R.S.G.B Bulletin

JOURNAL OF THE RADIO SOCIETY OF GREAT BRITAIN

Vol. 32 No. 9 MARCH, 1957 Price 2/6 Monthly

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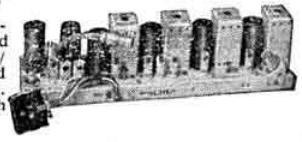

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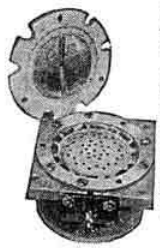

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EDITOR : JOHN CLARRICOATS, O.B.E., G6CL
ASSISTANT EDITOR : JOHN A. ROUSE, G2AHL
EDITORIAL OFFICE : RADIO SOCIETY OF GREAT BRITAIN
28 LITTLE RUSSELL STREET, LONDON, W.C.1
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Current Comment

"Passed To You . . . ."

THROUGHOUT the new style Presidential Address which was printed here last month ran the insistent refrain: *It is for the members to make their opinions known.*

Mr. Findlay's address could be likened to a Statement of Policy for 1957—an expression of some of the things it would be useful to achieve during the present year. It referred to the importance of furthering the cause of Amateur Radio, of increasing the membership of the Society, of encouraging the younger enthusiast, of considering changes in the management of the Society, to mention only four.

In each instance he reiterated the need for the membership at large to let the Council know how they feel about these—and other things. It is much easier for the Governing Body to do its job efficiently if it has at its disposal a fair cross-section of opinion from its electorate.

Now and again the electorate makes itself felt in no uncertain terms, as it did nationally in 1945. And so far as this Society is concerned, democracy could be seen exercising its mandate with emphasis in 1951 when, rightly or wrongly, the membership decided that they wanted a change of faces in their Council —and they got it in the well-remembered "palace revolution" of that year.

At no time has the Council been uninformed of the tide of opinion among the members, but if the President's invitation to them to speak more often has the desired effect it will be all to the good.

Now, continuing this theme. . . .

" — For Necessary Action "

METHODS by which members can let their views be known to the Council were suggested in the Presidential Address in these words:

"Make known to the Council your feelings at meetings and by correspondence."

By now most Town Representatives in heeding those words will have made some provision for Society matters to be discussed at local meetings. It is a good plan to set aside a short period of every meeting for this special purpose, preferably the last half-hour after the main subject of the meeting has been completed (but not much longer, remembering that "business" is not popular!)

Individual members can be invited to jot down during the period between meetings any items of Society business which they would like to have discussed at local level next time. Frequently the answer can be given by the T.R. himself, or failing that, then information can be sought either of the Regional Representative or of Headquarters itself. And where a subject is deemed to be of sufficient importance, it can be framed as a resolution passed by the Group for consideration by the Council.

In this wise the Scheme of Representation will work with maximum effectiveness as "a means of communication inwards," to use the President's words.

As for "making your feelings known by correspondence," this can be done in two ways by the private member: either by confidential letter for Council's consideration, or through the correspondence columns of this magazine—in which case it helps if such letters can be labelled "For publication if thought fit."

In the last few years the Correspondence section of the BULLETIN has been the vehicle for much lively exchange of opinion by the membership—a thoroughly healthy sign which makes it the envy of other radio magazines. Encouraged by the invitation in the Presidential Address, members will no doubt ensure that this trend continues.

Still on the same subject. . . .

For Example . . . .

LAST month's BULLETIN offered at least one item of major importance deserving of further debate.

Mr. Ingram, picking up the theme of the *Current Comment* on the low Council Election poll, queried the desirability of block nominations.

And on another page, under *Council Proceedings,* was recorded the decision to "adhere to the practice of placing an asterisk against the names of the persons nominated by the Council to serve on the Governing Body."

Because the custom in the past has been to adhere to normal Company procedure on this point, there is not the slightest reason, given a sufficiently positive expression of opinion from members, why a change should not be made.

Apropos block nominations and asterisks, there is, as it happens, another side to this particular penny: members who disapprove of the past Council's record do at least know which members not to vote for!

While we are about it, let us fly another kite. Do members like to have the biographical details of each candidate for Council which are printed on the tear-off part of the voting paper? Or do they feel that because these details (supplied by the candidate) admit the possibility of a mild spot of "line shooting," they were better omitted altogether?

Passed to you!

—J.H.

Amateur Radio and the I.G.Y.

By R. L. SMITH-ROSE, C.B.E., D.Sc., Ph.D.,

Director of Radio Research, Department of Industrial and Scientific Research

THE essential principle of the International Geophysical Year (I.G.Y) is that on certain days in each month during the period July 1, 1957, to December 31, 1958, scientists throughout the world will carry out an intensive programme of observations of various related phenomena occurring on the sun, in our atmosphere and on the earth itself. The days selected for this work are divided into two broad groups: Regular World Days (R.W.D.) to be specified in advance in the calendar, and Special World Intervals (S.W.I.) to be selected at short notice when it is expected that some unusual occurrence is likely to take place on the sun. A world warning agency has been set up in U.S.A. from which notice will be issued from a few hours to one or two days in advance of the incidence of a S.W.I. A preliminary test has already been made of the international communications network by which the alerts and other announcements will be distributed throughout the world. It is clear that such messages will be available in this country for distribution within about an hour of the announcement of the initial warning.

In considering in what way radio amateurs may be able to contribute to the scientific programme the following proposals may be appropriate for discussion.

Relation between V.h.f. and U.h.f. Propagation and Meteorological Conditions

In this case we are concerned with a study of the relationship between the propagation of waves from metres to centimetres in length and the vertical gradient of atmospheric conditions up to heights of tens of thousands of feet. Since the meteorological conditions will be a subject of special study in this country, it would be appropriate to observe the characteristics of radio transmission conditions on these very high frequencies over distances of a few hundred miles up and down the country and possibly between this country and the Continent.

The upper air conditions will be available from soundings made by the Meteorological Office, but it would be an advantage if radio amateurs studying the propagation conditions could also record the pressure, temperature and humidity of the air at their terminal ground stations.

V.h.f. Transmission and Aurora

The interesting observations made by some amateurs of the unusual v.h.f. propagation conditions during the display of Aurora Borealis (Northern Lights) on January 21, 1957, should clearly stimulate further investiga-

Summary of Suggested I.G.Y. Projects for Radio Amateurs

U.K.	Study of aurora and related transmission conditions on high frequency amateur bands (U.K.—Canada route).	Study of the relationship between v.h.f./u.h.f. propagation and meteorological conditions.	Study of auroral communication on v.h.f. amateur bands.	Reception observation of solar noise in v.h.f./u.h.f. bands
Belgium ...	Investigation of the intensity of reception of chosen frequencies(i).	Observations of fading, fade-out, abnormal signal strengths, flutter, echoes and other phenomena(i).	Relative measurement of background noise especially during daytime with careful note of transient abnormalities(ii).	Meteor whistles on decametric waves.
Denmark ...			Study of auroral communication on v.h.f. amateur bands (E.D.R. will operate special station OZ7IGY on 144 Mc/s).	
Germany ...		V.h.f./u.h.f. propagation observations in collaboration with ionospheric sounding stations.		
U.S.A. ...	Tracking the earth satelite (Project Vanguard).	Transequatorial scatter on 50 Mc/s(iii).	Study of auroral communication on amateur frequencies above 50 Mc/s(iii).	Sporadic-E skip(iii).

(i) All frequencies to be observed. (ii) All frequencies to be observed, especially decametric waves. (iii) Work to be done by A.R.R.L. under Air Force contract.

tion, and the I.G.Y. provides an admirable opportunity of doing this. Here again the radio amateur might arrange, by co-operation, to observe both the visual auroral effects and the associated propagation conditions in any or all of the v.h.f. bands available to him.

Reception of Solar Noise

Since, as explained already, the S.W.I. will be chosen when unusual solar activity is to be expected, these times will provide an opportunity of observing the enhanced direct radiation from the sun in the v.h.f. and u.h.f. bands. A highly directional aerial system should be used, and this should be trained on the Sun for observational purposes. This would have to be done by calculation if the Sun is obscured by cloud, but it is unlikely that such obscuration will affect the reception of radio noise at the frequencies available to amateurs. A simple method of estimating the nature and magnitude of this solar noise should be devised.

Study of Aurora and Related Transmission Conditions on High Frequencies

During the R.W.D., and more particularly the S.W.I., visual observations of aurora should be made simultaneously with a study of radio transmission conditions in northern latitudes, e.g. between the United Kingdom and Canada. The phenomenon of aurora (Northern Lights) is well known, particularly in Scotland, and there will be a more than usual likelihood of occurrence of this during the S.W.I. Alternatively the increased activity on the sun to be expected during a S.W.I. makes it important to study the radio propagation conditions generally on high frequencies, since the ionosphere is more likely than usual to be disturbed during such periods.

Need for Regular and Systematic Observation

Whichever line of study it is decided to pursue, the importance of making regular and systematic observations must be stressed. Those who are in a position to make a few quantitive measurements, e.g., field strength of signals or noise, will have an advantage over those who have to rely on qualitative or aural observations; but the important point in either case is to observe as regularly as possible on the selected days and to record immediately all the relevant information. A few selected amateurs working in close collaboration on a regular schedule are likely to achieve much more than a large number of individuals engaged in irregular and spasmodic observations.

Reduction of Results

It is suggested that for each of the subjects to be studied (or " disciplines " as they are termed in I.G.Y. language), a small committee should be established to collect the results centrally and to summarize them, before attempting to correlate them with any statement of auroral, ionospheric or meteorological conditions which will be forthcoming from the scientific observations working during the I.G.Y.

An Invitation

Members prepared to participate in one or more of the I.G.Y. projects suggested by Dr. Smith-Rose are invited to write to Headquarters without delay, indicating their preference and availability for observations at short notice.

The I.G.Y.

During the International Geophysical Year from July 1, 1957, to December 31, 1958, the nations of the world will undertake a concentrated series of geophysical observations in accordance with a well-formulated international co-operative plan. The objective of the plan is to describe in detail the world-wide pattern of each of many terrestrial phenomena such as weather disturbances, ionospheric and geomagnetic storms, aurora displays, and the changes of pattern of the disturbances as they develop in time. Because terrestrial phenomena recognize no national boundaries, their description requires common agreement among nations on the places where observation should be undertaken, the kinds of measurements to be made, the observing apparatus to be used, the standards and timing of measurements and the form of presentation and publication of the results. This agreement has been arranged among the scientists and governments of the world by the International Council of Scientific Unions functioning through its Comité Spécial Année Géophysique Internationale.

During the I.G.Y., observations will be undertaken in many branches of geophysics including meteorology, geomagnetism, the aurora, the air glow, ionospheric physics and disturbance, geodesy (precise latitudes and longitudes), cosmic rays, glaciology and climatology, oceanography, gravity and seismology. Moreover, the Sun will be under continuous observation by a score of stations around the Earth for changes in sunspots, bright chromospheric eruptions, changes in the photosphere and modifications of the corona that may underlie the origins of resultant disturbances on the Earth.

While many kinds of observations will be made continuously or at least several times each day, the more difficult, or the specialized and concentrated observations, will be made by all geophysical stations on a specific calendar of Regular World Days. There will be three to five Regular World Days each month. When unusual events are observed on the Sun that may presage magnetic, ionospheric, or auroral disturbances an alert will be transmitted to all observers several days in advance of the expected disturbance. If conditions persist on the Sun that are likely to produce terrestrial disturbance, a Special World Day will be announced one day in advance of the expected disturbance over a world-wide communication network, so that all stations will be ready when the disturbance begins.

