee needs *your* support to make this year's RSGB International Radio Communications Exhibition the best yet. There are two ways in which you can help:

(i) Have you any unusual or ingenious pieces of equipment (home constructed, of course) to exhibit on the Society's stand? In addition to the usual prizes offered for the best equipment on display, a special prize is being offered for the best piece of home constructed equipment exhibited by a member who is not, and has not been, employed in the radio or electronics industries. It may *not* be the smartest (in appearance) piece of gear that gets the prize!

(ii) Have you some time to spare during the period of the Exhibition, October 30 to November 2, to help the Society's Exhibition Committee staff the RSGB stands. There is no reward other than hard work, but you will enjoy " meeting the boys."

If you can help, please write *now* to R. G. B. Vaughan, G3FRV, Honorary Secretary, RSGB Exhibition Committee, 9 Hawkins Road, Tilgate, Crawley, Sussex.

Mr. A. J. Reynolds, G3NNK, joins Headquarters Staff

With effect from August 1, 1963, Mr. A. J. Reynolds, G3NNK, has joined the Society's Headquarters staff as a secretary-accountant.

Mr. Reynolds has been a member of the Society since May 1941 and was first licensed as G3NNK in August, 1959. For the past three years he has been secretary of the East London RSGB Group.

London Members' Luncheon Club

Mr. John Clarricoats, O.B.E., G6CL, has been elected Chairman of the London Members' Luncheon Club in succession to the late Stanley Vanstone, G2AYC. Mr. W. E. F. Corsham, G2UV, has been elected Deputy Chairman. Mr. Clarricoats founded the Club in 1950.

Meetings of the Club are held at the Bedford Corner Hotel, Bayley Street, Tottenham Court Road, London, W.C.1, on the third Friday in each month. Visitors are always welcome. At the June meeting, there was an attendance of 13 from overseas including seven 9G1s!

Claims for RSGB Certificates

Members are reminded that claims for RSGB Certificates should be sent direct to Headquarters. Claims are acknowledged on arrival and passed to the Honorary Certificates Manager for attention.

Russian Translator Required

From time to time Headquarters requires translations of articles, letters and other short items in Russian. Offers from members in a position to help are invited and should be addressed to the Editor, RSGB BULLETIN.

More Pirates Fined

On May 14, 1963, at Dorking Magistrates' Juvenile Court, a 16-year-old youth pleaded guilty to a charge of using wireless telegraphy transmitting apparatus without the necessary licence. He was fined £5.

On June 5, 1963, at Nottingham Magistrates' Court, Anthony Budworth of 45 Sneinton Dale, Nottingham, and Frederick George Camm, of 6 Harold Street, Nottingham, both pleaded guilty to charges of using wireless telegraphy transmitting apparatus without the necessary licence. A. Budworth was fined £10 and ordered to pay 2 guineas costs, and F. G. Camm was fined £5. Both were ordered to forfeit their equipment to the Postmaster General.

At Sheffield City Court on May 8, 1963, Raymond Bisby of 35 Scraith Wood Drive, Sheffield, 6, and Peter Wade of 356 Shirehall Road, Sheffield, 5, both pleaded guilty to charges of using transmitting apparatus without a licence. They were fined £10 each and Advocate's fees of £3 3s. were awarded. They were ordered to forfeit their equipment to the Postmaster General.

Claimed Scores

The Council has given permission for scores claimed in RSGB contests to be published in the *Month on the Air* and *Four Metres and Down* features in the BULLETIN.

The Mini-Mus R.F. Pre-amplifier

The average diameter of the Salford type 34 coil former used in the pre-amplifier described by G3BDQ in the June issue of the BULLETIN is $\frac{1}{4}$ in. It is understood that the former is no longer manufactured.

Amateurs Radios Algériens

It is announced from Algiers that a new Society, known as the Société des Amateurs Radios Algériens, has been formed. The QSL Manager is G. Deville, 21 Boulevard Victor Hugo, Algiers, Algeria. Other communications should be addressed to Post Office Box No. 2, Algiers.

GB2RS SCHEDULE

RSGB News Bulletins are transmitted on Sundays in accordance with the following schedule:

Frequency	Time	Location of Station
3600 kc/s	9.30 a.m.	South East England
	10 a.m.	Severn Area
	10.15 a.m.	Belfast
	10.30 a.m.	North Midlands
	11 a.m.	North East England
	11.30 a.m.	South West Scotland
	12 noon	North East Scotland
145·30 Mc/s	10.30 a.m.	Beaming north west from Sutton Coldfield
	10.45 a.m.	Beaming south west from Sutton Coldfield
145·50 Mc/s	11.00 a.m.	Beaming north from Leeds
	11.15 a.m.	Beaming east from Leeds
145·8 Mc/s	11.30 a.m.	Beaming west from Belfast
	11.45 a.m.	Beaming north east from Belfast
145·10 Mc/s	12 noon	Beaming north from London area
	12.15 p.m.	Beaming west from London area

News items for inclusion in the bulletins should reach Headquarters not later than first post on the Thursday preceding transmission. Reports from Affiliated Societies and from non-affiliated societies in process of formation will be welcome.

Morse Proficiency Transmissions

Morse proficiency tests are transmitted on 3550 kc/s at 20.00 GMT on the first Tuesday of every month by the Royal Naval Amateur Radio Society's HQ station, G3BZU.

Readers may be interested to learn that the July transmission was taken from page 51 of the October, 1943 RSGB BULLETIN, transmission speeds being 19·5, 25, 29·5 and 35 w.p.m. To date only two listeners have qualified for the 35 w.p.m. sticker. Where are these " hot " c.w. operators?

Commencing in September it is hoped to run a test transmission on 1880 kc/s at 19.00 GMT, one hour before the qualifying run on 3550 kc/s. Reports on the transmissions are always welcomed by the RNARS.

Full details of these transmissions are given on page 250 of the November, 1962 BULLETIN or can be obtained direct from RNARS QRQ Test, HMS *Mercury*, Petersfield, Hants.

GPO Morse Tests

Morse Tests will be held at the Head Post Offices in Birmingham, Cambridge, Derby, Leeds and Manchester during the week commencing September 9, 1963, provided there are sufficient candidates. Application forms may be obtained from the Radio Services Dept., Radio Branch, GPO Headquarters Building, St. Martin's-le-Grand, London, E.C.1. Completed application forms, to which the entrance fee of 10s. must be affixed in stamps, must be posted to the Wireless Telegraphy Section, Union House, St. Martin's-le-Grand. London, E.C.1, **to arrive not later than August 20, 1963.**

Radio Amateurs' Examination

The City and Guilds of London Institute has announced that 861 candidates passed and 368 failed the Radio Amateurs' Examination held in May this year. Of the total of 1,229, 11 were blind students who were specially examined. Nine were successful.

The next Examination will be held on December 6, 1963.

Region 1 Field Day

The Region 1 Field Day will take place this year on September 22, from 09.00 to 17,00 GMT. Individual groups, however small, may compete provided the transmitters are operated by members residing in Region 1. Competing stations will be looking for contacts with portable stations outside the Region.

Copies of the rules are available from the Regional Representative, B. O'Brien G2AMV, 1 Waterpark Road, Prenton, Birkenhead.

Two Metre D/F Hunt

Copies of the rules and entry forms for the Surrey Radio Contact Club's Two Metre D/F Hunt to be held on September 22, 1963, may be obtained by sending a stamped addressed envelope to the Honorary Secretary, S. A. Morley, G3FWR, 22 Old Farleigh Road, Selsdon, South Croydon, Surrey.

Headquarters Fund—List No. 20

The following is the twentieth list of those who had contributed to the Headquarters Fund up to July 23, 1963: J. C. Beal (G3JSN), P. W. Haylett (G3IPV), P. F. Brown (G3PLJ), A. C. Cake (G3CNO), A. L. Rogers (G2FQD), A. Peterson, M.D. (W1ZJJ), E. D. Avery (B.R.S.25400), L. Bodman (B.R.S.22865), J. F. Brown (G3KTN), D. B. Slack (G3GFE), L. G. Quarterman (G3NHX), T. J. Butler (G3FNV), Deutscher Amateur Radio Club (DARC), Union Schweiz Kurzwellen-Amateure (USKA), N. G. Hyde (G2AIH).

Total amount contributed to date: £1,678 12s. 1d.

Port Talbot Bucket and Spade Party

A Bucket and Spade Party, organized by the Port Talbot Radio Club, will be held at the Newton Institute on the Newton-Nottage Road, on September 1, commencing at 11 a.m. A meeting will be held during the afternoon.

Travelling from Bridgend, visitors should turn left at the cross-roads in Newton; the venue is about 100 yards on the left. From Port Talbot on the A.48, turn right for Porthcawl on to the B.4283 and left at the cross-roads in Nottage. The venue is then about one mile farther on. Talk-in stations using the call-signs GW3ACF/A and GW4CG/A will be active on Top Band and 2m respectively.

Visitors are asked to make their own arrangements for refreshments, as the event is being organized on a picnic basis.

Further information may be obtained from H. G. Hughes, GW4CG, 20 Austin Avenue, Porthcawl, Glamorgan.

Dr. John A. Saxton appointed Director of Scientific Mission in Washington

Dr. John A. Saxton has been appointed Director of the United Kingdom Scientific Mission in Washington, D.C., and Scientific Attache at the British Embassy there. He will take up his duties early in 1964.

Dr. Saxton, who is a member of the Society, has been Deputy Director of the DSIR's Radio Research Station since 1960. His work on the dielectric properties of the atmosphere and on studies of radiowave propagation at v.h.f. has made him well known in Europe and in North America.

International Railway Meeting

On September 21-22, 1963, the Groupe des Amateurs-Emetteurs Cheminots Français is holding an international meeting for radio amateurs who work on railways. Further information may be obtained from Lucien Le Guillon, F9ZX, 4 rue de la Marne, Eragny-s/Oise (Seine-et-Oise), France.

Brigadier A. L. Harris, M.C.

We regret to record the death of Brigadier A. L. Harris, M.C., who before the 1914-18 war held the call-sign XHP. Following a distinguished career in the Army he retired after the last war. In 1953 he became London Manager of the Candler System Company.

Death of H. B. Dent, G2MC

We regret to record the death on June 17, 1963, of H. B. Dent, G2MC, at the age of 67 who was for many years on the editorial staff of *Wireless World*.

Mr. Dent served in the Army and Royal Flying Corps during the First World War and in the R.A.F. during the Second World War.

Silent Keys

O. J. RUSSELL, G3BHJ

The sudden death of Jack Russell, G3BHJ, at his home on July 19, came as a great shock to his many friends and contacts. He was 49 years old.

Up to only two weeks before his death, he was in normal health, and on the air daily, where he was very well known, particularly on the h.f. bands and on s.s.b. He was a regular member of both the Norwich and Norfolk radio clubs, where his wit, jocularity and technical assistance and information will be greatly missed. Jack was also a frequent contributor to numerous Amateur Radio periodicals; articles both technical and humorous flowed easily from his pen.

Despite the considerable time and effort that Jack spent on his increasing business as Manager of Mosley Electronics Ltd., and its new ventures, he always found time to devote to operating and the social side of Amateur Radio as a hobby.

He will be greatly missed by his many friends around the world, but particularly so in the Norwich area. Our sympathy is extended to his widowed mother and to his sister.

G3IOR

Society Affairs

A digest of the business discussed at the May, 1963, meeting of the Council.

THE May meeting of the Society's Council was held on May 20 and was attended by Messrs Norman Caws (President), H. A. Bartlett, J. C. Graham, R. C. Hills, E. G. Ingram, J. Douglas Kay, A. O. Milne, L. E. Newnham, A. D. Patterson, R. F. Stevens, G. M. C. Stone, J. W. Swinnerton, E. W. Yeomanson (Members of the Council), John Clarricoats (General Secretary) and John A. Rouse (Editor).

Apologies were presented for the absence of Major-General E. S. Cole, Mr D. A. Findlay, Mr F. K. Parker and Mr A. C. Williams, who was indisposed.

New Zone A Representative

The President reported that Mr. L. N. Goldsbrough, G3ERB, had received 48 votes and Mr. A. C. Dunn, G2ACD, 40 votes in the ballot for the election of a new Zone A Representative. The President then formally declared Mr. Goldsbrough elected.

Headquarters Building

Members of the Headquarters Building Committee had considered three further offers of accommodation for the proposed new Headquarters offices but all had proved unsuitable owing to planning restrictions.

A suggestion that the Society might join with another organization in purchasing a building had been considered by the Committee but found to be impracticable.

Investments

The Council decided to invest £3,000 of the Society's funds, surplus to immediate requirements, either in 4½ per cent Defence Bonds or with a local authority. The advice of the Society's bankers would be taken in choosing the form of investment.

Mr. D. A. Findlay

The President read a letter from Mr. D. A. Findlay resigning from the office of Honorary Treasurer due to pressure of business. The Council accepted Mr. Findlay's resignation with regret and placed on record its thanks for his past services. It was agreed to consider at the June meeting of the Council how the vacancy should be filled.

Membership

The Council approved 101 applications (73 Corporate and 28 Associate) for membership of the Society. In addition, 12 applications for transfer from Associate to Corporate grade were approved. It was agreed to waive for one year the subscription of a member who suffers from blindness.

The Council was pleased to grant affiliation to the Loughton and District Radio Society.

Proposed Memorial to C. H. L. Edwards, G8TL

Suggestions that there should be a memorial to the late C. H. L. Edwards, G8TL, have been made recently and at this meeting the Council decided to give the matter further consideration when the new Headquarters is established.

Terms of Reference for Committees

The Council discussed a new draft of the terms of reference of all its Committees. It was agreed to give final consideration to the revised draft at the June meeting and to consider at that time terms of reference for the Society's Certificates, QSL and V.H.F. Managers.

Reports of Committees

At the meeting of the Exhibition Committee held on April 19, arrangements for the RSGB International Radio Communications Exhibition to be held later this year were discussed. Among the matters considered were the siting of the Society's own stand and the operation of a proposed exhibition station.

On April 22, the Scientific Studies Committee met to give further consideration to proposed articles for the BULLETIN, the analysis of data from the GB3VHF project, the operation of an experimental v.h.f. station in Lerwick, the Society's IQSY programme and matters connected with the Oscar III and Echo A12 projects.

In connection with the meeting of the Finance and Staff Committee held on April 27, it was reported that Mr. A. J. Reynolds had accepted the post of secretary/accountant on the Society's headquarters staff with effect from August 1, 1963.

Final plans for the Golden Jubilee Mobile Rally at Wethersfield, Essex, were discussed by the Mobile Committee when it met on April 29, 1963.

At its meeting on May 2, the Contests Committee considered a draft programme of events during the first half of 1964 and made arrangements for the handling and checking of entries for NFD. Reports on the First 1·8 Mc/s, the 144 Mc/s Open and Listeners' V.H.F. Contests were approved for publication, as were the rules for a number of other events.

The Golden Jubilee Celebrations Committee met on May 7 to deal with matters of detail and in particular arrangements for the Dinner.

The RAEN Committee dealt with correspondence, a new plastic car window sticker, liaison with the British Red Cross Society, and possible co-operation with the Civil Defence Authority in Hampshire when it met on May 11, 1963.

* * *

The Council was in session for four hours 25 minutes.

SOUTH WALES GOLDEN JUBILEE CONVENTION

NATURAL HISTORY WING, UNIVERSITY COLLEGE, PARK PLACE, CARDIFF

Saturday, September 14, 1963

Programme

11.00 a.m.	Lectures and Demonstrations of Equipment
2.30 p.m.	Business Meeting and Official Opening
5.0 p.m.	High Tea
6.0 p.m.	Raffle and Official Lecture

In addition to the formal programme, there will be competitions for home-constructed equipment and various prizes for mobile entries.

A free car park for up to approximately 100 vehicles will be within the College grounds. Lunch in the College will be available, the cost of which is not included in the ticket price below. Full details will be circulated within the Region as soon as they are available.

Tickets, price 13/6d. each including high tea, are available from Mr. D. J. C. Green, GW3MRI, 36 St. Augustine Road, Heath, Cardiff. No applications can be accepted after September 7, 1963.

The Council will be represented by the President, Mr. Norman Caws, G3BVG, Mr. J. W. Swinnerton, G2YS, the Zonal Representative, Mr. A. C. Williams, GW5VX, and the General Secretary, Mr. John Clarricoats, O.B.E., G6CL.

CLUBROOM

A Monthly Survey of Group and Club Activities

That Examination

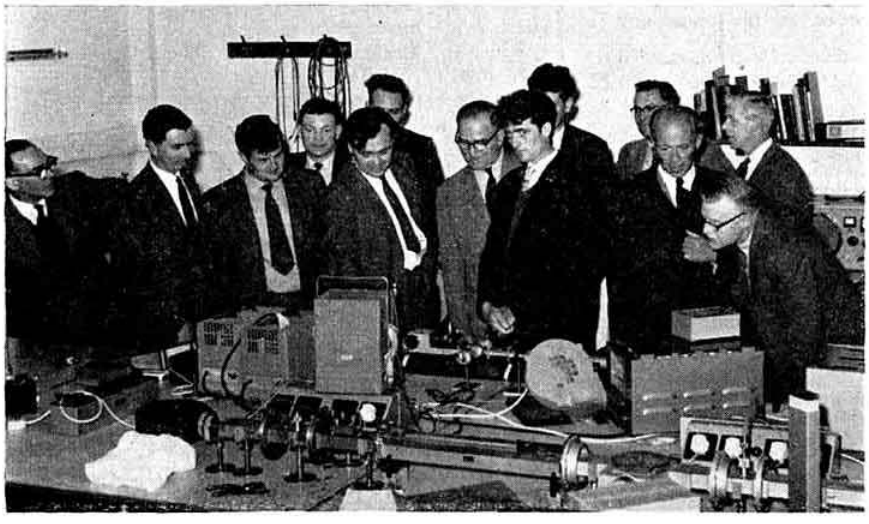
This is the time of year when " RAE Course " begins to appear in club programmes and committee agenda, and a (sometimes) willing volunteer is sought to steer aspirants through the technicalities of the examination syllabus. Many clubs may not be aware of the help which Local Education Authorities can give in the provision of such courses—help ranging from payment of the lecturer to provision of lecture rooms, test equipment and a local Examination Centre. While such classes are usually described as " recreational " in that this term determines the scale of fees and the minimum number of enrolments required, Authorities are quite happy to enrol the local Society's own lecturer. An initial approach is often met with the reply " If there is a proved demand we shall be only too happy to meet it," and many applicants who at first wish only for a basic radio course have been introduced to Amateur Radio and have become keen members of their local group.

Most Education Authorities are now compiling their prospectuses for the coming sessions, so secretaries should contact their local office without delay. It is not usually necessary to prove that a full class is " lined up "—many such courses are tentative to test demand. Try to ensure that enrolments are sufficiently above the minimum to allow for " fallout "—which can often happen for reasons other than lack of interest—since it is a Ministry regulation that classes will be curtailed if the attendance falls below a minimum level on three successive nights, and this can happen during bad weather or periods of epidemic.

Details of classes already arranged will be found elsewhere in this issue of the BULLETIN: details of further arrangements will be welcomed.

News from the Newsletters

FOC—the First Class Operators' Club—has now reached its ceiling of 400 members, and must be one of the largest clubs without a clubroom: membership, which is world-wide, is open to all who enjoy c.w./s.s.b. chatting with good operating, clean signals and good manners on the air. Admission is by sponsorship, but at present is QRX. Open to all Methodists is **WAMRAC** which aims to promote worldwide Christian friendship by Amateur Radio. The group recently operated GB3MYA at the Midlands Youth Assembly at Peterborough, for which help was given by Peterborough ARS. **MARS** *Newsletter* contains yet another article on " Aids to the Mobile Operator " by roving mobileer G5PP, who would be an ideal person to conduct a lecture tour of clubs if only he could be persuaded to do it. The society hopes to man a stand at the City of Birmingham Show on September 6-7. The **Southgate/Finchley** RSGB Group reports NFD in some detail, and also mounted a station for the local Scout rally. One member reports his " fibreglass top section working FB " on mobile—who'll be the first to work with no whip at all? **CQ CARS** contains a useful constructional article by G3KEF on a three element 2m aerial, and an article by G5GR on " Single Sideband and the Ring Modulator." **Reigate** ATS seek support for their entry in the VHF NFD on September 7-8. **Mitcham and District** ARS is running a contest for listeners, and quotes some good DX received by member Maurice Wicksteed on his R107: such incentives are to be commended as they make future G3s " DX wise " and encourage them to make the most of their BRS apprenticeship. Four packed sheets of the **Hastings** DARC *Natter Net Notes* include mention of the " 3MGQ Special " as an aerial that deserves to be better known—perhaps " Doc " can be persuaded to favour the BULLETIN with an article. The nine page **Wirral** ARS *Newsletter* includes a provocative article " Why Bother Building?—Become a Professional Amateur " by G3CSG and an article, with diagrams, on " S Meters " by G2AMV—surely good " subscription value " by any standards. **South Shields** monthly *Spectrum* reminds us that GB3SFS will again be active at the local Flower Show on August 9-11, and includes a constructional article on a transistorized Topbander for good measure. The club will operate **GM3ROA/P** in Berwickshire from August 18 on 160m—if



Dr. H. J. Roberts of the University College of North Wales describing a 3cm tripler unit employing a semiconductor diode during a visit of members of the Conway Valley Amateur Radio Club to the Department of Electronic Engineering at Bangor.

(Photo by GW3JGA)

that day happens to coincide with " summer " a good time *will* be had by all!

Points North

Scarborough ARS hold weekly meetings and welcome visiting holidaymakers: G3GBH on " VHF " on August 8; a discussion on the RAE on August 15; and G3NRI on " Servicing " are some of the coming attractions. **Northern Heights** (Halifax) ARS have been visiting Emley Moor TV station, and plan to demonstrate Amateur Radio at a number of local events this month. The society's programme is already arranged until mid-June *next year*! Future visitors to the Sportsman Inn HQ include the South Manchester Club, which will be entertained to a " pea and pie " supper. **Stockport** RS has visited Granada TV HQ and the Ringway Airport Control, while G3AYT has lectured on v.h.f. equipment. Future meeting dates are August 14 and 28. **Flintshire** RS activities reported by C. R. GW3JGA mention **Conway Valley** ARC who visited University College at Bangor to see valve and semiconductor research and colour television, while **Prestatyn** were grateful for a handy extinguisher when fire threatened their generating set at the start of the 2m portable contest. Moral—don't overfill the petrol tank; fire brigades can't climb to 1,300 ft. in a hurry! The Group's autumn session opens on August 26 with a talk on s.s.b. at the Railway Hotel, Prestatyn. Forthcoming **Wirral** ARS events include a D/F night on August 7 (with local practice) and a demonstration of First Aid for Electric Shock on August 21. G6CL will be an honoured guest at the Annual Dinner later this year.