Amateur Radio is deeply rooted in an experimental tradition and many members will already have given considerable thought to the part they may play during the I.G.Y. There is no doubt that the value of amateur observations is widely recognized in many scientific fields, not least in radio, and in his article Dr. R. L. Smith-Rose, Director of Radio Research, Department of Scientific and Industrial Research, and an Honorary Member of the R.S.G.B., suggests several possible lines of investigation for the radio amateur. At the present time the Council of the Society is of the opinion that members will make the greatest contribution by concentrating on one or two of the suggested activities. The V.H.F. Committee is considering the three projects which fall within its field.

We are indebted to " QST," journal of the American Radio Relay League, for certain of the information given above.

Improving the War-surplus HRO Receiver

By E. H. TROWELL (G2HKU)*

COMPARING the writer's HRO (an old "glass valve" model) with a modern receiver indicated that all was not well with the r.f. gain and signal-to-noise ratio at 14 Mc/s and above. It was therefore decided to modernize the receiver using B7G type miniature valves to obtain reduced length of connecting leads and the improvement in inter-electrode capacities now available in modern valves.

R.F. Valves

The two 6D6 r.f. valves, with their *gm* of 1.6 mA/V, were replaced by a pair of Osram Z77 which have a *gm* of 7.5 mA/V. The resulting increase of r.f. gain was tremendous, so much so in fact, that one could hardly approach the receiver without it "taking off" on its own! A considerable amount of time was spent in endeavouring to overcome this instability by more decoupling and additional screening, without much success. Consulting the General Electric Company's Valve Division with an outline of the work in hand and results obtained, brought forth information that the Osram Z77 was designed as a wide band television amplifier and was thus not considered suitable for use in the HRO r.f. stages.

At this point the National Company of U.S.A. provided the writer with a copy of the latest HRO 60 Instruction Manual together with some helpful advice. This Manual showed that the National Company had chosen 6BA6s for their r.f. valves. Although the HRO 60 layout is, of course, different from the war-surplus models it was decided to rebuild the "front end" in line with the latest design.

Fig. 1 shows the original HRO circuit diagram, which is basically the same for all models using glass or metal valves up to 1946, and the lettering conforms with the Instructional Manual for this series.

Modernization Procedure—R.F. Stages

To commence the modernization unsolder all connections to V1 and V2 and remove the valveholders. Using these as a template mark off two pieces of aluminium sheet and mount a ceramic B7G valveholder complete with screen in the centre of each and position each holder so that pins 1 and 7 are nearest to the coil box. Next, remove the grid top cap connection to each valve and thread the wire back on itself, through the coil box

*4a Clyde Avenue, Sheerness, Kent.

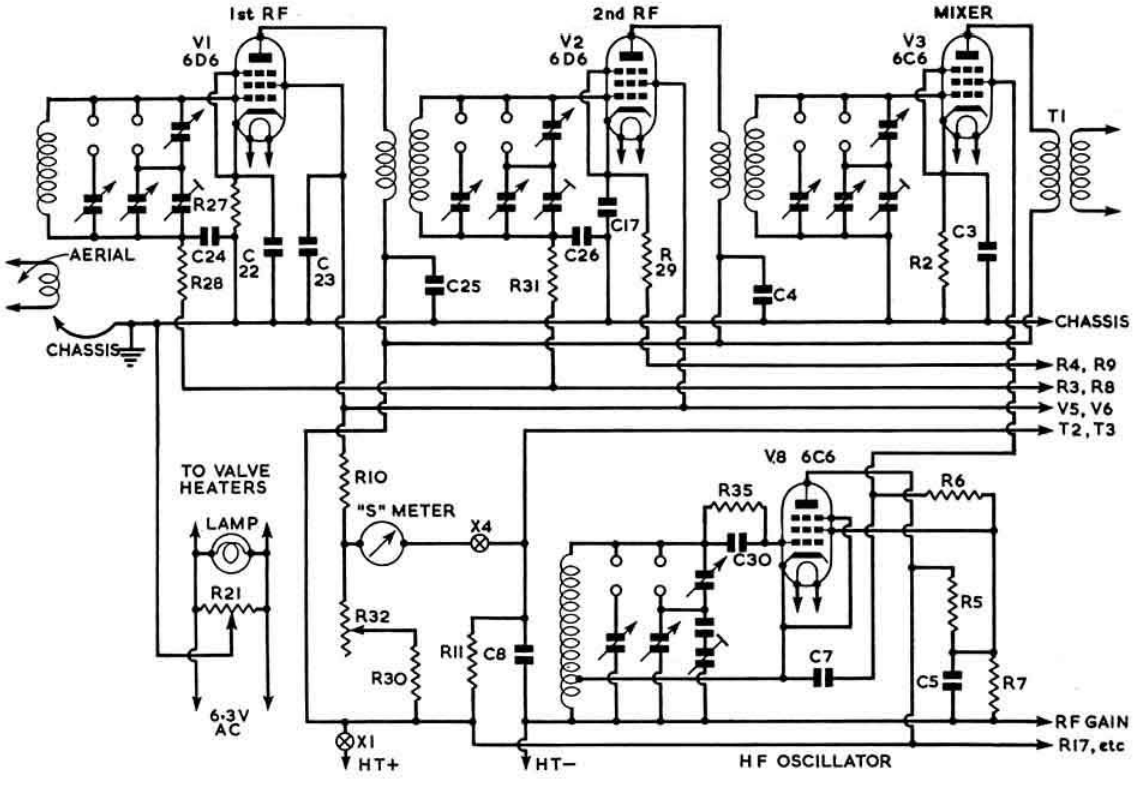

Fig. 1. The original "front end" of the National HRO.

C3, 4, 5, 17, 22, 23, 25, 0.1μF; C7, 24, 26, 0.01μF; C8, 0.25μF; C30, 0.0001μF; R2, 5K ohms; R5, 50K ohms; R6, 7, 100K ohms; R10, 15K ohms; R11, 250-2500 ohms; R21, 64 ohms; R27, 29, 300 ohms; R28, 31, 500K ohms; R30, 0-2000 ohms; R32, 1000 ohms; R35, 20K ohms; T1, crystal filter; X1, h.t. switch; X4, 'S' meter switch. Component designations are the same as in the HRO Manual.

and out of the slot under the chassis adjacent to V1 and V2, and connect to the appropriate pin as shown in Fig. 2.

All fixed condensers should be replaced as the wiring progresses making sure that the connecting wires are as short and direct as possible paying particular attention to condensers CA, CB, CC and CF. The valve base centre pin should be earthed as directly as possible.

During the course of these modifications it was discovered that some existing earth points showed several ohms resistance. Further investigation revealed rust between the shakeproof washers and the chassis, so each earth point was thoroughly cleaned before being used again and new locking washers fitted.

After completion of the new r.f. stages the receiver should be checked for instability, especially above 14 Mc/s. If any is present the physical layout of condensers and resistors can be changed slightly, making sure that grid and anode leads are well separated. A point worth noting here is that the performance of the 6BA6 valves seems to vary with different manufacturers and this variation is, of course, most noticeable on 21 Mc/s and above. Two new 6BA6s of different makes were checked on a valve characteristic meter and one had a higher transconductance than its rated value. This valve caused considerable instability which was cured by replacement with a valve of correct value. There should be a marked improvement in r.f. gain and a check on the r.f. amplifier alignment, as outlined on page 15 of the HRO Manual, should be carried out.

Mixer Stage

Following the HRO 60 line-up it was decided to replace the 6C6 mixer with a 6BE6. This is a valve of interest due to its special structural arrangement whereby a change in signal grid voltage results in hardly any change in cathode current. Hence an r.f. voltage on the signal grid results in negligible modulation of the cathode current. This means very little degeneration or regeneration of the signal input or i.f., output, an important feature in any mixer, especially so in a communications receiver.

A B7G ceramic valveholder, complete with shield, should be mounted and positioned as outlined for the r.f. stages and connected as in Fig. 2. The original 6C6 grid top cap connection should be removed and the wire redressed similar to the r.f. grid leads, taking care to keep it as short as possible.

H.F. Oscillator

Fitting the 6C4 triode (Fig. 2) to replace the 6C6 oscillator in Fig. 1, requires removal of the original valveholder and replacement with a B7G ceramic type, together with the top cap grid connection modification previously described. Particular attention must be paid to short, direct wiring and decoupling condensers.

It will be noted that the mixer injection is taken from the oscillator coil via C7A. The normal practice is to take this injection from the oscillator coil cathode tap via C7 (shown dotted). The reason for using the former

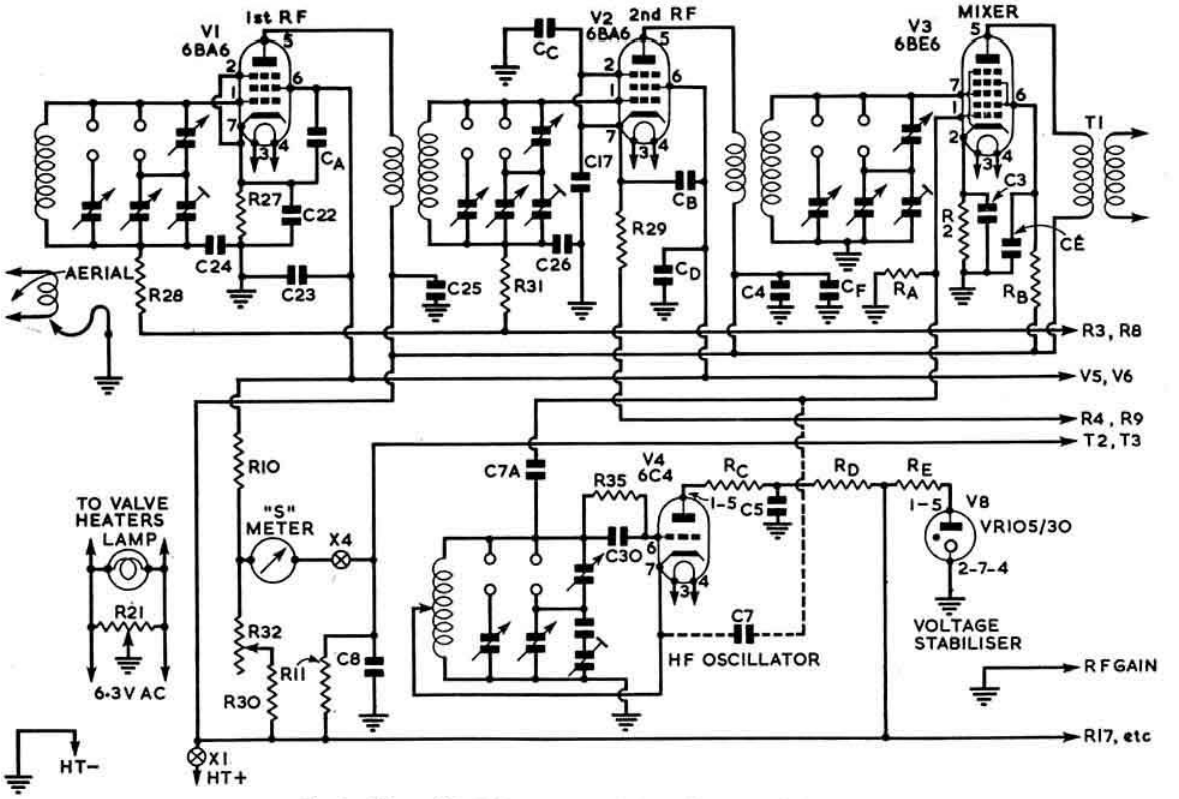

Fig. 2. The modified " front end " of the HRO used by G2HKU.