South and West

After welcoming 400 visitors to the Longleat Rally, the **Bristol** RSGB Group report on a lecture by Mr. Davies of Bristol Technical College who demonstrated a 70cm video transmitter. The **Cornish** Radio and TV Club has donated a total of £15 to the Cheshire Homes Radio Group and the Radio Amateur Invalid and Bedfast Club as a result of the recent Exhibition and Mobile Rally and the generosity of an anonymous doner. 9G1DW and G2FQD followed up regular QSOs with a " face to face " contact at the July meeting, when attendances continued their upward trend. The **South Dorset** society held its July meeting radiating 2m signals from Hardy's Monument—one of Dorset's highest landmarks. Several contacts were made, despite the efforts of thick fog to mar the occasion. From August 1-5 the Society was due to exhibit at the Weymouth Model Engineering Society's display. Another club to seek an outside venue is the **Crawley** ARC, which has chosen the Hog's Back at Guildford for its August 28 meeting, and hopes to entertain visitors including Reigate members. Operation will be on 144·64 and 1·925 Mc/s. OH1NE and VE8YG were recently welcomed. **Dorking and District** RS were pleased to improve on last year's NFD score, despite some " new ideas " in radiating systems which did not behave as planned. Neighbouring clubs and individual members are invited to a lecture by G2FTB on September 24; subject " Electrolytics " —more details later. The AGM of the **Royal Naval** ARS will be held at Seymour Hall, London on November 2 at 5 p.m. (This is the last day of the RSGB Radio Communications Exhibition). Details of the " Mercury Award " for contacts with RNARS members will be issued shortly.

As a result of experience gained during this year's NFD G3MSV, G3PEO, G3OLN and G3RCJ (ex-ZB1FT) have formed the **Cotswold Radio Contest Club.** As the title suggests, the main purpose is to enter as many contests as possible, with the accent on c.w., though phone will not be excluded. The only firm requirement is that all members or prospective members must also be members of RSGB. Other details can be obtained from G3OLN.

Midland Miscellany

Wolverhampton ARS reports high activity by members on h.f. and v.h.f bands. (Unfortunately important information from this society's well-produced *Newsletter* is missing owing to mis-stapling.) **Peterborough** ARS have a Sunday rendezvous at their riverside site at Alwalton during the summer, otherwise the club meets at the Technical College on the first Friday in each month. In July, G3HXR spoke on his work with Top Band aerials and loading coils for mobile work. **North Notts** ARS holds *twice weekly* meetings on Tuesdays and Thursdays: few clubs are fortunate enough to maintain this level of activity. The Honorary Secretary is now G3NHE. **Lincoln** Short Wave Club are busy preparing for their Hamfest and Mobile Rally to be held on September 15 at North Kesteven Grammar School, North Hykeham, Lincoln. **Derby and District** ARS welcomed Frank Matthews W6QWX who conveyed a message of greeting from the Californian Society of Amateur Radio Operators, together with a Roll of Members, to mark his third visit to the society in four years. **Cambridge and District** ARC has been busily donating parcels of fixed mica capacitors to other clubs—a very nice gesture much appreciated by the recipients. The annual Picnic at Houghton Mill, Hunts, on June 23 attracted support from Cambridge, March, Shefford and Newmarket, and was voted " a good time." **Stourbridge** DRS attracted new support to a talk on " Mobile Interference " by G3BMN followed by a colour film of NFD. No August meetings, but resumption in September accompanied by a RAE course. **East Worcestershire** Group will meet on August 15 to survey constructional progress and to sell surplus gear. G3HZG is Honorary Secretary. To " come full circle " we return to **Wolverhampton** ARS and a letter describing the " Kidderminster Cup " donated by former resident Reg Cherrill W3HQO and awarded for constructional prowess. G3JRL was the first winner, and received his award at the Annual Dinner held on May 27, to the applause of 50 members and their ladies. G3CLG (president of the Stourbridge society) proposed the Toast of the Society, to which G6GR replied. The evening was drawn to a musical close by accordion music by G3KAO.

" Town " and Around

North Kent RS Honorary Treasurer G3HKX reported a healthy credit balance at the recent AGM, and the Honorary Secretary reported an increase in membership. Summer meetings are informal, but much energy will be directed to the operation of GB3ENT at the Erith Bank Holiday Show on all bands from " Top " to " Two." **Grafton** RS (Holloway) rejoices in 26 passes in the May RAE out of 41 candidates—a complete call-sign series! The winter programme opens on September 6 with transmitter operation on three bands, RAE and Morse classes. With four club nights a week, this represents good subscription value, but the society is fortunate to be " adopted " by the LCC. **Chelmsford** takes on a new lease of life with many old members returning to support the younger ones, thanks to a recent series of lectures ranging from " The Electrification of British Railways " to " A Potted History of Ham Radio." NFD provided a satisfactory if not outstanding score, and was voted good fun. **Reigate** ATS are to be congratulated on the very readable account of Amateur Radio included in the local Centenary Carnival programme, when G3BBR/A and G3REI/A were centres of great interest. A publicity handout has been prepared for the Bank Holiday Fête—an idea which we commend to other clubs if members' time is to be saved so that the more interested enquirer can be given that extra attention which may lead to an enrolment. **Reading** ARC will be picnicking at Pangbourne Pavilion (Child Beale Trust) on August 25 and welcome visitors, who will be talked-in on 160 and 2m from 2 p.m. " Dud " Charman on August 31 and a lecture by G8SC on September

28 begin the " winter " session on a high note. " Invaders " from East Cheam were welcomed at the **Clifton** ARS (Beckenham) D/F event, when G3JKY was first to find the hidden transmitter. G3OGE has become Honorary Secretary for the time being. **East Kent** RS, now closed for the summer, keeps members together with a " Net Night " on Tuesdays on 160m. G3MDO will be pleased to answer enquiries from prospective members before the September AGM. **Cray Valley** RS now alternates between lectures (first Thursday in month) and " natter night " (middle Wednesday) with Morse practice.

Welwyn Garden City group regularly runs two mid-year social events. The first of them on June 22, the annual junk sale on the lawn at G5UM, drew no fewer than 49 members, wives and " harmonics." The second event was a sausage supper at a country CTC hostelry not far from Welwyn Garden City. Once again there was a large attendance of family members.

Members of the Lothians Radio Society listening to a tape recording of their President's inaugural address.
(Photo by Edinburgh Evening News)

Club of the Month

LOTHIANS RADIO SOCIETY

This month we journey northwards to Edinburgh, where the Lothians Radio Society are our hosts. In the late 'twenties a few RSGB members met in Edinburgh to further the cause of Amateur Radio in the district, among them such well-known old-timers as Jack Bamford GM5JB (District Representative of the RSGB), Syd Rowden GM6SR, and Sam French GM6FN. This nucleus soon attracted others, notably GM6UU, GM6XI, GM5HL, GM2TM, GM5YX, GM6RZ, GM3UM and GM3BA (now active as G3BA from Sutton Coldfield). These amateurs were resident in what was then known as the RSGB Scottish " D " District.

During the last war the spirit of these early meetings was kept alive by the efforts of Jack Wilson GM6XI at whose home many of the lads on leave and a number of visiting amateurs met for a ragchew. With the resumption of amateur activity the Lothians Radio Society was formed with Tom Nisbet as first President and George Millar GM3UM as Honorary Secretary/Treasurer. The choice of Tom was a good one on two counts—not only was he the local GPO Inspector but he also occupied the position of RSGB Regional Representative for South East Scotland.

An important feature of the Lothians Radio Society and the early groupings is that they have provided over some 30 or more years opportunities and facilities for the furtherance of RSGB activities in South East Scotland. Today it is of course an Affiliated Society, and can claim to be a focal point for RSGB members in Edinburgh, the Lothians and some of the Border counties.

Mention of the LRS would be incomplete without reference to the now defunct Edinburgh Amateur Radio Club, formed *circa* 1949 as a " daughter society " of the Lothians club under the able leadership of the late Dave Simpson GM3EQY. This club ran until about 1960, and during that period operated its own station GM3HAM, on several occasions working with LRS on combined Field Day ventures.

The Lothians Society has had a changing—but constant in numbers—membership over many years, at present totalling 45. Life membership is bestowed as an honour, while " junior " membership (at a reduced subscription for those not gainfully employed) holds all the privileges of the senior rate. Some recently issued licences are held by junior members.

Like most other clubs, the society claims a diverse representation from professions, trades, schools, public services and retired citizens, but within recent years only one YL member. It has always been the policy of the society to hold no funds other than those necessary to pay its way and to ensure its survival. Neither does the society possess any " home " of its own; it meets on the second and fourth Thursday of each month in hired rooms. A permanent clubroom and workshop has often been considered, but the view has always prevailed that use of such facilities would not justify the outlay involved. The club does, however, possess a quantity of Field Day equipment, and has competed regularly since the early days. It also possesses a library ably run by Vic Stewart GM3OWU.

The points which have contributed most to the successful running of the club have been a consistently high standard in a well-balanced programme and the encouragement of a goodly proportion of young members. The society extends a warm invitation to prospective members and visitors to its first meeting of the coming season on September 12 at 7.30 p.m., in the Board Room of the YMCA, South St. Andrew Street, Edinburgh 3. The Honorary Secretary is L. R. Richardson, GM3AKM, 64 Easter Drylaw Place, Edinburgh 4. Annual Subscription is 15s. for senior and 7s. 6d. for junior members. Here is the opportunity to maintain the very fine tradition of service to Amateur Radio and to RSGB built up in the Edinburgh district over the past 40 years.

" If a Man Bites a Dog— "

So far only one comment on the new arrangement of this feature has been received: further comments will be welcomed. Correspondents should aim to be brief but " meaty," and reports of ideas that break new ground are most welcome for dissemination to other clubs and groups.

Please remember that **August 8** is the closing date for the **September** issue; no later material can be accepted because of tight printing schedules. Our thanks to those contributors who have supplied material for this feature—how it continues depends on *you*.

HEADQUARTERS TELEPHONE NUMBERS

HOLborn 7373 and 2444

Courses of Instruction for the RAE

Bradford Technical College, Department of Engineering, Great Horton Road, Bradford, 7. An RAE course will be held on Wednesday evenings from 7 to 9 p.m. The lecturer will be D. M. Pratt, G3KEP. Morse classes, under the direction of A. W. Walmsley, G3ADQ, will be available for applicants who have already passed the RAE. The fee for each course will be 30s. for those over 18 years of age. No fees will be payable by students under 18. Registration will take place on September 9 and 10 at the College. Further details, may be obtained from D. M. Pratt, G3KEP, 30 Lyndale Road, Eldwick, Bingley, Yorkshire.

Brentford Evening Institute, Clifden Road, Brentford, Middlesex. Courses for the RAE and the Morse test will be held during the coming session on Wednesdays and Thursdays respectively. If enough applications are received, a Radio and Electronics Mathematics class will be run as an addition to the RAE course, for those who experience difficulty in attaining the necessary standard in mathematics. Enrolment will take place during the week commencing September 16. The fee for the RAE course will be 30/-; for the Morse class 20/-, or 35/- for both. Further information may be obtained from the Evening Institute Department, Education Offices, Town Hall, Chiswick, London, W.4.

Bristol Technical College, Ashley Down, Bristol 7. Registration will take place on September 12, 13 and 16, for the following courses commencing September 23: (i) Radio Amateur Course, including Morse instruction; (ii) Colour Television Course; (iii) Radio and Television (RTEB) Courses.

Carshalton College for Further Education. Information on an RAE course and a series of Morse classes, which will begin in September, may be obtained from the Registrar, Carshalton College of Further Education, Nightingale Road, Carshalton, Surrey.

Erith Technical College, Erith Road, Belvedere, Kent. A course for the RAE will commence in September. Enrolment will take place at the College from September 10 to 12. Details may be obtained from E. C. Hasted, G3BHF, 54 Plaxtol Road, Erith, Kent.

Glasgow Corporation Further Education Department, Allan Glens School, Montrose Street, Glasgow. Classes for those wishing to obtain amateur transmitting licences will be held on Tuesdays (Radio Theory) and Thursdays (Morse, GPO Regulations, Aerials, BCI and TVI) from 7-9.30 p.m. commencing September 10. The instructor will be A. M. Fraser, GM3AXX (Theory) and J. Sey, GM8MJ (Morse). A General Radio Course (Instructor: A. H. Mason, GM6MS) will also be held. Previous knowledge of radio is neither assumed nor required. The fee will be £1 in both cases.

Halifax: Percival Whitley College of Further Education. The Northern Heights Amateur Radio Society has arranged for an RAE course to be given at the above College on Tuesday evenings during the coming season. Further information is available from the Honorary Secretary of the society, A. Robinson, G3MDW, Candy Cabin, Ogden, Halifax.

Heanor Technical College, Ilkeston Road, Heanor, Derbyshire. An RAE course will start in mid-September, with classes on Friday evenings. Further details may be obtained from the Registrar, or from R. Harrod, G3RWN, 3 Chewton Street, Hill Top, Eastwood, Nottinghamshire.

Ilford Literary Institute (High School for Girls), Cranbrook Road (adjacent to Gants Hill Station, Central Line). The following classes have been arranged by the East London RSGB Group: (i) An eight month course for those intending to take the Examination (Wednesdays 7.15-9.15 p.m.); (ii) A three term preliminary course in preparation for the RAE for those who have no basic knowledge of electricity and magnetism; (iii) Morse and Codes of Practice: a six month course in preparation for the GPO Morse Test for an Amateur (Sound) Licence. It is hoped that arrangements will be made for those who, in the opinion of the instructors, have reached the required speed to be tested at the college by a Post Office representative.

The fees for students living in the Essex County Council area will be 40s. for the RAE Course, 27s. for the Morse and Codes of Practice course, or 50s. for the two courses combined. Students from other parts of London will be admitted as out-county students provided the local authority gives written permission. Enrolment will take place on September 9-12, from 7-8.30 p.m. Classes will commence during the week beginning September 23.

Those intending to take the courses are advised to write to W. G. Hall, G8JM, 48 Hawkdene, North Chingford, London, E.4, immediately so that a place may be reserved. A stamped addressed envelope should be enclosed.

Liverpool: Riversdale Technical College, Riversdale Road, Aigburth, Liverpool 19. An RAE course will be given during the coming session, on Monday and Thursday evenings, from 7 to 9.30 p.m. Theory and Morse instruction will be provided by G8PG and ex-G6KS. If sufficient support is forthcoming, a refresher course for unsuccessful candidates in previous examinations will be held for those applicants who wish to sit for the December 1963 RAE.

London: Montem School, Hornsey Road, Holloway, London, N.7. A series of Monday evening classes for the RAE, with repeat lectures on Wednesdays, will commence on September 23. Classes will take place between 7 and 9 p.m., and will be conducted by S. H. Iles, G3BWQ, and R. H. Smart, G3MMC. A Morse session will follow between 9 and 10 p.m., under the supervision of A. Ralph. The fee for either a single or combined course is 25s. Enrolment will be from September 16 to 20 inclusive, from 7 to 9 p.m. at the school. Application should be made first, however, to the Honorary Secretary of the Grafton Radio Society, A. W. H. Wennell, G2CJN, 145 Uxendon Hill, Wembley Park, Middlesex, in order to reserve a place.

Northwood Evening Institute, Potter Street, Northwood Hills. Middlesex. Three courses in preparation for the RAE and Morse Test will commence on September 23. Instruction for the RAE will take place on Mondays, with Morse Practice on Tuesdays, and practical work in relation to Amateur Radio on Thursdays. The classes will be held between 7.15 and 9.15 p.m. each evening. Enrolment will take place from 6.30 p.m. to 8.30 p.m. on September 16, 17 and 18. The instructors will be G. P. Anderson, A.M.I.E.E., G2QY, and A. G. Goddard, G3NQR.

Plymouth College of Technology, Plymouth, Devon. A course in preparation for the RAE will commence in September exclusively for the benefit of blind persons. It will deal with the practical problems faced by blind radio amateurs. Queries will be dealt with by A. F. Ward, G3HSP, Electrical Engineering Department, Plymouth College of Technology, Plymouth, Devon, who will also welcome advice on the problems of the sightless in this type of work.

Portsmouth: North End Evening Institute. An RAE course, to be held on Thursdays, will commence in September. Enquiries should be addressed to the Secretary, Eastney

(Continued on page 138)

CONTEST NEWS

— RESULTS —— REPORTS —— RULES —

Listeners' V.H.F. Contest 1963

The Listeners' V.H.F. Contest held in connection with the 144 Mc/s Open Contest on March 2 and 3, 1963, brought in 11 logs compared with six last year. The logs were all of a very high standard and remarkably free from errors, those which were detected being relatively minor ones.

The winner this year was again A. W. Blandford, B.R.S.18572, operating at Mitcham, Surrey, followed by R. Pett, A.3019, of Ruislip, Middlesex.

Relatively few of the contacts logged could be really called DX and only eight stations were heard outside the entrants' own countries. More c.w. contacts were logged than in last year's event though surprisingly few in view of the extra points they carried.

This year's event was marred because some entrants confused the rules of the contest with notes published in the February, 1963, issue of the BULLETIN. It is not usual in transmitting contests to award points for more than one contact with a specific station and it was intended that the same standards should apply to the listener event. Two entrants wasted considerable time and energy logging repeated contacts by their local stations and would have done better to have listened for the more valuable DX.

			Contacts logged at					
			10	20	25	50		
Posn.	Name	No.	pts.	pts.	pts.	pts.	Counties	Score
1	A. W. Blandford	B.R.S.18572	115	—	—	—	24	1750
2	R. Pett	A.3019	105	1	—	1	19	1595
3	R. A. Fuller	A.2251	88	3	3	1	22	1515
4	R. W. F. Thomas	B.R.S.15822	95	4	—	1	17	1505
5	D. S. Kendall	B.R.S.24643	82	2	—	—	16	1260
6	B. D. Comer	A.3071	68	—	—	—	22	1230
7	R. A. Ham	B.R.S.15744	56	—	—	—	14	910
8	B. Tinton	A.2380	42	1	—	—	16	840
9	S. W. Yeomanson	A.3047	51	—	—	—	8	710
10	J. Letts	A.3359	39	1	—	—	12	704
11	R. Watts	A.2865	16	—	5	—	9	510

Equipment

The receivers used, though of various designs, were in general of a high standard and the aerials remarkably so. Front-end valves included one A.2521; four 6CW4; two A.1714; one E88CC; one 12AT7 and two surplus units which could not be traced. Main receivers included three AR88; three HRO; two 680X; a 1475 and a CR100. One HRO owner also had an R208 available. Aerials were two 8-over-8, one 4-over-4, one 9, three 8, and two five element Yagis and two dipoles.

Check Logs

The following sent in check logs for the Listeners' V.H.F. Contest and the 144 Mc/s Open Contest and are thanked for their assistance: G2UJ, G2HIF, G2DHV, G3HBW, G3NNG, GC2FZC, and B.R.S.22726.

Low Power Contest 1963

The Low Power Contest held on April 6-7 attracted 13 entries, three of which had all transistorized transmitting equipment. Owing to a clash with European contests difficulty was experienced by many of the competitors with their QRP signals. Unfortunately, as the contest calendar is planned nearly 18 months in advance, it is not always possible to avoid such clashes. Many competitors commented on the uselessness of the night hours owing to the very strong commercial stations. The Contests Committee will consider this point when formulating rules for next year.

The contest was won by Mrs. Mary Moore, G3ORU, using a fully transistorized transmitter running about 0·5 watt. The runner-up was V. S. Curling, G6VC, who will receive a certificate of merit as will B.R.S.24733 for his useful check log.

LOW POWER CONTEST

Position	Call-sign	Points
1	G3ORU	2354
2	G6VC	1824
3	G3JVJ	1296
4	G4JW	1140
5	G3BY	1040
6	G6FU	860
7	G2BHN	680
8	G3CWL	490
9	G4AL	400
10	G3JKY/P	357
11	G3NYA	345
12	G2BP	115
13	G3CGD	22

First 144 Mc/s Portable Contest 1963

The First 144 Mc/s Portable Contest of 1963, which took place on May 5, was marred by unseasonable weather. Many competitors had to contend with rain and gales; some even had snow! The radio and weather conditions were just about as bad as they could have been for the time of the year.

In spite of all this, a very large number of portable stations participated and the entry was accordingly increased. Those competitors that sent comments said that they enjoyed the contest in spite of conditions. Very few continental stations were worked and reports of contacts over 200 miles were rare.

The winning station this year was entered by the Northampton Short Wave Radio Club under the call-sign G3GWB/P. They operated from Ashey Down, Isle of Wight, and won by a considerable margin from G3PIA/P, the club station of the Atomic Energy Research Establishment (Harwell) Amateur Radio Club. Several other club stations also entered.

The following are thanked for their useful check logs: G2BQ, G2YU, G3EHR, G3HWR, A.2767, B.R.S.24455 and B.R.S.24643.

Posn.	Call-sign	Points	Posn.	Call-sign	Points
1	G3GWB/P	12,388	29	G3OXD/P	4825
2	G3PIA/P	10,870	30	G3KEU/P	4401
3	G2ASF/P	10,450	31	G3OSC/P	3805
4	GW4LU/P	10,073	32	G3OCQ/P	3790
5	G3KMT/P	9646	33	G3IFV/P	3509
6	G5ZT/P	9538	34	G3PYE/P	3405
7	G3JWQ/P	8955	35	G3LJB/P	2286
8	GW3JJA/P	8784	36	G2DNV/P	3252
9	G3MAX/P	8547	37	G3LSF/P	3098
10	G3EVV/P	7882	38	GW3RNH/P	3057
11	G5HZ/P	7533	39	G3EMU/P	2805
12	G3FEX/P	7460	40	G3LXP/P	2613
13	G3MAR/P	7377	41	G3GBU/P	2538
14	GW3KMS/P	7160	42	GW3MFY/P	2466
15	GW3RUF/P	7055	43	G3PJI/P	2423
16	G3ENY/P	7052	44	G3FDW/P	2324
17	G3OBD/P	7015	45	G3NJF/P	2037
18	G3ION/P	6774	46	G3DIT/P	1655
19	G3COJ/P	6553	47	G3JDM/P	1567
20	GW3ATZ/P	6421	48	G3MRJ/M	1545
21	G3ERD/P	6324	49	GW3CBY/P	1400
22	GW3KCB/P	6307	*	G3LAG/P	1380
23	G3CGQ/P	6247	50	GW3PWH/P	1082
24	G2CPM/P	6242	51	G3OYU/P	992
25	G3FD/P	6101	52	GM6XW/P	770
26	GW3NUE/P	5753	53	GM3POK/P	393
27	G3AYT/P	5693			
28	G3MRA/P	5267			

*Incomplete entry.

First 420 Mc/s Open Contest 1963

The first 420 Mc/s Open Contest, held on May 26, 1963, was not supported as well as its predecessors, and conditions were apparently not very favourable, though this impression could be due to lack of activity. G3NNG/P, however, stated that conditions were average, with weather which was better than that experienced during many years of 420 Mc/s Open Contests.

The two leading stations, G3LTF and G3LQR, both used high power and contacted five PAs and one ON; all valuable contributions to their success. The best DX was claimed by G3LTF, with a 180 mile contact. Stations in Cambridge did not have the fortune to raise continental stations, which was a little surprising, for in Essex continental signals peaked between S5 and S9 on both phone and c.w.