C3, 7, 24, CE, 0.01μF; C4, 5, 25, 0.1μF; C7A, 10pF; C8, 0.25μF; C17, 22, 23, CD, 0.05μF; C26, CA, CB, CC, CF, 0.005μF disc ceramic; C30, 0.0001μF ceramic; R2, 220 ohms; R10, 15K ohms; R11, 250-2500 ohms; R21, 64 ohms; R27, 100 ohms; R29, 500 ohms; R28, 31, 500K ohms; R30, 0-2000 ohms; R32, 1000 ohms; R35, RA, 22K ohms; RB, 33K ohms; RC, 22 ohms; RD, 2.2K ohms; RE, 5K-8K ohms, 10 watts; T1, crystal filter; X1, h.t. switch; X4, 'S' meter switch.

method is twofold. In the first case taking the mixer injection from C7 resulted in slight "pulling" of the oscillator above 20 Mc/s. Secondly, TVI was present when the HRO was tuned between 14100 and 14300 kc/s. This trouble was reduced by by-passing the heater of the 6C4 to earth with 0.01μF mica condensers but was not entirely cleared. Another means of mixer injection was tried by connecting pin 6 of the 6C4 direct to pin 1 of the 6BE6. This resulted in a clear TV screen but reduced output from the mixer and caused oscillator instability above 16 Mc/s. Using the method shown in Fig. 2, there is no trace of any oscillator pulling, instability or TVI. The value of C7A is about optimum but can be varied if found necessary.

Voltage Stabilizer

The VR105/30 voltage stabilizer (V8, Fig. 2) can be mounted horizontally on a bracket under the chassis either between the oscillator and mixer valves, with its base nearest the coil box, or to the rear of the chassis. If an OB2 miniature stabilizer is available it could be mounted between the oscillator and mixer valves in the normal manner. In this way the heat from it would be kept away from the coil box and oscillator components.

General

Re-alignment of the r.f. amplifier and h.f. oscillator stages should be carried out as described on page 12 of the HRO Instruction Manual. Particular attention must be paid to observing that the h.f. oscillator circuit operates at a higher frequency than the r.f. amplifier. The intermediate frequency is 456 kc/s. Newcomers to the National HRO will find that of the two amateur bands covered by each general coverage coil set, the signal-to-noise ratio will be best on the highest frequency amateur band, i.e., Type JD coil set (covering 1.7 to 4 Mc/s) will be better on 3.5 Mc/s than type JC coil sets (covering 3.5 to 7.3 Mc/s).

Routine voltage checking during the course of this modification revealed that the heater voltage measured *across the valveholders* was 5.9 volts. An adjustment of the mains transformer and the changing of the "S" meter bulb for one of a lower current consumption remedied this minor point.

In conclusion it may be stated that, although these modifications may seem drastic the improvement obtained is well worth the time and trouble spent in carrying them out.

Acknowledgements

Whilst it must not be construed that the National Company are in any way in agreement with these modifications, the writer would like to pay tribute to their kindness and assistance so readily given on various occasions.

Bibliography

The National HRO seems to have attracted much attention in the course of its career and given below is a list of reading matter dealing with various modifications which may prove of some assistance.

"Souping-up a War Surplus HRO," Rockwell (W3AFM), *QST*, February, 1949.

"Modernizing the Pre-war HRO," Windom (W8GZ), *QST*, June, 1949.

"Low Noise Receiver Design," Longerich (W2GQY/4), and Smith (W5LHD), *QST*, March, 1955.

"Pep-up Your Old Receiver," Lorenzen (W3BLC), *QST*, April, 1956.

"H.F. Converter for the HRO," (21 Mc/s converter), Spray (G3FXA), *Short Wave Listener*, February, 1953.

"Some HRO Modifications" (21 Mc/s bandspread), Ward (VQ4FB), *Short Wave Magazine*, December, 1954.

"Modifying the HRO," Hill (G6HL), *Short Wave Magazine*, October, 1948.

"Modifications to the HRO" (A.c.-d.c. operation), Trowell (G2HKU), *Radio Amateur*, September 1953.

"An Improved R.f. Stage for the HRO," Trowell (G2HKU), *Radio Amateur*, November, 1953.

"The HRO and TVI," Varney (G5RV), R.S.G.B. BULLETIN, August, 1949.

"Bandspread on 21 Mc/s for the HRO," Mason (GM6MS), R.S.G.B. BULLETIN, February, 1953.

"Improving the National HRO," Derrick (GM3OM), R.S.G.B. BULLETIN, April, 1955.

Beam Tetrodes as Zero Bias Tetrodes

ALTHOUGH it is now ten years since the original information was released by R.C.A. on the zero bias triode connection of 807s for audio use, no information on the use of other beam tetrodes in this manner has, as far as is known, been published.

Recently a modulator was built using 6L6s connected in this manner—drive was applied to the screen grids with the control grids connected via 20 K ohm resistors. Using 450 volts h.t. and a 6V6 driver valve the output was higher than obtained from normal AB2 operation, and the valves (with speech input) ran cooler.

KT66s have been used with an anode voltage of 600, using the no-choke power supply suggested by GI3ZX for s.s.b. p.a. (R.S.G.B. BULLETIN, April, 1955). Using the same 6V6 driver valve adequate modulation for 150 watts input was easily obtained. The speech amplifier was of course supplied from a well smoothed source.

6V6s have also been tried, using 350 volts h.t. and it seems probable that the system can be used with almost any beam tetrodes normally available.

The requirements in all cases are similar to those of 807s:

(1) High voltage low impedance drive.

(2) Conservatively rated transformers.

(3) A h.t supply for the modulator valves which will cope with a 15 to 1 variation on current with minimum voltage change.—G3IHI.

London Audio Fair, 1957

AUDIO equipment for the high fidelity enthusiast will be shown and demonstrated in luxury surroundings at the 1957 Audio Fair to be held at the Waldorf Hotel, Aldywch, London, W.C.2 on April 12, 13, 14 and 15, from 11 a.m. to 9 p.m. each day. Two floors of the hotel will be used. On the ground floor, manufacturers will display their products in booths, rather like a shop window. The designers of much of the equipment will be available to meet and talk to the public and answer questions. Upstairs in what are normally bedrooms, visitors will be able to hear equipment in operation in ideal surroundings. More than 50 manufacturers of audio gear will be taking part.

Admission to the Fair will be by ticket only, obtainable from any gramophone, radio or music dealer.

Improving the RF26 and 27 Units

MR. R. PALMER (G5PP) states that step 7 in modifying the RF26 and 27 units on page 263 of the December 1956 BULLETIN should have read: "Replace the r.f. stage *screen* resistor with one of 5K ohms."

The Reception of Crystal Palace Transmissions in Australia

By NORMAN BURTON (B.R.S.11494)*

DURING the recent minimum sunspot period, much time was spent in examining the records of various phenomena relative to the reception of the higher frequencies, attention being given to sunspot counts and the relative graphs. It is unfortunate that most of these graphs, published in England, do not go back much beyond a hundred years and although useful, they impart only a portion of the information. However, in a French encyclopædia, graphs were discovered going back a further hundred years and these, when joined to the English graphs, gave a very interesting picture.

Sunspot activity occurs in cycles of ten or eleven years, the former being nearer the mark and there is a definite rhythm showing every fourth peak to be higher than the preceding three; 1956 was indicated as being such a peak. There is a further suggestion of a rhythm among these high peaks. All the indications were that the next sunspot cycle was to be exceptional. On this basis, 1955 would see the 28 Mc/s band open to England in the spring and this did, in fact, occur; rather earlier than the predicted 1956 opening. During the year 1956 there was further evidence of rapid increase in sunspot activity and by the spring signals from the U.S.A. on frequencies up to 40 Mc/s were being received in the mornings. It was during these early morning watches the thought occurred to the writer that as the B.B.C. Television Service was getting into South Africa, why not Australia?

Being a firm believer that the best way of tackling a problem is first to obtain all the relevant data, and being aware that Cable and Wireless, Ltd., had carried out tests between England and Japan on single figure wavelengths before the 1939-45 war, it was thought that perhaps the path between England and Australia had also been looked into. Enquiries elicited the fact that it had not: whilst valuable information was, however, gained from the Company's exceptionally informative prediction charts, neither they nor any other organization seemed to have any data. It became clear that this was going to be a lone effort to break some new ground. Information was collected from all over the world on the DX reception of the London TV transmission. With one exception, all records were of East/West reception to U.S.A. or North/South to South Africa. The exception was All-India Radio, who, in 1938, relayed the A.P. sound channel on one or two occasions. Unfortunately, they were unable to supply any information; the time of reception in India would have been a help. From the data available, it was clear that all reception was over *daylight* paths. Readers will be aware that Sydney is 10 hours ahead of G.M.T. and no matter what time was picked the path would include both darkness and daylight.

It was noted that 30 Mc/s is regarded as a natural division of the frequency spectrum, and hence the further unknown quantity—the behaviour of 41.5 Mc/s signals over such a path. Therefore, all calculations were based on 28-30 Mc/s as regards times of possible reception. In England, the best time for reception from VK on 28 Mc/s is roughly between 08.00 and 12.00 G.M.T. This corresponds to 6 to 11 p.m. Sydney time and these hours were chosen as the optimum across the short path. The reciprocal time across the long path was ruled out after an examination of log books covering the last sun-spot maxima as it was found that reception in England from Australia had been recorded only three times. The local office of the B.B.C. was contacted and the regular programme times of the TV service obtained. From this data it was decided that only the Saturday noon transmission was likely to offer a chance of success. Accordingly the B.B.C. in London were advised that watch was being kept weekly on the Saturday noon transmission, commencing October 20, 1956.

*143 The River Road, Revesby, N.S.W.

Aerials

Further practical problems arose as to what kind of aerial to use. The Franklin had always been regarded with favour, so a three section affair with reflector was installed by October 20, 1956. In a quiet location such an aerial may be excellent but on a semi-main road, it proved ideal—for bringing in ignition QRM! Never has anything like it been heard. Clearly, the thing was useless so it was replaced with a three-section tilted wire with phasing sections directional on London. This was a definite improvement. On October 27, the writer had to be out and left the junior operator in charge. On returning home, he was astonished to learn that "voices had been heard" at 11.23 G.M.T. Careful questioning left no doubt that this was it! By this time a reply had arrived from the B.B.C. in London which drew attention to the morning Trade transmissions. This meant that the band could be monitored each night and this was begun on October 29.

During the following week some dissatisfaction was felt with the tilted aerial and looking through the accumulated data again an article published in the August, 1949, issue of the R.S.G.B. BULLETIN by the late ZS1T was found. In this the writer stated that he had found a simple dipole as good as anything! Such a simple aerial, so close to the road seemed to be just asking for QRM so the matter was discussed with VK2FA who has about the worst location in Australia, right in one of the oldest Sydney suburbs, yet has a world-wide fame for DX. He suggested a good two-element beam with as high a back-to-front ratio as possible.

Success

Such a beam was constructed from curtain rod and wood and was installed on November 3 at a height of one wavelength. That night the first really good signals came through from Crystal Palace, starting at 10.15 G.M.T. at terrific strength and remaining strong but with some deep fades until 11.00 G.M.T. gradually decreasing in average strength until fading out completely at 11.55 G.M.T. This was a good start for the beam. After this, signals were received on 16 separate occasions up to December 22 which was the last day on which they were heard in 1956.

Although the signals were being received the problem of definite identification arose, so that verification could be obtained from the B.B.C. The tapes then in use had no verbal announcement and, in fact, no identification signals at all. At this point, the writer's wife, with her musical knowledge, came to the rescue and she was able to identify the Du und Du Waltz from Die Fledermaus and the Polovtsian Dances from Prince Igor which fol-

lowed it. It had been observed that, at 10.47 G.M.T. the music stopped and that a 900 c/s tone was radiated, lasting two minutes. This, together with an accurate statement of the times at which the various pieces of music were heard, enabled the B.B.C. to verify the reception.

In retrospect, this all sounds easy but readers can be assured that quite an effort is needed to monitor for six nights a week for an average time of three hours, trying to identify pieces of music which obligingly fade out just when you think you've got the theme! The receiver used was a Hallicrafter SX28, now seventeen years old, without any converter or pre-amplifier. A two stage e.g.t. pre-amplifier is partly built, but with signals coming in sooner than anticipated, it has yet to be finished but it will be ready for the spring when further efforts will be made to receive the B.B.C. TV Service; this time, with a view to finding out just how the signal is arriving, by measuring the angle of the incident wave. For this a Panadaptor is needed, but such appears to be non-existent in Australia, making the outlook not too optimistic. It is also hoped to have a 405 line receiver in order to try and resolve the picture, even if it is only Test Card "C."

The actual method of working may be of some interest. The receiver is switched on one hour before London comes on the air along with a 500 kc/s sub-standard and a 47 to 103 Mc/s converter; this is held ready just in case Holme Moss or Kirk o'Shotts might break through. It is no use looking for Wenvoe as this would be mixed up with the local channel 2. At 09.35 G.M.T. the station clock is checked against WWVH and at 09.55, the receiver is put on the B.B.C. by means of the sub-standard, the harmonics being counted upwards from 30 Mc/s where a second check is available. With the receiver b.f.o. on, all one has to do is to listen.

To give an idea of how suddenly and at what strength signals can come in: one evening after switching on the sub-standard to check the receiver frequency; the heterodyne stayed put when it was switched off! A glance at the sub-standard showed that it really was off, the b.f.o. was cut and there was London; signals had broken through in that short time with a strength equal to the local sub-standard. Most observations have been made on the sound channel but on three occasions the vision signal has been heard. On one occasion, November 26, 1956, it was as strong on peaks as the local channel 2. There is no doubt that if a suitable vision receiver is available, some sort of a picture should be obtainable later this year.

Making a Record

Late in December a tape recorder was kindly loaned by VK2KC and a recording made on December 17, including the 900 cycles tone, but when on December 22, signals started to come in very strongly at 10.00, the tape was wiped. This proved to be a major blunder as the signals promptly faded out at 10.20 G.M.T. It is hoped to be able to borrow the recorder again so that a proper recording can be sent to the R.S.G.B. for its archives.

General Observations

A few general notes may not be out of place. It was found that 10 metres could not be used as a guide except in a negative sort of way. If 10 metres was open to Europe then no signals could be heard from Crystal Palace; under these conditions, the B.B.C. transmissions on 21 and 25 Mc/s would be at full strength. If, however, these two latter transmissions were weak and watery and 10 metres dead to Europe then Crystal Palace would come through. After hearing them two or three times, it could be predicted with reasonable accuracy, whether or not they would appear, by listening on 21, 25 and 28 Mc/s and also by the "sound," or rather lack of it, on 41.5 Mc/s. If signals were to come through, there was a most uncanny background silence on 41.5 Mc/s as though the receiver front end had gone dead. Out of this curious silence would ride the B.B.C. TV sound. It is so uncanny as to be very hard to describe.

When observations were begun signals would stay, with some fading, for two hours or more, but as Midsummer Day (December 22) was approached the time got progressively shorter and they appeared earlier. The last time they were heard in 1956 (on December 22) they began at 10.00 G.M.T. and faded out at 10.17 G.M.T.

Throughout the observations, G2MI was kept informed of progress—hence the "flash" in the BULLETIN. Without the help, in one way or another, of quite a lot of people, the problem would not have been tackled successively and to the following a grateful word of thanks:

T. W. Bennington of the B.B.C., London; J. Mudie of the B.B.C., Sydney; H. O. Patterson of R.C.A., New York; W. Jenvey of the Overseas Telecommunications Commission, Sydney; W. Perry and P. Mulligan of the P.M.G. Broadcasting Engineering Division, Sydney; and G2MI, VK2AOU, '2FA, '2KC, '2ZCR, '2ANP, '2IR, '2YB and last but by no means least, the writer's wife, without whose musical knowledge the task would have been much harder.

Stop Press

Since the above notes were written, signals have broken through again. They were first heard this year on February 6, 1957, after an absence of forty-five days. On the following night, they were again audible, along with those from the French service radiated from Mont Pincon. They were also heard on February 11 and 12. Signals on the 11th were fair, but on the 12th, they broke through at 10.35 G.M.T. rather weakly but two minutes later were very strong indeed and for the next half-hour reception was excellent with a splendid demonstration of the new identity signals now included in the tape; the musical notes B.B.C. played on the piano. As is usual on these occasions of excellent reception the tape recorder was not available!

The strange thing about the signals this year is that their behaviour is *exactly opposite to last year.* They come in when the B.B.C. on 21 and 25 Mc/s is excellent copy and when signals *are* coming in from Europe on 10 metres: there is also the normal amount of noise which one would expect on 41.5 Mc/s. In addition once this year a weak carrier has been heard on the Holme Moss frequency.

Another observer has been located in Victoria but he had had no success until we were introduced. Data was given to him which enabled him also to hear the B.B.C. A point worth mentioning is that on the first three occasions when signals were heard this year, February 6, 7 and 11, they were audible in VK3 only on February 7. On this day good signals were heard but nothing from the French service. Later in the year, it is hoped to provide more news of the B.B.C. TV "down-under" this time as a co-operative effort between the two observers located about five hundred miles apart.

Growth of Television

AT the end of December, 1956, there were 6,570,097 television licences in force in Great Britain and Northern Ireland, an increase of 648,077 over the figures at the end of June.

In 99 towns and districts the number of combined sound and television licences exceeds those for sound only.

Speech Clipping and Volume Compression

Part 2—Volume Compressors and Filters *

By G. L. BENBOW, M.Sc., A.M.I.E.E. (ex-G3HB)†

A VOLUME compressor is a circuit which varies the gain of an early stage of an audio amplifier inversely as the output level.

This may be achieved by rectifying and then filtering a portion of the audio output. The resulting d.c. voltage is then used to control the gain of, say, the first voltage amplifier by applying it to the suppressor grid.

A typical circuit is shown in Fig. 8. A portion of the audio output is rectified by the double diode V1, the resulting d.c. which is developed across R3 is filtered by the RC network composed of R4, R5, C3 and C4. It is then applied to the suppressor grid of V2, the first stage of the speech amplifier.

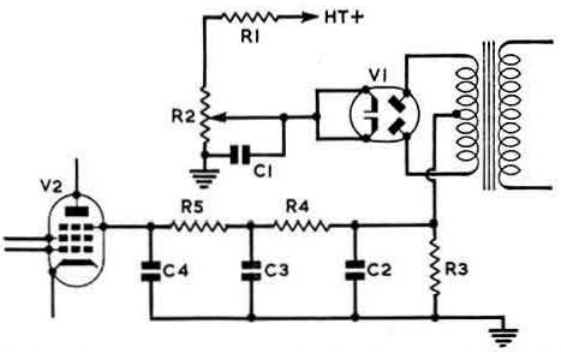

Fig. 8. Simple volume compressor circuit. C1, 2, 3, 4, 0.1μF; R1, 220K ohms; R2, 50K ohms potentiometer; R3, 4, 5, 220K ohms; V1, 6H6, etc.; V2, first stage of speech amplifier.

The point at which the circuit begins to operate is controlled by applying a positive bias to the cathodes of V2 by the potentiometer R2, which may conveniently be returned to the main h.t. line of the speech amplifier.

The input to the compressor circuit may be obtained in several ways:

(*a*) Directly from the modulator output;

(*b*) From the input transformer of a class B output stage;

(*c*) From a separate power amplifier valve fed from the last stage of the speech amplifier.

Due to the loading applied by the compressor circuit it is not satisfactory to feed it from a voltage amplifier.

Filters

Every speech clipping stage must be followed by a filter to remove the harmonics generated by the squaring action of speech clipping and also any frequencies above about 3 kc/s which occur in the speech waveform. It thus restricts the transmitted bandwidth to about 6 kc/s.

A filter by itself will not prevent splatter resulting from overmodulation, but even in the absence of a clipper stage, if overmodulation is prevented by other means, such as by increasing the anode load of the modulator (by adjustment of taps on a multi-ratio transformer) or by careful adjustment of the anode voltage of both the modulator and r.f. stage, a filter to restrict the bandwidth is a worthwhile addition.

Apart from component ratings, there is no difference between high level and low level filters.

Before the design of a filter can be commenced, three factors must be known :

(*a*) The "cut off" frequency, *i.e.*, the frequency at which the filter comes into action;

(*b*) The amount of attenuation required at frequencies above the cut off frequency;

(*c*) The impedance at which the filter is to operate.

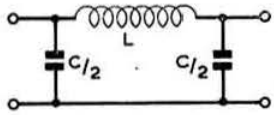

Fig. 9. Low-pass " prototype " or " constant k " filter.

It is upon factors (*a*) and (*b*) that the degree of splatter suppression achieved will depend. An I.A.R.U. recommendation (I.A.R.U. Congress, Paris, May 1950) states that the response of the modulator in an amateur telephony transmitter at 4 kc/s should be 26 db below the response at 1 kc/s. A suggested method of achieving this is by the use of two filters, one with an attenuation of 20 db in the speech amplifier and a second having an attenuation of 6 db between the modulation transformer and the r.f. amplifier. In such a case it is preferable for the second filter to have a somewhat higher cut-off frequency than the first. It would be reasonable to consider these attenuation figures as being minimum figures, particularly in the case of a high power transmitter.

The operating impedance of the filter is not critical and normally considerable variation is possible to allow the use of components which may be available. It is generally more convenient to make the impedance fairly low (*i.e.*, less than 10,000 ohms); hence if the filter is used as the anode load of a valve, a further stage of amplification is often necessary to make up for the loss of gain resulting from the low anode load of the filter stage or alternatively to compensate for the use of an impedance which is not the optimum. In the case of a high level filter the filter impedance will be equal to the modulating impedance of the r.f. amplifier.

Filter Design

The full design of filters is outside the scope of this article, but the following notes should enable the amateur to design and make quite satisfactory filters without very much trouble.

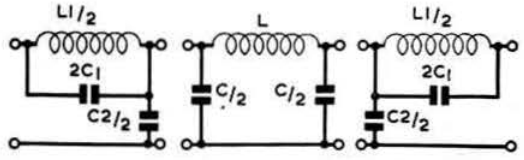

Fig. 10. A single section " prototype " filter with " m derived " end sections.