Two contestants who did agree that the band conditions were poor were G2XV and G3OXD/A who compared it with 2m. In fact, G3OXD/A said he appeared to be the only occupant of the band at 01.00 GMT, and for that matter, probably was. The strength of signals began to improve by 05.00, when GB3GEC rose from RS56 to 59+. Conditions started to revert to their original state, however, at 08.00, and in the subsequent eight hours, only 10 additional stations were raised.

G3ENY reported that G3LTF, G3EJO and G6FK escaped, and G3AC had the same experiences with G3GDR, G5UM, G2WJ, and G2BDX. G3NNG/P heard G2OI, but could not raise him, and the same occurred when attempts were made to contact G2XV. G3NNG/P calculated his average mileage for contacts to be 59·6.

Thanks are extended to G3MEH and G3MI who provided check logs. The Contests Committee would, however, have appreciated more logs from other active but non-competing stations.

The tabulated results have been arranged to give details, where available, of the aerials and power amplifiers in use. No attempt has been made, however, to include details of receivers for the types were multifarious in the extreme.

D/F National Final

Details of the D/F National Final to be held on September 15, 1963, will be sent by post to all those qualified to take part.

D/F Qualifying Events

Details of the Newbury Qualifying Event are as follows:

NEWBURY

Sunday, August 11, 1963
Organizer: J. A. Gale, G3LLK, Wild Hedges, Crookham Common, near Newbury, Berks. (Telephone: Newbury 3304).
Frequency: 1875 kc/s.
Call-sign: G3LLK/P.
Map: Ordnance Survey, New Popular Edition, Sheet No. 158.
Assembly Point: Snelsmore Common on B.4494 at NGR 464710.
Assembly Time: 13.00 BST.
Entries and Tea: Intending competitors should notify the Organizer by August 2, stating the number in their party requiring tea. Tea venue will be supplied in sealed envelope at start.

First 420 Mc/s Open Contest 1963

Position	Call-sign	Points	Single Multiple	Aerial	Height (ft.)	P.A.	Power
1	G3LTF	2,729	S	3 × 24	45	4X250B	150 watts
2	G3LQR	1,975	S	16 ele.	50	4X250B	150 watts max. on c.w.
3	G3NNG/P	1,454	S	8-over-8	30	DET 24	10 watts
4	G3CIW	1,324	S	8-over-8		QQV06/40	60 watts
5	G3EGV/P	1,317	S	24 ele.		ACT 22	50 watts
6	G3JWQ/P	1,292	S	4-over-4-over-4		QQV03/20	10 watts
7	G3LHA / G3LHA/P	1,226	S	8-over-8	34	QQV03/20A	Tripler
8	G3OXD/A	1,225	M	8-over-8		DET 24	
9	G3PYE/P	1,030	M	2 × 9 elements		QQV03/20A	Tripler 30 watts
10	G2XV	928	S	40 ele.		QQV06/40	
11	G2HDJ	885	S	4 × 11		QQV07/50	
12	G3FD/P	796	S	7-over-7		QQV02/6	
13	G4AC	727	S	4-over-4	33	QQV06/40	Tripler
14	G3BAK/P	655	S	8-over-8	15	A2521	3·5 watts
15	G2FCA	618	S	4-over-4		QQV03/20A	30 watts
16	G5DF	547	S	16 ele.		CV257	40 watts
17	G3ENY	526	S	16 ele.		QQV03/20A	
18	G3FIJ	477	S	4 × 3-over-3	40	QQV06/40A	
19	G3HRH	335	S	8-over-8	20	QQV03/20A	
20	GW3ATM/P	334	S	16 ele.	90	832	
21	G3HWR	317	S	7-over-7		QQV02/6	
22	G5UM	254	S	24 ele.		QQV03/20	12 watts
23	G3NOH	153	S	16 ele.		DET 24	10 watts
24	G3YH	18	S	6-over-6		QQV03/20A	12 watts

Second 420 Mc/s Open Contest 1963

Members taking part in this contest are recommended to operate between 432-434 Mc/s in accordance with the British Isles 70cm Band Plan. As stations in this contest can work from more than one location they have the advantage of claiming the score for the best contact with any particular station. This applies equally to static stations who may work them at more than one site.

1. When: 18.00 GMT on Saturday to 18.00 GMT on Sunday, **October 27, 1963.**
2. Station Locations: Stations may be operated from more than one site but the National Grid Full Six Figure reference must be recorded in the log for each location in the case of entries from G, GD, GM and GW. In all other cases, entrants must show latitude and longitude.
3. The General Rules relating to RSGB Contests, as published in the January, 1963 issue of the *RSGB Bulletin*, will apply except as superseded by the rules of this Contest.
4. Eligible Entrants: All fully paid-up members of the RSGB resident in Europe. Multiple-operator entries will be accepted provided only one call-sign is used. /T stations are not eligible to take part.
5. Contacts: May be made on either A1, A3, A3a or F3.
6. Scoring: Points will be scored on the basis of one point per mile.
7. Contest Exchanges: RST (RS) reports followed by the contact number and location (e.g. RST559001 5NE Wigan). This location must be identifiable on the 10 mile to the inch Ordnance Survey Map.
8. Logs: (a) Must be tabulated in columns headed (in this order) " Date/Time (GMT)," " Call-sign of station contacted," " My report on his signals and serial number sent," " His report on my signals and serial number received," " Location of station contacted as received," " Points claimed."
Logs must show clearly when station locations are changed.
(b) The cover sheet must be made out in accordance with RSGB Contests Rule 5 and the declaration signed. The locations of the station as transmitted must be given on the cover sheet.
(c) Entries must be postmarked not later than **Tuesday, November 5, 1963.**
9. Awards: At the discretion of the Council, a **miniature cup** will be awarded to the winner and **certificates of merit** to the runner-up, the leading portable station and to the non-transmitting member submitting the best check log in the opinion of the Contests Committee.

Rules for IARU Region I V.H.F. Contests

Five official v.h.f. contests shall be held each year under the auspices of the Region I IARU V.H.F. Committee, but each national Society shall retain the right to organize such extra contests as it may see fit. The first four official contests each year shall be national events designed to increase v.h.f activity in the countries concerned but QSOs with foreign amateurs are permitted. Rules for these contests are optional and any country may make its own, but the use of the international rules is recommended. The fifth official contest will be known as the IARU Region I V.H.F. Contest and will be arranged by a different Region I Society each year. The sequence will be Austria (1963), Belgium, Denmark, France, Germany, Great Britain, Holland, Italy, Yugoslavia, Sweden and Switzerland.

For the Region I IARU V.H.F. Contest on September 7-8, 1963, the official rules, agreed at the Region I Conference in Malmö, Sweden, in June, 1963, will apply. Attention is drawn to the scoring system described in Rule 8 and to the adoption of the full five character QRA Locator, described in *Four Metres and Down* in this issue.

1. **Eligible Entrants.** All licensed radio amateurs resident in Region I. Multiple operator entries must be so declared and will be accepted provided only one call-sign is used. Contestants must operate within the letter and spirit of the contest and at no greater power than permitted in the ordinary licences of their country. Stations operating under special high power licences do so *hors concours* and cannot be placed in the contest proper.

2. **Contest Sections.** The first two and the fourth and fifth contests will comprise the following sections: (i) Fixed Stations—2m; (ii) Portable/Mobile Stations—2m; (iii) Fixed Stations—70 cm; (iv) Portable/Mobile Stations—70cm; (v) Fixed Stations—24cm; (vi) Portable/Mobile Stations—24cm.

The third contest will be operated on 70cm and 24cm only (*Note 2*).

Portable/Mobile stations must operate from the same location throughout the events. Multi-operator entrants will be indicated in the results.

3. **Dates of Contests.** The four general contests will take place during the first weekends of March, May, July and September each year; the third contest (70 and 24cm) will take place during the last weekend in May. The sequence 31/1 or similar not to count.

4. **Duration of Contests.** The contests will commence at 18.00 GMT on the Saturday and will end at 18.00 GMT on the Sunday.

5. **Number of Contacts.** Each station can be worked once only on each band whether fixed, portable or mobile. If a station is worked again during the same contest on the same band only one contact will count for points, but any duplicate contacts should be logged without claim for points and should be clearly marked as duplicates.

6. **Types of Emission.** Contacts may be made on A1, A3, A3a or F3.

7. **Contest Exchanges.** Code numbers exchanged during each contact shall consist of the RS or RST report followed by a serial number commencing at 001 for the first contact on each band and increasing by one for each successive contact on each band. The exchange must be immediately followed by the QRA Locator of the sending stations (example—59003CX24J or 57902IYG46E). QTHs may be exchanged in addition if desired.

8. **Scoring.** Points will be scored on the basis of **one point per kilometre.** The final claimed score must be shown at the top part of the first sheet.

9. **Entries.** †Entries must be set out as shown in the example below. In the case of the IARU Region I V.H.F. Contest two copies of the entry must be sent to the National V.H.F. Manager concerned postmarked not later than the second Sunday following the contest weekend. Late entries will not be accepted. The judging of the entries shall be the responsibility of the organizing Society whose decision shall be final. Submission of a log implies acceptance of the rules (*Note 1*).

10. **Disqualification.** Entrants deliberately contravening any of these rules shall be disqualified. Minor errors may result in loss of points. Errors in call-signs and code numbers will be penalized by deducting the following percentage of claimed scores for both stations. One error 25 per cent, two errors 50 per cent, three or more errors 100 per cent. The claimed contact will be disqualified (*a*) for an obviously wrong QTH, when no QRA locator is exchanged; (*b*) there is a time error of more than 10 minutes. Contest entrants will not be penalized for failure of non-entrants to comply with these rules.

11. **Awards.** The winner of each section will receive a certificate. The top scorer on 2m whether fixed or portable will be awarded the Region I V.H.F. trophy. The winner in the remaining 2m category will be awarded the PZK cup.

Notes.

(1) Not later than the seventh Sunday following IARU Region I V.H.F. Contest the V.H.F. Manager or properly constituted Contest Committee will forward to the Society organizing the contest one copy of each entry, after examining the logs and certifying them to be acceptable to the best of their knowledge.

(2) The May contest will be known as the IARU Region I U.H.F. Contest.

† It should be noted that the form of entry for V.H.F. National Field Day on September 7-8, 1963, differs from that for the Region I V.H.F. Contest to be held the same weekend.

Sample Contest Log Sheet

Contest..... Date..... Claimed Score.....

Section..... Call-sign.....

Name .....

Home address..... QRA Locator.....

Location of station.....Latitude.....Longitude.....

Height above sea level in metres.....

Transmitter..... Input power.....watts

Operating frequencies..... Crystal or v.f.o.?.....

Receiver..... Aerials.....

Date/ Time	Call-sign	Serial sent	Numbers received	QTH	Emission	Distance km	Points claimed

DECLARATION. *I declare that this station was operated strictly in accordance with the rules and spirit of the contest and I agree that the ruling of the organizing society shall be final in all cases of dispute.*

Date..... Signed.....

RAE Courses (Continued from page 135)

Modern Boys' School, Reginald Road, Southsea, Hants.

Reading: E. P. Collier Evening Institute, Swansea Road. Registration for a series of lectures giving instruction for the RAE will take place on the first evening of the course: Wednesday, September 25. The fees will be 20s. for applicants of 19 years and under, and 50s. for those over the age of 19.

Redditch College of Further Education. Enrolment for a course in preparation for the May 1964 RAE will take place during the week commencing September 9. Further information may be obtained from the College.

Wembley Evening Institute, Copland School, High Road, Wembley. Enrolment for an RAE course will take place on September 16 to 19, from 7.15 to 9.15 p.m. Classes will be held on Mondays (Morse: 7-8 p.m.; Radio: 8-10 p.m.), and will commence on September 23.