**Part 1 appeared in the January, 1957, issue of this Journal.*

†81 Anglesmede Crescent, Pinner, Middlesex.

The simplest form of low pass filter is shown in Fig. 9. This is known as a "prototype" or "constant k" filter. The design equations for this type of filter are:

$$(i)\quad R = \sqrt{\frac{1000L}{C}} \qquad (ii)\quad L = \frac{R}{\pi fc}$$

$$(iii)\quad C = \frac{1000}{\pi fcR}$$

where R = filter impedance in ohms; fc = cut-off frequency in kc/s; and L and C are the values of the inductance and capacitance in millihenrys and microfarads respectively. Thus L and C may be calculated for given values of R and fc. A reasonable value to assume for fc is 3.3 kc/s.

Such a filter by itself would not be adequate as it would only give an attenuation of about 6 db at 4 kc/s and about 30 db at 10 kc/s. It would, however, be suitable for a high level filter providing that a filter of higher attenuation was included in the speech amplifier.

The simplest method of increasing the attenuation is to connect, say, three sections in cascade. This would give an attenuation of about 20 db at 4 kc/s and about 60 db at 10 kc/s. It can be seen that a three-section prototype filter at low level plus a single section high level one would just about meet the suggestion quoted earlier. If a steeper attenuation frequency curve is required, use may be made of what is known as "m derived" half sections. The arrangement of filters having a single prototype section and two "m derived" end sections is shown in Fig. 10. The constants for the prototype section may be found as before. The design equations for the end sections are:

$$(i)\quad L1 = mL \qquad (ii)\quad C1 = \frac{1-m^2}{4n}\,C$$

$$(iii)\quad C2 = mC$$

In practice "m" is generally taken to be 0.6 so that these equations now become:

$$(i)\quad L1 = 0.6\,L \qquad (ii)\quad C1 = {}^{5}/_{3}\,C \qquad (iii)\quad C2 = 0.6\,C$$

A filter consisting of a single prototype section and two "m derived" half sections would give an attenuation of the order of 30 db at 4 kc/s. Although only one prototype section is shown, two or more may be used if desired.

Construction of Filters

As the values of L and C in a filter follow from the choice of impedance and cut-off frequency, it is often possible to alter the design to utilize existing components. Obviously the use of close tolerance components enables the filter to be made exactly as designed; however, this is somewhat of a luxury in amateur practice and quite satisfactory filters may be made by using components having a tolerance up to 20 per cent.

Condensers

The values required rarely work out to standard values and so a series or parallel arrangement is usually necessary. Good quality paper condensers are satisfactory although mica ones are better, but if they are not available the extra expense involved is hardly justified in amateur practice. Mica condensers will give a slightly steeper cut-off curve with increasing frequency The condensers in a high level filter must have an adequate working voltage, at least twice the anode voltage of the r.f. amplifier.

Inductances

It is the inductances which generally present the greatest practical difficulty to the amateur constructor. In the case of a high level filter, the inductances must be capable of carrying the h.t. current of the modulated stage. They are, therefore, appreciably larger than in the low level case where the current to be passed is only of the order of a few milliamperes.

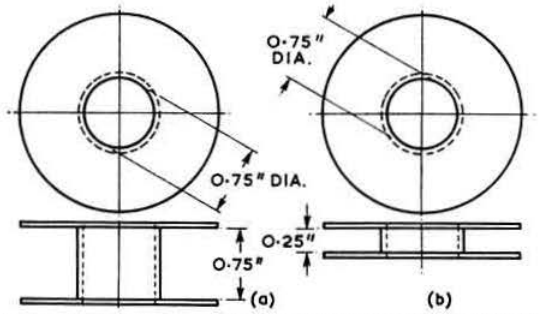

Fig. 11. Dimensions of bobbins for inductances wound according to Table I.

Either air cored or iron cored inductances may be used, but from the amateur point of view, air cored ones are simpler to design and make. This applies particularly to inductances for high level filters.

Inductances with an accuracy of the order of 5 to 10 per cent may be made by reference to Table 1 which quotes the number of turns of wire required to give the stated values of inductance when wound on the bobbins shown in Fig. 11. For the larger bobbin ((a) in Fig. 11) the wire size is 32 s.w.g. (enamelled). These inductances will carry 200mA without overheating and so are suitable for high level filters.

Table I

Approximate inductance mH	Number of turns	Outside diameter of bobbin (inches)	
		A	B
80	2030	2 1/8	1 1/4
100	2240	2 1/8	1 1/4
120	2400	2 1/8	1 1/4
150	2620	2 1/8	1 1/4
180	2800	3	1 1/2
200	2930	3	1 1/2
250	3200	3	1 1/2
300	3450	3	1 1/2
350	3660	3 1/8	1 1/2
400	3850	3 1/8	1 1/2
450	4030	3 1/8	1 1/2
500	4200	3 1/8	1 1/2
600	4570	3 1/8	1 1/2
700	4840	3 1/8	1 1/2
800	5160	4	2
900	5480	4	2
1000	5800	4	2 1/4

The largest coil shown (one Henry) will take about 1 lb. of wire and will have a resistance of about 260 ohms.

For the smaller bobbin ((b) in Fig. 11) the wire size required is 40 s.w.g. (enamelled). The largest size shown will have a resistance of about 850 ohms and will need about 2¼ oz of wire. These inductances are suitable for low level filters. In either case, intermediate inductance values may be found by simple interpolation. Alternatively the values given may be plotted on squared paper and so other values may be read off the resulting graph.

The inductance of air cored coils of this general form may be calculated with reasonable accuracy from the formula :

$$L = \frac{0.8\ a^2\ n^2}{6a + 9b + 10c}\ \mu H$$

where n is the number of turns and a, b and c (in inches) are as shown in Fig. 12. The accuracy will depend on the shape of the coil and will be highest when $6a \simeq 9b \simeq 10c$ and when the turns are wound neatly side by side and not " pile wound ".

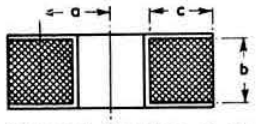

Fig. 12. General form and dimensions of short multi-layer coil. Inductance is given approximately by the formula

$$L = \frac{0.8\ a^2\ n^2}{6a + 9b + 10c}\ \mu H$$

where n is the number of turns and a, b and c are in inches.

Resistance-capacity Filters

By careful design a filter of the type just described may be made to have a loss/freqeuncy characteristic which is flat to 2.5 kc/s or so and then falls rapidly to the order of — 50 db at 4 kc/s.

It is considered by some that such a filter gives a too unnatural sound to the voice and that a filter having a much less rapid fall-off in its characteristic is preferable.

Such a characteristic may be obtained from a resistance-capacitor filter. A single section RC filter may be considered as a potentiometer made up of the resistance and the capacitance reactance $1/\omega C$, of the condenser. As the frequency increases, $1/\omega C$ decreases and so the ratio of the " potentiometer " falls with increasing frequency. A two section RC filter is shown in Fig. 13 which also shows its approximate loss/frequency curve.

This type of filter is obviously not as effective as a conventional LC type, particularly when used after heavy speech clipping, but it has the great merit of simplicity. It may of course be backed up by a 0.01μF condenser shunted across the primary or secondary of the modulation transformer.

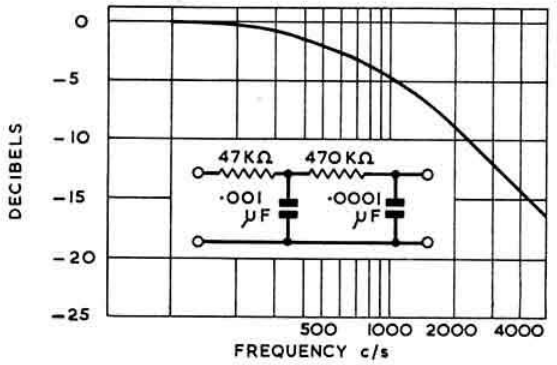

Fig. 13. Two stage RC filter and approximate loss/frequency curve.

Conclusion

It is necessary to utter a word of warning with regard to the use of speech clipping and volume compression. The object of both systems is to increase the average modulation depth of a speech transmission, therefore the modulator and its power supply must be capable of operating without overloading at the resulting increased power level. This is particularly important in the case of class AB2 or class B operation.

It would be reasonable to design the modulator and power unit to give the required output under sine wave conditions, *i.e.*, with a sinusoidal input voltage to the modulator.

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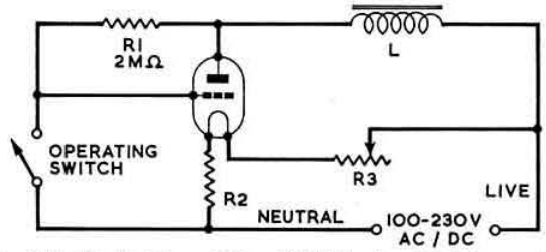
A Simple Universal Relay

By Neil H. Ray, B.Sc., A.R.I.C. (B.R.S.21137)*

THE circuit shown is useful for controlling a high-voltage or high-current circuit safely by means of a light-duty switch, or for operating a direct-current relay when only a.c. is available. It can be assembled in a small space, as it uses only the minimum number of components; furthermore, it appears to operate equally well on almost any power supply from 100 to 230V, a.c. or d.c.



Circuit for Simple Universal Relay. R1, 2 Megohms; R2, 3 (see text); L, Relay coil (about 2000 ohms); S, operating switch.

The valve can be practically any triode; although a battery type is shown. An indirectly-heated valve can equally well be used, with the cathode connected to one heater pin. The total resistance R1 + R2 should be chosen to suit the heater voltage required, depending on the power supply available; approximately one-half of the total resistance should be placed in each heater lead, and the final adjustment made on R3.

Technical Note: The closing of the switch causes heavy grid current to flow and releases the relay. The grid current would be sufficient to damage some valves but if a suitable type is used the circuit would be useful for remote control of a circuit by fitting the relay with a " make when release " spring set.

**19 Ashley Drive, Hartford, Cheshire.*

A Low Noise B.F.O. Injection System

By S. F. WEBER, L.R.A.M. (B.R.S.19317)*

THE problems of designing a receiver capable of operation on the v.h.f. bands are such that recourse to specialized techniques is necessary for the absolute maximum in performance. The factors influencing the performance of a receiver (i.e., stability, sensitivity, noise figure, etc.) have been dealt with quite exhaustively in the past and at the present time there is no apparent scope for radical improvement in the front end of the receiver.

For a v.h.f. receiver to operate satisfactorily presupposes an i.f. and a.f. section that has the minimum possible noise figure; for 'phone reception this is easily attained. However, when c.w. is to be received, there is generally a considerable change for the worse. Everyone who has ever used a communications receiver must have noticed the considerable increase in noise when the b.f.o. is switched on.

What is this extra noise due to? In the main, the trouble is caused by an excessive proportion of harmonic voltage appearing at the detector[1], and by the b.f.o. voltage being very much in excess of that required for optimum mixing—the optimum being only slightly greater than the signal voltage[2].