Weston-super-Mare Technical College, Department of Engineering. An RAE evening course will be held during the coming session. There will also be part time day and evening courses for Radio and Television Servicing, Electronic Servicing, and Telecommunications Technicians.

December RAE

The Erith Technical College, Erith Road, Belvedere, Kent, is prepared to act as a centre for the Radio Amateurs' Examination to be held in December, 1963.

Publications for the Radio Amateur and Shortwave Listener

RSGB PUBLICATIONS

AMATEUR RADIO HANDBOOK. Covers the whole field of Amateur Radio transmission and reception from fundamentals to station operation. Profusely illustrated with nearly 700 line diagrams and more than 100 half-tones. 544 pages bound in maroon buckram linson. **Price 36s. 6d. post paid in carton.**

RADIO DATA REFERENCE BOOK. Data for the radio designer, engineer and amateur presented in the form of curves, tables and charts. 136 pages bound in blue buckram linson. **Price 14s. post paid in carton.**

RADIO AMATEURS' EXAMINATION MANUAL. Covers the syllabus of the City and Guilds of London Institute examination. Chapters on licence requirements and conditions, interference, receivers, circuits, calculations, semiconductors, aerials and propagation. Essential reading for those wishing to obtain the Amateur (Sound) Licence. More than 50 line diagrams. 56 pages. **Price 5s. 6d. post paid.**

A GUIDE TO AMATEUR RADIO. Provides the newcomer to Amateur Radio with basic information on receivers, transmitters, and aerials. Explains how to obtain an amateur transmitting licence. Well illustrated, 80 pages. **Price 4s. post paid.**

THE MORSE CODE FOR RADIO AMATEURS. A carefully graded selection of exercises designed to make learning the Morse code as simple as possible. 24 pages. **Price 1s. 9d. post paid.**

COMMUNICATION RECEIVERS. A reprint in booklet form of the series of articles by G. R. B. Thornley originally published in the RSGB BULLETIN. The G2DAF high performance communication receiver is described in detail. 32 pages. **Price 3s. post paid.**

SERVICE VALVE EQUIVALENTS. Lists the commercial equivalents of all CV numbered valves, cathode ray tubes and semiconductors useful to the radio amateur and home constructor. Equivalents of British Army, Royal Navy, Royal Air Force and US Signal Corps valves are also given. Pocket size. 48 pages. **Price 3s. 6d. post paid.**

RSGB AMATEUR RADIO CALL BOOK. The most accurate and comprehensive list of amateur fixed and mobile stations in the United Kingdom and the Republic of Ireland. 80 pages. **Price 5s. post paid.**

OTHER BRITISH PUBLICATIONS

RADIO AMATEUR OPERATOR'S HANDBOOK. Contains a list of Amateur Prefixes with provision for heard/worked record, W.A.S. chart, Zones record, Counties Heard or Worked record, Call Areas, Directional bearings, Standard Frequency transmissions, etc. Published by Data Publications Ltd. 48 pages. **Price 5s. post paid.**

GUIDE TO BROADCASTING STATIONS. Lists sound and television broadcasting stations operating in the long, medium and v.h.f. bands in Europe and short wave stations of the world. Also contains Standard Time table, Frequency Allocations and notes on wavelength and frequency conversion. A *Wireless World* publication. **Price 4s. post paid.**

MANUAL OF TRANSISTOR CIRCUITS. Intended to help those interested in radio and electronics to realize the possibilities of the transistor. In addition, it is an excellent reference source of semiconductor circuits. Published by Mullard Ltd. 308 pages. **Price 13s. 6d. post paid.**

TRANSISTOR RADIOS, CIRCUITRY AND SERVICING. Deals with the principles of transistors, printed wiring, receiver circuits and the servicing of transistor radios, with a brief review of the test equipment necessary. Published by Mullard Ltd. 72 pages. **Price 5s. 9d. post paid.**

RADIO VALVE DATA. Characteristics of 4,800 valves, transistors, rectifiers and cathode ray tubes. Base connections are included. Seventh edition compiled by the staff of *Wireless World*. 156 pages. **Price 7s. post paid.**

SHORT WAVE RECEIVERS FOR THE BEGINNER. Describes 1 and 2 valve battery receivers, 2 and 3 valve mains operated short wave receivers, with notes on soldering and an introduction to the short waves. Published by Data Publications Ltd. 72 pages. **Price 6s. 6d. post paid.**

AMERICAN PUBLICATIONS

ARRL RADIO AMATEUR'S HANDBOOK, 1963. One of the best-known textbooks for the amateur written from the American point of view. Now in its 40th edition. 592 pages plus 34 pages of valve tables, 14 page index and 111 page advertising section. **Price 38s. 6d. post paid.**

RTTY HANDBOOK. A new edition of the well-known *CQ* publication by Byron Kretzman, W2JTP. A valuable textbook for both the beginning and experienced RTTY'er. 191 pages. **Price 30s. post paid.**

CQ NEW SIDEBAND HANDBOOK. The fundamentals of single and double sideband suppressed carrier transmission with many practical designs. Details of a number of commercial equipments are given. 232 pages. **Price 25s. 6d. post paid.**

SINGLE SIDEBAND FOR THE RADIO AMATEUR. Outstanding articles from *QST* on all aspects of s.s.b. transmission and reception. 224 pages. **Price 18s. 6d. post paid.**

MOBILE MANUAL FOR RADIO AMATEURS. A selection of articles from *QST* on mobile operation—transmission, reception, aerials, noise suppression, power supplies. 282 pages. **Price 25s. post paid.**

CQ MOBILE HANDBOOK. By Bill Orr, W6SAI. Chapters devoted to car ignition systems, power supplies, receivers, transmitters, aerials, s.s.b. equipment, noise problems and test equipment. 240 pages. **Price 24s. 6d. post paid.**

ARRL ANTENNA BOOK. Probably the best-known textbook on aerial systems for the amateur station. 320 pages. **Price 19s. 6d. post paid.**

CQ ANTHOLOGY 1952-1959. More than 75 articles published in *CQ* during the years 1952-1959. 256 pages. **Price 23s. post paid.** A few copies of *CQ Anthology 1945-1952* are still available, **price 16s. 6d. post paid.**

HINTS AND KINKS, Volume 6. A further selection of helpful ideas from *QST's* long-running feature. 128 pages. **Price 10s. 6d. post paid.**

SURPLUS SCHEMATICS. Circuit diagrams for a wide range of the most popular American surplus equipment. A useful addition to any club library. A *CQ* publication. 111 pages. **Price 19s. 6d. post paid.**

TELEVISION INTERFERENCE—Its Causes and Cures. By Phil Rand, W1DBM. The second edition of this well-known American guide to the cure of interference. Well illustrated with diagrams, photos, charts and tables. 56 pages. **Price 14s. 6d. post paid.**

UNDERSTANDING AMATEUR RADIO. A new ARRL publication containing down-to-earth information on circuit design, construction of receivers, transmitters, aerials and accessories, testing and adjustment. Sixteen easily understood chapters. 313 pages plus six page index. **Price 18s. post paid.**

A COURSE IN RADIO FUNDAMENTALS. A step-by-step course in the principles required for a basic understanding of amateur radio. Intended to be used in conjunction with the *ARRL Radio Amateur's Handbook*. 103 pages. **Price 10s. 6d. post paid.**

HOW TO BECOME A RADIO AMATEUR. Information on learning Morse, getting on the air, the fundamentals of radio, a two valve receiver and a simple one valve transmitter. An ARRL publication. 148 pages. **Price 5s. post paid.**

LEARNING THE RADIOTELEGRAPH CODE. Designed to help the beginner overcome the usual stumbling blocks encountered in learning the Morse code. One chapter is devoted to selected exercises. An ARRL publication. 48 pages. **Price 5s. post paid.**

AMERICAN MAGAZINE SUBSCRIPTIONS

QST. Journal of the American Radio Relay League. Devoted entirely to Amateur Radio. Monthly, direct from USA **Price 43s. 6d. p.a.**

CQ, the Radio Amateur's Journal. Covers the whole field of Amateur Radio. Incorporates the monthly *V.H.F. Amateur* as a bound-in supplement. Monthly, direct from USA **Price 44s. p.a.**

73 Magazine. Almost exclusively technical and constructional articles. Monthly, direct from USA **Price 28s. 6d. p.a.**

RSGB PUBLICATIONS (Dept. B)

28 LITTLE RUSSELL STREET, LONDON, W.C.1

Forthcoming Events

Details for inclusion in this feature should be sent to the appropriate Regional Representatives by the first of the month preceding publication. A.R.s and club secretaries are reminded that the information submitted must include the date, time and venue of the meeting and, whenever possible, details of the lecture or other event being arranged. Regional Representatives are requested to set out the copy, preferably typed double spaced, in the style used below. Standing instructions for more than three months ahead cannot be accepted.

REGION 1

Ainsdale (ARS).—August 14 and 28, Russell Road, Methodist Church Hall, Southport.
Blackburn.—Fridays, 8 p.m., West View Hotel, Revidge Road.
Blackpool (B & FARS).—Mondays, 8 p.m., Pontins Holiday Camp, Squires Gate.
Bury (BRS).—August 13, "Brains Trust," Knowsley Hotel, Kay Gardens, 8 p.m.
Chester.—Tuesdays, 8 p.m., Y.M.C.A.
Eccles (E & DRC).—Tuesdays, 8 p.m., The Congregational Mission Church, King Street.
Liverpool (L & DARS).—Tuesdays, 8 p.m., Gladstone Mission Hall, Queens Drive, Stonycroft.
Macclesfield.—August 6, 20, September 3, 42 Jordongate.
Manchester (M & DARS).—Wednesdays, 7.30 p.m., 203 Droylsden Road, Newton Heath, Manchester 10. **(SMRC).**—Fridays, 7.45 p.m., Rackhouse Community Centre, Rackhouse, Daine Avenue, Northenden.
Morecambe.—August 7, September 4, 125 Regent Road.
Preston.—August 13, ("R.F. Power Transistors", G4CJ), August 27, September 10, "Visit by Regional Representative." All meetings start with a Morse practice at 7.30 p.m., St. Paul's School, Pole Street.
Southport (SRS).—Wednesdays, 8.30 p.m., Sea Cadets Camp, The Esplanade.
Stockport.—August 14 and 28, September 11, 8 p.m., The Blossoms Hotel, Buxton Road.
Wirral.—August 7 ("Evening D.F. Contest.") August 21 ("First Aid for Electric Shock.") September 4 "Junk Sale." 7.45 p.m. Harding House, Park Road West, Claughton.

REGION 2

Bradford.—August 20, 27 (Informal), 7.30 p.m., 66 Little Horton Lane, Bradford.
Halifax (Northern Heights ARC).—August 10 (Demonstration Station at Halifax Agricultural Show), August 17 (Demonstration Station at Forest Cottage, Illingworth). August 14 (Ragchew), August 28 (Members' Slides), 7.30 p.m., Sportsman Inn, Ogden, Halifax.
Sheffield.—August 9 ("Nuvistors and their Applications in V.H.F. Converters," by J. Bell, G3JON), 8 p.m., 8 Sandbeck Place.

REGION 3

Birmingham (MARS).—August 20, 7.30 p.m., Birmingham and Midland Institute, Paradise Street, Birmingham. **(Slade).**—August 9, 23, 7.45 p.m., The Church House, High Street, Erdington. **(MRCC).**—August 2, Windmill House, Weatheroak, Wythall, Birmingham.
Cannock (CCARS).—September 5, 7.30 p.m., The Tavern, Bridgetown.
Coventry (CARS).—Mondays, 8 p.m., Willenhall Scout H.Q., Little Farm Buildings, Littlethorpe, St. James' Lane, Willenhall, Coventry.
Lichfield (ARS).—First Monday in each month, 7.30 p.m., Swann Inn, Lichfield.
Stourbridge (STARS).—August 23 (Informal), 8 p.m., Bell Hotel, Stourbridge.