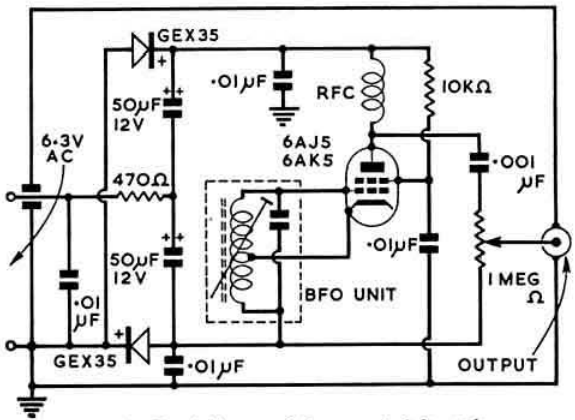


Fig. 1. Circuit diagram of the separate b.f.o. unit.

It follows then that these are the requirements of the b.f.o. output voltage:

(a) Frequency stability
(b) Negligible harmonic content
(c) No radiation (i.e., into the r.f. section of the receiver)
(d) Loosely coupled output
(e) Variable amplitude.

There is one very easy way to satisfy all these conditions at the same time: have the b.f.o. as a separate, completely screened unit, run at very low input and *inject into the front end of the i.f. chain.*

If the output voltage (i.e., comparable to signal voltage at this stage), and coupling are sufficiently small, the i.f. chain will not be swamped but will act as a very high Q filter in removing all spurious voltages at other than the intermediate frequency, thus removing the prime source of noise.

*65 Combemartin Road, Southfields, London, S.W.18.

Separate B.F.O. Unit

This then is the basic unit: a small pentode (6AK5, 6AJ5, 9001) cathode coupled oscillator with its h.t. derived from the heater supply (an effective short circuit to r.f.) through a pair of GEX35 crystals in a full wave voltage doubling circuit. (It is practically impossible, when using the same h.t. supply as the main receiver, not to get r.f. leakage.) The output is taken through a small 1 Megohm potentiometer. The whole unit is completely contained in an Eddystone diecast box, thus being very effectively screened. Coupling into the i.f. chain is effected by bringing about ¼in. of unscreened lead near the grid terminal of the first i.f. valve.

Care should be taken in the construction of the unit, and only the best quality components used. For all earthing connections use stout copper braid and do not have components supported on the valve base pins but on tag strips. Make sure that everything is mechanically sound.

In operation, the output of the oscillator is increased from zero until the receiver noise level just starts to increase (about S1 to S2). The receiver is then tuned for weak signals. If a strong signal is received, the b.f.o. output control should be advanced until the "S" meter shows a slight increase over the signal strength.

Results

The system has now been in use for more than two years at the writer's 435 Mc/s station with his home-built receiver, and has proved completely satisfactory. It has also been tried on an R1155A with considerable success, improving c.w. reception markedly. Not only is the noise figure of the receiver improved under these conditions, but no radiation at all is detectable from the unit.

References

[1] R.S.G.B. BULLETIN, June 1953, cf. V.h.f. mixers. (V.h.f. receiver design.)
[2] R.S.G.B. *Amateur Radio Handbook*, Chapter 4.

"Mirror in the Sky"

"MIRROR in the Sky" is the title of a new scientific film intended primarily for use in secondary schools. Financed jointly by the Educational Foundation for Visual Aids and Mullard Ltd., it tells in a fascinating manner the story of Appleton and the ionosphere.

The story begins at Signal Hill, St. John's, Newfoundland, in the year 1901 when Marconi and his assistant heard, for the first time, wireless signals from England, notwithstanding the curvature of the earth. The film illustrates some of the early experiments of Hertz and goes on to show how Appleton was able, eventually, with the aid of signals from the B.B.C. station at Bournemouth to prove Heaviside's theory—postulated 20 years earlier—that radio waves are reflected from the ionosphere.

The later stages of the film show glimpses of the Jodrell Bank Radio Telescope and the equipment used at Cambridge to measure cosmic noise.

Ritchie Calder, O.B.E., who introduced the film at the preview was responsible for the commentary.

Enquiries regarding the loan of the film, which has a running time of 22 minutes, should be addressed to E.F.V.A., 33 Queen Anne Street, London, W.1.

Propagation on the Amateur Bands

Past Experience and Future Prospects

By J. DOUGLAS KAY (G3AAE)*

IT is just a year since the last survey of propagation conditions on the DX bands, and quite a number of interesting things have happened in that time. By far the most significant has been the very rapid increase in sunspot activity: that increase has been so spectacular that the peak of the present sunspot cycle is expected to occur this month. This may come as a bit of a shock when it is realized that the trough of the cycle only occurred during the summer of 1954—slightly less than three years ago. However, there is no need for concern, because the upward slope of the cycle is much more steep than the decline, and what is more, immediately after the peak comes a period of several years, during which the decline is very slight, and only after some two years begins to fall off at about half the rate that it increased. In fact sunspot activity throughout 1957 is expected to continue at practically the same level; and 1957 will become the year of greatest sunspot activity that has ever been known.

The high frequency DX bands have reacted very much as had been forecast, and at the present time† 14, 21 and 28 Mc/s are all carrying a record amount of DX activity. Even so, everything in the garden is not perfect, as many will have found to their cost. The trouble is that the great increase in the degree of ionization of the reflecting layers has resulted in a considerable shortening of the skip distance, and, particularly on 14 Mc/s, interference from extremely strong European stations (many overmodulated or with the most hideous notes, clicks, chirps and thumps) has all but completely buried most of the DX during the hours of daylight. Participants in the B.E.R.U. contest will have been surprised to hear Canadian stations coming through at good strength on 14 Mc/s almost throughout the night. Considering that we in northern latitudes were then in the middle of winter, and the whole path was in darkness, this indicates a fantastically high degree of ionization.

Working up the bands we find that, during the past twelve months, 3.5 and 7 Mc/s have continued to disappoint. Openings to DX have been very infrequent, and well below those of the period of sunspot minimum. 7 Mc/s has had its moments though. While there is no doubt that a great number of the former devotees of these two bands are now practising their art in the more h.f. spheres, there is also no doubt that the conditions on these bands have been, in the main, poor. It is generally accepted that this is due to the increased absorption that is often associated with high sunspot activity.

For months now 14 Mc/s has been open to all continents almost every day, but has suffered from the great amount of short skip interference mentioned above. The trouble has been most prevalent on phone where just a few grossly over-modulated mid-European signals can just about wreck the entire phone band. Their clicking, chirping c.w. brethren make a bad enough mess of the band (is it purely imagination that the worse their signals the longer and more frequent seem to be their CQ calls?), but there are usually a few chinks in the band through which the DX signals may be heard—and, with any luck, worked.

21 Mc/s has not been affected by the short skip to anything like the same extent as 14 Mc/s, but that does not mean that it is the DX operator's paradise. At least the QRM on 14 Mc/s is amateur created, and that is more than can be said for the noises that infest 21.

It is not easy to see what purpose these jammers serve, but the results are certainly hideous. One of the most depressing aspects is that they do not identify themselves, and consequently there is no chance of steps being taken through official channels to get them suppressed. 21 Mc/s is, of course, carrying only about half the load that it was before 28 Mc/s opened up. Last summer the band was open to the Americas and to Australia well into the night, and the coming summer should see it wide open to those areas until the small hours: in fact the path to Australia and New Zealand may well, on occasions, remain usable throughout the hours of darkness.

The band that has really improved out of recognition during the past twelve months is 28 Mc/s. It is now open to all parts of the world almost every day, but conditions continue to fluctuate considerably from day to day. Activity should continue at a high level throughout the next two years.

We have noted that there is a considerable variation in the characteristics and propagating conditions on the h.f. bands, so much so that one day the bands can be wide open to all parts of the world, and the next almost completely flat. This is another characteristic of the sunspot maximum, and is due to the fact that the increased amount of sunspot activity, which makes propagation on high frequencies possible, also causes considerable turbulences in the ionosphere from time to time, and conditions are consequently affected.

V.H.F. DX

The rapid and spectacular increase in sunspot activity has also enabled the B.B.C.'s Band I television transmissions on 41.5 Mc/s (sound) and 45 Mc/s (vision) to be received in many parts of the world during the past six months. Since the first appearance of the Television Predictions in the BULLETIN in August, 1956, reception reports have been received from Kenya, Gold Coast, Gambia, Bahrein, Australia, and the United States (including the Middle West States), and there is no doubt that many more reports would have been received if more overseas members had receivers covering this part of the spectrum. At least one overseas member has had a picture receiver and aerial shipped from England, and appears to be on the brink of receiving pictures of entertainment quality. B.B.C. television transmissions on other channels will also be receivable during the next twelve months, and a full list of all the sound and vision frequencies of B.B.C. transmissions in Band I is appended to the channel 1 television predictions this month. However, the published predictions will continue to be based on the channel 1 frequencies.

Moving into the realms of the lower v.h.f. amateur bands we first arrive at the American allocation from 50 to 54 Mc/s. During the past winter a number of crossband (50 to 28 Mc/s) trans-Atlantic contacts have taken place between American and British stations, and similar results should be possible during the winter of 1957/58.

The latest "addition to the family" is the four metre band (70.2 to 70.4 Mc/s) and already a number of over-

*18 Fairfield Way, Barnet, Herts

†Manuscript received February 18, 1957.

seas countries are allocating the same band to amateurs. The most interesting of these so far is Southern Rhodesia. The north/south path M.U.F.s always rise much higher than those on the east/west paths, and the writer considers that there is a very good chance of two-way communication being established between G and ZE, but probably not until about November, 1957. This will give interested stations plenty of time to arrange skeds which would appear to be almost essential if contact is to be established. The M.U.F.s even on the north/south path will certainly only exceed 70 Mc/s on rare occasions, and then probably for a very limited period of time. Making a long range forecast the most likely time of day for the London-Salisbury M.U.F.s to reach 70 Mc/s next November should be around 13.00-15.00 G.M.T.

Regarding the possibility of crossband 70/50 Mc/s contacts with American and Canadian stations, this is rather a tougher proposition because as stated above, the M.U.F.s do not rise as high on the east/west circuits as they do on those running from north to south. However, nothing is impossible, and the number of W and VE stations equipped to work these frequencies is an advantage. November is the most likely month and, here again, now is the time to start the ball rolling: remember that for the best chance of contact being made, the stations on the other side must have aerials cut for 70 Mc/s, in the same way that British stations should have aerials cut for 50 Mc/s. Incidentally it is forward gain that counts in this case—the front-to-back ratio of the aerial is relatively unimportant.

Even if the predicted M.U.F.s never reach 70 Mc/s—it is unlikely that they will on any path—that should not deter anyone, because these are average figures for the month, and on several days during each month signals on frequencies exceeding the M.U.F.s by as much as 20 per cent may be reflected. It is for this reason that prior planning and arrangement are so important.

DX Television Predictions for April, 1957

Prepared by J. Douglas Kay (G3AAE)

Buenos Aires	1200-1700	Perth (W.A.)	0900-1230
Falkland Is.	1145-1900	Cyprus	1300-1500
Rio de Janeiro	1130-1900	Cairo	1100-1700
Aden	0900-1830	Accra	1100-1900
Baghdad	0900-1630	Capetown	1030-1930
Bahrein	0900-1630	Dakar	1130-1700
Tel Aviv	1000-1630	Johannesburg	1000-1900
Bombay	1000-1500	Nairobi	0900-1830
Colombo	0900-1500	Salisbury	0930-1900

All times are G.M.T.

The above predictions are based on the B.B.C. Channel 1 transmissions on a frequency of 41.5 Mc/s sound, and 45 Mc/s vision.