LOOKING AHEAD

September 8.—G6UT's Ham Party.
September 14.—Region 10 Regional Meeting, Cardiff.
September 22.—Region 1 Field Day.
September 22.—Woburn Abbey National Mobile Rally.
September 22.—Surrey Radio Contact Club 144 Mc/s D/F Hunt.
October 30-November 2.—RSGB Radio Communications Exhibition.
December 20.—RSGB Annual General Meeting.
The dates of mobile rallies are given in *Mobile Column*.

Sutton Coldfield (ARS).—August 9, 23, 7.30 p.m., 92 The Parade, Sutton Coldfield.

REGION 4

Burton on Trent (ARS).—Wednesdays, 7.30 p.m., Club Rooms, Stapenhill Institute, Burton on Trent.
Chesterfield (C & DARS).—August 14, September 11, 7.30 p.m., Newbold Observatory, Newbold Road, Chesterfield.
Derby (D & DARS).—August 7 (Surplus Sale), August 14 (Rally arrangements at Ryknell School), August 18 (Mobile Rally), August 21, 28 (D/F Practice Run), September 4 (Surplus Sale), 7.30 p.m., Room No. 4, 119 Green Lane, Derby.
Derby (DSW Exp. Soc.).—Fridays, 7.30 p.m., Sundays, 10.30 a.m., Club Rooms, Nunsfield House, Boulton Lane, Alvaston, Derby.
Grantham (G & DARS).—Mondays, 7.30 p.m., Club Room, rear of Manners Arms Hotel, London Road, Grantham.
Grimsby (G & DARS).—August 1 ("Visit to Trawler," by K. Waddington), August 15 (Ragchew), August 29 (Sale), 8 p.m., Grimsby Model Engineers Club Room, Fletchers Yard, Wellowgate, Grimsby.
Leicester (LRS).—Mondays, 7.30 p.m., Club Rooms, Old Hall Farm, Braunstone Lane, Leicester.
Loughborough (RCL).—Fridays, 7.30 p.m., Corporation Hotel, Wharncliffe Road, Loughborough.
Lincoln (LSWC).—First Wednesday in each month, 7.30 p.m., Lincoln Technical College, Cathedral Street, Lincoln.
Mansfield (MRC).—Fridays, 7.30 p.m., Hope and Anchor, Union Street, Mansfield.
Nottingham (ARCN).—Tuesdays, Thursdays, Room No. 3, Sherwood Community Centre, Woodthorpe House, Mansfield Road, Sherwood.
Northampton (NSWC).—Thursdays, 7 p.m., Allen's Pram Works, 8 Duke Street, Northampton.
Peterborough (P & DARS).—September 6, 7.30 p.m., Riverside Site, Alwalton.
Worksop (NNARS).—Tuesdays (Beginners), Thursdays (Informal), 7.30 p.m., Club Rooms, Victoria Institute, Eastgate, Worksop, Notts.

REGION 5

Cambridge (C & DARC).—Fridays, 7.30 p.m., Club Headquarters, Corporation Yard, Victoria Road, Cambridge. No formal meetings during August, but visiting amateurs are welcome.
March (M & DRAS).—Tuesdays, 7.30 p.m., Police Headquarters, High Street.
Shefford (S & DARS).—August 1 (no meeting), August 8 ("N.F.D. Transmitter Construction"), August 15 (Talk by J. Harper, G3RLJ), August 22 ("Any Questions?"), August 29 (Invitation to Stevenage and Peterborough clubs, and Junk sale), Digswell House.

REGION 6

Cheltenham.—First Thursday in each month, 8 p.m., Great Western Hotel, Clarence Street.

REGION 7

Acton, Brentford & Chiswick (ABCRC).—August 20 ("Field Day and Other Transparencies"), 7.30 p.m., AEU Club, 66 High Road, Chiswick.
Bexleyheath (NKRS).—August 8, 22 (Informal Meetings), 7.30 p.m., Congregational Hall, Chapel Road, Bexleyheath.
Barnet (BRC).—August 27, 8 p.m., Red Lion Hotel, Barnet.
Croydon (SRCC).—August 9, 7.30 p.m., Blacksmiths Arms, South End, Croydon.
Dorking (D & DRS).—August 13, 8 p.m., (Informal Meeting), Wheatsheaf, Dorking. August 27, 8 p.m. (Informal Meeting), King's Head, Holmbury St. Mary.
East Ham.—Tuesdays, fortnightly, 8 p.m., 12 Leigh Road, East Ham.
East Molesey (TVARTS).—August 7, 8 p.m. (Talk by G. Leicester, G3IKC, in conjunction with the BBC Engineering Branch on "UHF Propagation and 625 Line TV"), Carnarvon Castle Hotel, Hampton Court.
Edgware & Hendon (EADRS).—August 19, 8 p.m., John Keble Hall, Church Close, Deans Lane, Edgware.
Enfield.—August 20 (Junk Sale), 7.30 p.m., George Spicer School, Southbury Road, Enfield.
Gravesend (GRS).—August 21, 7.30 p.m., RAFA Club, 17 Overcliffe, Gravesend.
Guildford (G & DRS).—Second & fourth Friday in each month, 8 p.m., City Cafe, Onslow Street, Guildford.
Harlow.—Tuesdays, 7.30 p.m., rear of G3ERN (G. E. Read), High Street, Harlow.
Harlow (SRC).—Wednesdays, 7 p.m., Edinburgh Way, Harlow.
Harrow (RSH).—Fridays, 8 p.m., Roxeth Manor County School, Eastcote Lane, Harrow.
Holloway (GRS).—Closed during August—reopens September 6. Mondays (RAE and Morse), 7 p.m., Fridays (Club), 7.30 p.m., Montem School, Hornsey Road, N.7.
Hounslow (HADRC).—Mondays, 7.30 p.m., Isleworth Town School, Twickenham Road, Hounslow.
Ilford.—Thursdays, 8 p.m., 579 High Road, Ilford. (near Seven Kings Station).
Kingston.—Alternate Thursdays (Lectures), 8 p.m., YMCA, Eden Street, Kingston. (Morse Classes weekly at 2 Sunray Avenue, Tolworth).

LONDON MEMBERS' LUNCHEON CLUB

will meet at the Bedford Corner Hotel, Bayley Street, Tottenham Court Road.

at 12.30 p.m. on Fridays, August 16, September 20 and October 18, 1963

Telephone table reservations to HOL 7373 prior to day of luncheon. Visiting amateurs especially welcome.

Loughton.—August 9, 7.30 p.m., Loughton Hall, near Debden Station.
Mitcham (M & DRS).—August 17, 7 p.m., "The Canons," Madeira Road, Mitcham.
New Cross (CARS).—Fridays, 8 p.m., 225 New Cross Road, S.E.14.
Norwood & South London (CP & DRC).—August 17, CD Training Centre, Bromley Road, Catford.
Paddington (P & DARS).—Wednesdays, 7.30 p.m., Beauchamp Lodge, 2 Warwick Crescent, W.2.
Purley (P & DRC).—August 16, 8 p.m., Railwaymens Hall (Side Entrance), Whytecliffe Road, Purley.
Reigate (RATS).—August 17, 7.30 p.m., The Tower, High Street, Reigate.
Romford (R & DRS).—Tuesdays, 8.15 p.m., RAFA House, 18 Carlton Road, Romford.
Science Museum (CSRS).—Monday, August 19 (Informal Meeting), Science Museum, South Kensington.
Sidcup (CVRS).—August 14, 7.30 p.m., Coldharbour Estate Recreation Hall, William Barefoot Drive. September 5, 7.30 p.m., ("The Art of Short Wave Listening"), Congregational Church Hall, Court Road, Eltham.
Slough (SARS).—First Wednesday in each month, 8 p.m., United Services Club, Wellington Street, Slough.
Southgate & District.—August 8, 8 p.m., Arnos School, Wilmer Way, N.14.
St. Albans (Verulam ARC).—August 21, 7.30 p.m., Headley Road, St. Albans.
Sutton & Cheam (SCRS).—August 20, 8 p.m. (Film Show on Mullard Transistors), The Harrow, High Street, Cheam.
Uxbridge (UDRS).—August 5, 19, 7.30 p.m. ("Construction Practice and Tools"), St. Andrews Church Scout Hut, Uxbridge Road.

REGION 7

Welwyn Garden City.—September 12, 8 p.m. ("Getting Started," with GPO representative), Conference Room, Murphy Radio Ltd., Bessemer Road, Welwyn Garden City.

REGION 8

Crawley (CARC).—August 14 (Informal, for details contact G3FRV), August 28, "Mobile Evening," 8.30 p.m., at the Hogs Back, Guildford, Surrey.

REGION 9

Bristol.—August 23 (Talk by M. Brown, G3KUJ, of BBC), 7.15 p.m., Royal Fort, Bristol University, Woodland Road, Bristol 8.

Burnham-on-Sea.—Second Tuesday in each month, 8 p.m., Crown Hotel, Oxford Street, Burnham-on-Sea.

Camborne (CR & TC).—First Thursday in each month, Staff Recreation Hall, SWEB Headquarters, Pool, near Camborne.

Exeter.—First Tuesday in each month, 7.30 p.m., YMCA, St. David's Hill, Exeter.

Plymouth (PRC).—First Tuesday in each month, 7.30 p.m., Guild of Social Service Building, Plymouth. Other Tuesdays, Virginia House Settlement, St. Andrew's Cross, Plymouth.

South Dorset (SDRS).—First Friday in each month, 7.30 p.m., alternately at Waverley Hotel, Westham, Weymouth and Labour Rooms, West Walks, Dorchester. (August meeting at Weymouth).

Torquay (TARS).—August 10 ("Dartmouth Mobile Rally," discussion), Club HQ, Belgrave Road, Torquay.

Weston-super-Mare.—First Tuesday in each month, 7.15 p.m., Technical College, Lower Church Road.

Yeovil (YARC).—Wednesdays, 7.30 p.m., Park Lodge, The Park, Yeovil.

REGION 10

Cardiff.—August 12 ("Microwaves," by D. N. Thomas, GW3RXW), 7.30 p.m., TA Centre, Park Street, Cardiff.

REGION 11

Prestatyn (FRS).—August 26 (7.30 p.m., "Slow Morse," 8 p.m., "Simple Hints and Kinks," 8.30 p.m., "Single Sideband," by L. W. Barnes, GW3PCZ/T), Railway Hotel, Prestatyn.

REGION 16

Basildon (BDARS).—September 3, 7.30 p.m., Wickford. Further details are available from G3RQT, 472 Long Riding, Basildon, Essex.

Chelmsford (CARC).—No meeting in August. September 3, 7.30 p.m., Marconi College, Arbour Lane, Chelmsford.

Great Yarmouth (GYRC).—Fridays, 7.30 p.m., Electric Social Club (opposite "Steward and Pattersons"), on North Quay.

Southend (S & DRS).—Friday evenings, fortnightly, 7.30 p.m., The Canteen, E. K. Cole Ltd., Priory Road, Prittlewell. Further details are available from G3NPF, 2 Edith Road, Prittlewell, Southend.

REGION 17

South Hampshire.—August 10 ("What is Amateur Radio?" by G. J. Watts, G2DSW), 7 p.m., Lanchester Building, Southampton University.

Bulletin Stencil Plates

It occasionally happens that a stencil plate used for the preparation of a particular BULLETIN wrapper becomes worn or loses ink, with the result that the Post Office experience difficulty in tracing the address.

Members who notice that the address on the wrapper used for their copy of the BULLETIN is indistinct, or in any way faulty, are asked to advise Headquarters.