The other B.B.C. transmissions are as follows:

Channel 2	48.25 Mc/s sound.	51.75 Mc/s vision
,, 3	53.25 Mc/s sound.	56.75 Mc/s vision
,, 4	58.25 Mc/s sound.	61.75 Mc/s vision
,, 5	63.52 Mc/s sound.	66.75 Mc/s vision

In closing this brief survey the writer hopes that he has not encroached on the territory of either G2AIW or G3ATU. He would like to end with an appeal to all readers that, when they do work unusual DX on the bands, or usual DX at unusual times, they should inform G2AIW, G3ATU or the writer, giving full details. By sharing our experiences we not only increase the pleasure of them, but we also pave the way to bigger achievements in the future.

DO YOU USE DOUGLAS KAY'S FREQUENCY PREDICTIONS ?

If so please send a postcard to Headquarters

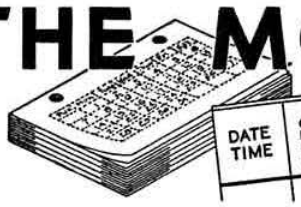
Frequency Predictions for April, 1957

PREPARED BY J. DOUGLAS KAY (G3AAE)

BAND	NORTH AMERICA	CENTRAL AMERICA	SOUTH AMERICA	SOUTH AFRICA	NEAR EAST	MIDDLE EAST	FAR EAST	AUSTRALIA
M.U.F.	31 Mc/s 1800	38 Mc/s 1600	42 Mc/s 1330	47 Mc/s 1400	44 Mc/s 1400	42 Mc/s 1400	38 Mc/s 1000	34 Mc/s 1000
28 Mc/s	1400—2200	1000—2230	1000—2300	0700—0000	0600—2100	0630—1900	0700—1830	0730—1400 2000—2200
21 Mc/s	1000—0000	0800—0400	ALL DAY	0630—0100	0500—0200	0530—0000	0600—0000	1930—1600
14 Mc/s	ALL DAY	1700—1100	1800—1000	1400—0600	ALL DAY	1300—0600	1400—0200	0400—2330
7 Mc/s	0000—1000	1900—0800	0000—0700	1800—0400	1530—0700	1930—0200	1800—2300	0500—0700
3.5 Mc/s	0400	0200	0400	0000	2000—0100	2000	2000	0600

These predictions are based on information provided by the Engineer-in-Chief of the Post Office. All times are G.M.T.

THE MONTH ON THE AIR



By S. A. HERBERT (G3ATU)*

WE are now in the middle of that period of the year when contest activity is at its peak. The B.E.R.U. and A.R.R.L. Contests have all ensured maximum band occupancy at weekends and nobody can complain of the lack of stations. Contest operation is a specialized business though, and in these days of multi-band rotary beams and electronic keys it takes something much better than an average station to make any impression on the situation. Further comment on the various contests appears later—meanwhile, with conditions generally good, we make a start, beginning at the high end.

Ten Metres

With fringe area TV on 56.75 Mc/s **G3IOR** (Norwich) is in a difficult situation, but for all that he got three new ones in OX3LD, HK5ER and ZD3BFC, plus W0SQD (Nebr.), W5CXI (Ark.), W5TVB and K5ADQ (New Mexico) for new States. He also heard LU3ZS. Nevada would give him W.AS. **B.R.S.20249** (Sutton) heard DU1AP and ZD6DT for new ones, while **B.R.S.20317** (Bromley) mentions PJ2CA, VE8MA, VP4LF, VQ5FS and YS2AD on A3 and EL1P, HE9LAA, HA5AM and OX3LD on A1. **B.R.S.20106** (Petts Wood) found 3W8AA (10.50) and VE5EM on A1 and CR5SP, VE5CT,'5MZ, '5AS, ZS9G and EA8AI on phone, **B.R.S.21279** (Oldbury) celebrated his 14th birthday by pulling-in VP3HAG. **B.R.S.20135** (Newport, I.o.W.) found KG6AGS (11.00) for a new one on any band. He also logged KA7JF, CR9AH, 'AK, 'AL, VK4EJ, YN1HF, VP7BM, VE6 and 7. A pleasant surprise for him was the arrival of a QSL from ZS3AB, who verified the report on his signals given in the October *M.O.T.A.* It is a pleasant change for a BRS to get a card without asking, especially a rare one, as this one is for him.

F.R.S.243 (Ballston Spa, N.Y.) sends his first report to this column, although he is far from new to the game, having been an ardent listener since 1928! An HRO7 and a 160 ft wire pulled in EL2F (16.00), FF8BK (20.30), KA2KS (23.50) and VK1GU. **B.R.S.20133** (Melton Mowbray) heard FQ8AF, VP1EE and UA9CM on phone, before tuning the other bands. **G3ATU** worked PJ2ME on c.w. for a welcome new one and also for the PJ's first European on the band. After trying unsuccessfully on 14 Mc/s, this QSO was something of a relief!

Fifteen Metres

This band has been even livelier of late: one interesting development is the number of Antarctic stations to be heard. The location of some of the new ones is causing a certain amount of head scratching. In that connection we hope to give a fuller picture of the various QTHs later.

B.R.S.20133 heard VP8BF and VP8BT (19.00) in phone converse with GM3CDL (who is himself an ex-VP8, we think), then he heard VP8BQ (South Shetlands), who said he was leaving for home soon. Finally he logged VP2KD and KA3WG. **B.R.S.19107** (Beckenham) heard VP8CC (Deception Is., South Shetlands) on A3 and AP2RH on A1. He says HS1MQ is active at weekends on phone from the Argentine Legation, Bangkok, to which address QSLs should be sent. **B.R.S.20249** received VS2BD for a new one while **B.R.S.20317** overheard ZS9G and 4S7GE on phone, with LU2ZS, MP4BBE, VP8BS, '8CC, VK9DB, '9XK, VQ6LQ, VU2RM and ZD4BQ on c.w.

B.R.S.20106 dug up PJ2ME (15.00), UA0GF, 'KKB (10.00), KL7PI, VK and ZL on c.w. and VS4NW (15.00), 4X5RE, LU3ZS (South Shetlands), ZS3V, VQ5GC, VE5, VE8 and VU as his best on phone. **B.R.S.20315** mentions phone from KR6RB, VS1, '2, '6, VP8BS (South Shetlands), VP9G, CR4AP, HH4NB and TI2BX. Good phone DX

During the C.C.I.R. Plenary Assembly held in Warsaw a few months ago, Dr. R. L. Smith-Rose, who is an Honorary Member of the R.S.G.B., made a point of contacting as many radio amateurs as possible. In this picture, taken against the background of the colossal Palace of Culture and Science which was the Conference Headquarters, Dr. Smith-Rose is second from the left in the back row. Others identified in the back row include F. H. Willis, W2GTH, I. Niculesco, ex-CY5EV, ex-YR5EV, A. Prose Walker, W4CXA, and J. Herbstreit, W0IIN. Front row identifications include T. R. Clarkson, ZL2AZ, M. Joachim, OK1WI, J. Urazeh, OK1GM, N. E. Dinger, W3KH, H. A. Laett, HB9GA.

*Roker House, St. George's Terrace, Roker, Sunderland.

at **F.R.S.243** was from KG6AGO, KW6CL, VR2BZ and ZD4BL.

G3LEQ (Tunbridge Wells) persuaded his transmitter on to fifteen and with some ten watts input into a 100 ft wire, he worked ZL4IM, '4HE, '2AK and VK2WT, on phone, which is good going. He regards 21 Mc/s as the best band for good phone DX and mentions the scarcity of stations on the high end of *all* the phone bands, which may be a good thing for QRP types and the s.s.b. gang (though the latter don't worry unduly about A3 QRM; they get out well regardless of what goes on around them). **G2WQ** (Manchester) took advantage of B.E.R.U. to work AP2RH, MP4BBL, ZD6BX and VKs '6RU, '9DB and '9XK, while **G3GSZ** (Castle Eden) grappled successfully with new ones ZS5U and EL1P, but he was unlucky with XE1PJ. **G3IOR** used A3 to work LU2ZS and '3ZS, VP8CC, VS4BO, HS1MQ, KG6AGO, VK, ZL and lots of W6, '7, VE7, '8 and KH6, though he missed PJ2MC and JZ0PC. On c.w., a new one was XE1PJ while others included JA1AG and CE3ZO, with PJ2ME escaping.

On February 24, **G3AAE** (Barnet) worked FF8AP/M who was RS59 for more than an hour. At the time, FF8AP/M was in motion about 15 miles north of Dakar and was running 20 watts input to a home-built rig with a quarter wave aerial.

Twenty Metres

Here as usual the story is mainly of c.w. DX and very good some of it is. **G6YQ** (Liverpool) continues to salt them away and his latest are FE8AE, ZD8JP, ZD9AE and ZS2MI. "Not new," he says, "but very nice to hear them. The marathon sked with Pat, VK4YP, continues and the next thing is to try to hook him with ZD8 and ZD9. The path from VK to ZD is difficult—right over the Pole—but if anyone can make it, Pat can; and they should be the very first VK/ZD8/ZD9 QSOs." **G3IOR** raised 3V8AD and VP4MM for new ones and added W7MKD (Idaho) and W7RYS (Ariz.) to his States. He missed PJ2ME, VP3YG and ZD9AF (but the ZD9 is no loss !). **G3GSZ** got new ones in W9NTJ/KG6 (14.50), ET2US and CR7MB and has received an attractive QSL from ZD9AE.

G2WQ worked both Polar regions with UPOL4 and LU3ZS, sandwiched between VE6NX and VQ6LQ, so the band was certainly open ! **B.R.S.20104** (South Harrow) reports HL1AA (14075, 22.15), ZD8JP, VK7UW, YA1AM (15.00), PJ2ME (11.30), FY7YE (22.50), PZ1AP and HH2Y on c.w. 1956 brought his score to 240C heard, but he says lots can be missed during a normal listening period, which has been proved as a result of a special watch he keeps weekly with B.R.S.20317. He would like to know the receivers and aerials used by successful chasers.

B.R.S.20416 (London, S.E.12) has logged HH3TJ, PI1MIV (Dutch Army), YS1MS, KR6SS and VE0ND, who is on board the aircraft-carrier *Magnificent* and is VE1KW when at home. '20416 is another still looking for BV1US ! **B.R.S.21279** found him at last and logged FQ8HC, CR5SP, ZS2MI and ST2DB on phone also. **B.R.S.20133** heard XE2AH for his first XE in 11 years' listening ! **B.R.S.19107's** latest on c.w. were CE0AC (06.30-14290), KW6CB, '6CM, VK0AS (Mawson, 17.20), ZK1BS and KC6SP (Palau Is.) and John hears s.s.b. activity from BV1US, KC4USA, 'USV and FS7RT, who was on for a time. ZL5AA (the New Zealand I.G.Y. group station) was heard at 07.40 and FB8ZZ is often on 14300 kc/s from 16.30 to 18.30. **B.R.S.20249** got CR7MB on c.w., while **B.R.S.20317's** c.w. list contains VK0AB (Princess Elizabeth Land—QSL to VK2EG), EA9DF, ZD3A, CR4AH, I5RAM, VQ8AG, ZD9AE and VK9XK.