Receipts

Receipts for subscriptions paid by cheque, bankers' order or postal order are not now issued unless specially requested. Receipts are drawn, however, and kept on file at Headquarters for six months.

Can You Help?

- M. Perkins, G3PNI, 17 Durban Road, Margate, Kent, who requires information on the R.1392 v.h.f. receiver?
- N. P. Visser, William Boothstraat 12, Amsterdam (West), Holland, who urgently requires the circuit diagram for the R.1475 receiver?
- D. Byrne, G3KPO, Jersey House, Eye, Peterborough, who requires information on the Williamson amplifier and Magslip Tester?

Closing date for September issue

August 8

INDEX TO ADVERTISERS

CLASSIFIED ADVERTISEMENTS

ADVERTISEMENT RATES. Members' Private Advertisements 3d. per word, minimum charge **5s. Trade Advertisements 9d. per word.** minimum charge **12s.** All capitals **1s.** per word, minimum charge **18s.** Write clearly. No responsibility accepted for errors. Use of Box number **1s. 6d.** extra. Send copy to **Sawell & Sons Ltd., 4 Ludgate Circus, London, E.C.4.**

PERSONAL

QSL CARDS. G.P.O. approved log books, cheapest, best, prompt delivery. Samples.—Atkinson Bros., Printers, Looe, Cornwall.

COVENTRY AREA: Accommodation required commencing August 24, for young electronic engineer with " ham " interests.—T. B. Beadman, 7 Huntly Road, Woodston, Peterborough, Northants.

EXCHANGE

A3621, has R107 in good condition ready for A.C. mains, in full exchange or with slight cash adjustment for a ham band only receiver either commercial or home built: Minimum Requirements—80 and 20 metres, BFO, AVC wired ready for A.C. mains.—A3621, 25W, B Flt, 2 Sqn, R.A.F. Cosford, Wolverhampton, Staffs.

SITUATIONS VACANT

WE HAVE A VACANCY for a keen, energetic young man, experienced in T.V. Band 4/5 frequencies, to eventually take complete control of design and production of our Communal Aerial Amplifier equipment section. It is a well paid job superannuated, and a staff position, offering an outstanding opportunity to a person of ideas and initiative. Please write giving details of age, experience, technical qualifications, etc. to: C. G. Clark, Technical Director, Rainbow Radio (Blackburn) Ltd., Mincing Lane, Blackburn, Lancs.

SITUATIONS VACANT (continued)

NORTHAMPTON COLLEGE OF ADVANCED TECHNOLOGY
ST. JOHN STREET, LONDON, E.C.1.

DEPARTMENT OF ELECTRICAL ENGINEERING
JUNIOR LABORATORY TECHNICIANS

Candidates should have (a) 4 approved G.C.E. subjects at " O " Level or (b) have obtained or pursuing the O.N.C. course in Electrical Engineering. Junior Technicians normally receive a five-year integrated course of education and training in all branches of electrical engineering. This includes workshop processes and experience in the undergraduate teaching and special project laboratories, and where appropriate research laboratories. Concurrently with training, each Junior Technician receives part-time day release to study for the H.N.C. or possibly H.N.D. After training the Technician would be qualified to work as Senior Technician in College, Industrial, Government and Research Association, research and development laboratories.

Applications to Head of Department for details, salary and conditions.

BBC

TRAINING TECHNICAL OPERATORS FOR TELEVISION

The Engineering Division offers training to suitably qualified young men for staff appointments as Technical Operators for television. " On the job " training is given in camera work, sound control, vision control, etc. In addition, Technical Operators attend a 14-weeks course at the fully residential Engineering Training School, near Evesham, Worcestershire, during their first year of service, and an advanced course later for promotion to more senior operational grades.

Candidates are expected to hold a good " O " Level G.C.E. including English Language, and two subjects at " A " level are desirable.

Salary on appointment at 18 years of age £490, at 19 years £605, and at age 20 and over £715 p.a. A higher entry point will be considered for an applicant with exceptional experience.

Young men (British subjects) age 18 to 26 years who have a keen interest in sound and television broadcasting and related subjects are invited to write for further particulars and application form to **Engineering Recruitment Officer, Broadcasting House, London, W.1, quoting 63.E.468 R.S.G.B.**

BBC

JUNIOR LABORATORY TECHNICIANS

BBC offers experience and training to young men as junior laboratory technicians in the Equipment Department, based in London. Experience is not essential, but applicants must be able to demonstrate a keen interest in radio and electronics. They must be British subjects, aged 17½ to 20, and hold the G.C.E. at " O " level in five subjects, including English, mathematics and physics, preferably mathematics or physics at Advanced Level. An equivalent Scottish or Northern Ireland certificate will be accepted. General training will be given in the laboratories and day release will be granted for approved courses of technical study leading to the O.N.C. and H.N.C. in electrical engineering. College fees will be paid by the Corporation. Salary on appointment at 18 years: £525 p.a. at 19 years: £650 p.a. at 20 years: £765 p.a. and thereafter rising by annual increments of £50 to £1,065 p.a. There are prospects of advancement to senior laboratory technician and engineer grades.

Write for application form to Engineering Recruitment Officer, Broadcasting House, London, W.1, quoting reference 63.E.489 RSGB.

SERVICES OFFERED

CASES, chassis, panels. ANYTHING in metal: send your drawings, for quote. Stove enamelled, hammertone, or plain, in any colour.—Moss Watson, 40 Mount Pleasant Street, Oldham, Lancs. (Main 9400).

GO ONE BETTER. Have your cabinets, panels, etc., stove-enamelled and lettered to your own or original specification. —For by-return quotations, contact: The Universal Productions (Enamellers) Ltd., 22 Aston Road North, Birmingham 6. Tel.: Aston Cross 2987.

WANTED

WANTED.—All types of communication receivers, test equipment, tape recorders, amplifiers, etc. Prompt cash payment.—Details to R.T. & I. Electronics Ltd. 254 Grove Green Road, Leytonstone, London, E.11 (LEYton 4986).

HRO Crystal Filter 455 kc/s with crystal and phasing control or similar unit.—G13KOT, 15 Sarajac Crescent, Belfast 14.

AIRMEC RECEIVER C864.—Good condition.—G. L. Easteal, 136 Arkwrights, Harlow, Essex. Telephone: Daytime: Harlow 24212—Evening: Harlow 24811.

FOR SALE

MARCONI CR 300/2 receiver, fitted internal power pack and speaker. Working all bands. £15 o.n.o. Groom, Blackmore, Ingatestone, Essex.

VICEROY. S.S.B. TX 180 watts. P.E.P. Separate Power Pack, little used. Mint condition, 100 gns. Labgear band switched Pi-network inductance (E5033), £2. Telescopic whip, 15 in. to 13 ft., 25/-. 300 watt mod. trans. Fixed ratio, approx. 1/1 open type 30/-. Trans. standard input. 1650-0-1650, at 450 mills, with matching choke, 15 hr. woden, £4. Many other trans. and meters. Seen Cheshire. Marple 2616, or Box No. P.7099, c/o RSGB BULLETIN, 4 Ludgate Circus, London, E.C.4.

AMATEUR disposing many components all cheap. Including Avo signal generator, speakers. Flynn, 59 Weoley Park Road, Birmingham 29. SEL 1087.

G209 RECEIVER in immaculate condition for sale. Offers over £50 to A. Grace, G3LOG, 44 Cedar Avenue, Ripley, Derbyshire.

ET 4336 Tx. Excellent condition and performance with new Wilcox-Gay Mo and all valves, plus spare pair new 805s. Buyer collects. £50. G2ATF, 44 Nab Hill Avenue, Leek, Staffs.

KEYBOARD PERFORATOR, Buckley Electronic T/R Switch, Teleprinter 110 volt D.C. Motor P.S.U. Offers—G3IGG, 26 Hooton Way, Hooton, Wirral, Cheshire.

HRO Mx with National 697 power pack. Miniaturized front end with HRO 60 circuit. Nine g/c coils, £20. Deliver within 50 miles Chippenham. Griffiths, Christian Malford, Chippenham.

B2 TRANSMITTER, power pack, small modulator. Three crystals. Ideal small rig, 35 watts input, bargain £8; HRO Junior for spare parts, £3; HRO coils; Bandspread 14 Mc/s £3; general coverage top band, also 40-80, 15s. each; G8UA, 406 Brunshaw Road, Burnley, Lancs.

LABGEAR TOPBANDER £20. Minimitter MC6, 6 Mc/s IF £15. TW Mains P.S.U. £12. TW 2m Tx £20. 4EL 4m Yagi £4. 6 over 6 2m Yagi £4. o.n.o. Add postage. Marriott, R.A.F. Weyhill, Andover, Hants.

PANDA CUB. Mint condition—£35. 'Phone: Maidenhead 24859.

FOR SALE—contd.

CATALOGUE No. 15.—Government Surplus Electrical and Radio equipment. Hundreds of items at bargain prices for the experimenter and research engineer, 2/6 post free: catalogue cost refunded on purchase of 50/-.—Arthur Sallis Radio Control Ltd., 93B North Road, Brighton.

METALWORK.—All types of cabinets, chassis, racks, etc., to your own specifications.—Philpott's Metalworks Ltd. (G4BI), Chapman Street, Loughborough.

BAMBOO POLES FOR CUBICAL QUAD ANTENNAS, ETC. ALL SIZES. S.A.E. BRINGS LIST.—WHINES & EDGELER BAMBOO PEOPLE, GODMANSTON, DORCHESTER, DORSET.

MICROPHONES for Mobile Ham, it clips into breast pocket. M63 with built-in bass filter to reduce engine noise and optional switch. Specifications—moving coil (Cardiod), freq. response 200-12,000 cps, O/P 80db, impedance 200 ohm, length 1⅞in. Price £7 6s. 3d. Standard model £3 15s. 6d Postage 1/6d. Other models for shack, available from—Microsound, 70 Nursery Road, Cheadle Hulme, Cheadle, Cheshire.

CR100, good condition, £16. Minimitter 5 band converter, £8. HRO 160m, coil, 7/6d. Buyer collects.—G3RKZ, 397 Uttoxeter Road, Derby.

SILICON DIODES 500 mA 1,000 PIV, 9/- each. OC.44, OC.81D, OC.81, 3/6d. each. OC.170, 4/- each, OC.171, 4/6d. each. Plus P. & P.—Wakeley, 70 Arnold Road, Binstead, I.O.W.

AR88D. Recently paid £50, as new. Full set spare valves unused. Trimming tools. Manual. S meter. Realigned recently. Small mods. that work. Outward appearance and condition excellent, £42. Phone: BYR. 5810.

SCR-628A 10m. FM Tx + Rx's, fully tunable receivers, 29-37 M/c, mint condition and manuals, £12 o.n.o.?—Melvyn Rees, 30 Wentworth Crescent, Hayes, Middlesex.

VALIANT 160/10M TX. Mint. With separate mod. and PA P.S.U. in neat metal case, £32. RX RA.10.DB. 400 Kc/s to 10 Mc/s with navy 250 v., 100 mA. P.S.U., 75/-. Bulls. 1952/62 with index, 50/-. £35 the lot o.n.o.—G3MPF, 44 Ashfield, Liverpool 15.

HAMMARLUND HQ 170E. 230/250 volt model. Perfect condition, £110. Will deliver within 100 miles.—G3FKM, 10 Knightlow Road, Birmingham 17.

Printed in Great Britain for the RADIO SOCIETY OF GREAT BRITAIN, New Ruskin House, Little Russell Street, London, W.C.1
by Loxley Brothers Limited, Letchworth, Hertfordshire

IF UNDELIVERED Return to:— R.S.G.B., NEW RUSKIN HOUSE, LITTLE RUSSELL STREET, W.C.1