From the impressive DX tally of **B.R.S.20106** emerges —on c.w.—USFA (Kitobaza Slawa, Antarctic), ZC2CS (08.40, getting lots of replies), VP8AI (Falklands, 08.00 and 21.00), VK1FC (19.30), VP8CI (Halley Bay), '8CC, 3W8AA, UM8KAA (14.40), ZD6CH, ZS3BC and much besides. On phone, Norman pulled in FM7WQ, TG9CB, CR4AN, HR1EZ, XE3AF, OY5S, M1D, and HH2Y. ZC3WZ is on the band and has worked GM2ACQ. EA0AD is still on c.w., around 19.00, while Norman heard a UB5 calling VS5DZ and a PY was calling VQ1AA ! **G3ATU** was lucky to come upon VP8CI (Halley Bay) and to be his first G. The operator is Henry Dyer, an experienced Merchant Navy "sparks" who will undoubtedly master the—to him—queer "RST business" in short order. By now, he will probably be abbreviating with the best of us ! **FB8CC** turns out to be just another FB8 after all. He is in Madagascar, *not* Comoro as we suggested.

G3IFB (Kenton, Harrow) was called by VP8AO at 22.15 G.M.T. on February 25 and then worked VP8BO (14025 kc/s) who told him he had been wanting a G contact for a long time, '8BO is running 300 watts to a rhombic beamed on the U.K. He told G3IFB that he had received great help from the R.A.F.A.R.S.

Forty Metres

B.R.S.19107, who specializes in l.f. band DX, says that just before Christmas, Far East conditions were excellent, but now the North American area has replaced UA0 and XW8. Best time for the distant stuff is 06.00-09.00, when VE6, VE8, KL7 are good. VP2LU, XE1FV, '3AH, OD5AI, ZD6BX and PJ2ME were logged, the PJ making John's 200th country on the band !

B.R.S.20317 heard VQ6LQ, VK9XK, 4X5RE, UH and UI on the key, which mode netted EA8BZ, VQ4AQ, '6LQ, JA7NL (19.35), VQ5GC, HK3JI, W5MNR, 'YOU, 'EGD, UA9 and OX3LW for **B.R.S.20106.**

Top Band

Back to **B.R.S.19107,** who remarks that this year, unfortunately, many of the Southern United States are barred from using the band, as are stations in KG4, KP4, KS4, KV4, KZ5 and Ws operating in VP4 and VP9. However, XE2OR and VP3AD (1801 kc/s) are active, though unheard so far. On the other hand, EL1C, VE1VN, Ws '1BB, '1LYV, '1PPN, '2EQS, '2GGL, '3HL, '3RGQ, '8ANO and Ks '2KWP and '2BWR have already been received. **B.R.S.20106** recently heard DL2ZG, ZB1HKO (05.00) and W3HLK.

To Whom It May Concern

B.R.S. 19107 says he cannot be bothered to send listener reports to ZD8 stations !

News from Overseas

Newfoundland. On April 1, there comes into force a re-arrangement of call-signs for the VO area. Horace McNeill (VO3X) says a new series of two-letter call-signs will be issued, with VO1 (Newfoundland) and VO2 (Labrador). After twenty years as VO3X, he will now be using VO1DX—DX friends of past years, please note.

Aaland Is. A.R.R.L. announces that these islands (prefixed OH0) will be added to the DXCC Countries List as from March 1. **OH2AA/0** is active on several bands. **G3ESP** (Pontefract) worked him on 21 Mc/s and he has been heard on 14 and 28 Mc/s, c.w. and phone.

ZD8JP's arrival on the air brings the total of active Ascension Is. stations to two ! At present, he uses 20 watts on 14 Mc/s c.w., but a two-year tour of duty with

Cable and Wireless gives him time to turn to something more ambitious. Meantime, he finds his low power is quite enough to attract attention. His trouble lies not in making a QSO but in hearing the station he is working through the S9 hopefuls who *will* call at the wrong time. Derek Greig (ex-B.E.R.S.925) is now active from Kumasi as **ZD4CI.**

Christmas Is. As reported last month, three stations should be active by now. Bob Cheeseman (G3KDE, ex-5A1TQ) awaits a call, while VR3E and VR3F have been allotted. One or two Gs have been heard through the usually S9 W Brigade and Bob thinks that 04.00 to 09.00 G.M.T. daily, plus 15.00 to 19.00 G.M.T. on Sundays is indicated for G QSOs. The VR3s are not sure how long they will be permitted to operate and so their QSOs will be short and snappy. **G2MI** has agreed to handle cards in both directions. The only other active VR3 is VR3B, on Fanning Is., and cards from there may take some time, as Fanning is very isolated and the mail service is infrequent. Incidentally, G2MI has bad news for those who have worked ZD9AF. Neither the Colonial Office in London nor the South African Authorities know anything about him so he must be presumed to be no good at all. G2MI hears that W5MET has left Arkansas and is now K6VUH. With 196 countries worked from W5, he hated leaving for the Californian smog! Anyone short of a W5MET QSL may write to Richard P. Kemp, 12802, Izetta Ave., Downey, Calif.

W4ML (Bayside, Va.) sends a check-list of UA0 Klub stations in Zones 18 and 19. In Zone 18, there are UA0s 'KAB, 'KAC, 'KAD, 'KAG, 'KOA, 'KSB and 'KUO, while Zone 19 houses 'KCA, 'KGA, 'KGO, 'KFA, KFE, 'KFF, 'KFG, 'KFO, 'KJA, 'KJB, 'KKB, 'KKE, 'KQB and 'KQC.

G2MI finds that VP5 licences issued as at December 31, 1956, comprise twenty-three in Jamaica proper, together with VP5s 'BD, 'BE, 'BH, 'BP in the Caymans and VP5s 'ES, 'FH, 'GB, 'HC, 'KT, 'ML, 'MP, 'NC and 'RR in the Turks and Caicos Group.

ON4QX (Antwerp) says some Gs have so far not QSL'd to ON4QX/LX, active last year. All cards received will be answered 100 per cent. This year, '4QX plans to visit San Marino, either in June or July. Further details later. **ZC4GT** (Ayios Nikolaos) continues to fight off a barrage of Klub QRM. Operators G3IJX and G3KFL worked ET2US, ET3LF, FK8AO, ZD9AE, FG7XC, KR6SC, 4X5RE (Sinai), ZD8JP, VK9AJ. FB8, VQ8 *and* FO8BA on Clipperton Is., but they still like to chat with G stations on 14 Mc/s. Both are expecting their own calls and will use LG300 and Panda Cub transmitters therewith. YA1AM has been heard, working stations to the East.

W6YY (La Canada, Calif.) supplies more tit-bits: I5RAM still pushes a good signal through on 14078; CE0AC (Easter Is.) is back on c.w. on 14065 at 06.00 G.M.T. CR4AS has been on 21232 kc/s phone, but he closes at 01.00 G.M.T. when the local power is cut off. ZD1FG has also been on phone (21200) around 02.00. W6YY and W6CUQ both had phone QSOs with YA1AM and W6YY says W6ITH of FS7 and PJ fame becomes the first W to have all Zones confirmed on phone. Thirty-seven, incidentally, were worked on s.s.b. Dave Atkins (W6VX), now on a world cruise, is supposed to be stepping off at Bali and at Seychelles with a low-power transmitter. Call-signs to be used are not known. (Let's hope he makes both, anyway.)

The November/December 1956 issue of *The Malayan Radio Amateur* contains an interesting description of the part played by Amateur Radio in the two emergencies and consequent rescue of the unfortunate Danny Weil in his yacht *Yasme*. This bi-monthly publication is well worth reading and particulars may be obtained from S. A. Faulkner (VS2DB), P.O. Box 777, Kuala Lumpur.

Contest Comment

B.E.R.U. was fought in good conditions on the whole, although the going was tough on the two l.f. bands. **G5MP** (Hythe) found his LG300 working happily on 500 volts and his 25 watts input in the Junior B.E.R.U. was adequate to net him 80m QSOs with VEs, VOs, ZC4 and ZB1, while on 40 he connected with ZB1, ZC4, VE, VO, VQ4 and VQ6. '5MP feels that many people would be interested in a list of "Claimed Scores" while the battle is still fresh in their minds; this seems a good idea. Send them along and they will be published in this column. **B.R.S.20249** says his Morse is good enough for ordinary occasions, but B.E.R.U. taxes it somewhat! But he logged ZB1BF on all five bands and heard VE1ZZ for his first VE on 80.

The **A.R.R.L. Phone Contest**—first leg.—**G3COJ** (Maidenhead) found 40 good, on which band he worked W1, '2, '3, '4, '8, and VE8MA, who came back to a CQ call at 09.30 for his first (and so far, only!) VE on 40 phone. '3COJ remarks that some Ws are using 3 element rotary beams on the band. They must be monstrous devices! Incidentally, he is of the opinion that the sun-spot maximum happened late in 1956! **B.R.S.19107** says that between 06.30-09.30 on February 10, 40 sounded more like 10. He logged forty Ws in all areas except W7, as well as KZ5CS and HI8SKE, who presumably is W2SKE when at home. Near misses were VP3HAG, XE1HC, OA5H and HK1MA, all being worked by Ws, while John says KG6, KH6, KL7, KR6 and JA are using s.s.b. and should be audible here with a little care. **G5MP** says a well calibrated receiver is a necessity for guiding the DX into two tiny gaps carelessly left by the broadcasters. He got in a report on conditions during the A.R.R.L. C.W. Contest, when he worked over 60 W/VE on *eighty* from 03.00 to dawn. The other bands were poor on the whole. '5MP finally says that AE1USA may have caused some bother as he is a good signal, working his M.A.R.S. locals . . . and he's 5 kc/s outside the amateur band!

* * *

All for now, except to ask that reports and comments should be posted to arrive by March 22. Good hunting meantime and lots of sunspots. 73

The European Band Plan

PLANNING of the high frequency amateur bands was originally put forward by the R.S.G.B. and unanimously adopted by the European Societies represented at the I.A.R.U. Conference in Paris in 1950. At the I.A.R.U. Region I Conferences held in Lausanne in May, 1953, and at Stresa in June, 1956, it was agreed to continue to operate the plan with only minor alterations. The plan, which is voluntary, is as follows.

Frequency Band	Type of Emission
3500— 3600 kc/s	Telegraphy only
3600— 3800 kc/s	Telephony only
7000— 7050 kc/s	Telegraphy only
7050— 7150 kc/s[1]	Telegraphy and Telephony
14000—14100 kc/s	Telegraphy only
14100—14350 kc/s	Telegraphy and Telephony
21000—21150 kc/s	Telegraphy only
21150—21450 kc/s	Telegraphy and Telephony
28000—28200 kc/s	Telegraphy only
28200—30000 kc/s[2]	Telegraphy and Telephony

[1]7100–7150 kc/s Shared with broadcasting which has priority
[2]To be 28200–29700 kc/s later

FOUR METRES... ...AND DOWN

By F. G. LAMBETH (G2AIW)*

THE season of v.h.f. contests will soon be upon us again. We wish those who will compete a great deal of fun, which is probably the goal of most.

This seems to be a fitting time to publish the Rules adopted at the Stresa Conference last year which will govern the I.A.R.U. Region I European V.H.F. Contest due to take place on September 7 and 8. These rules will apply to both the I.A.R.U. event (which is being organized by R.S.G.B.) and to the National V.H.F. Contest which will run concurrently with it. The rules will be found on page 422 of this issue. As far as the R.S.G.B is concerned these are the only v.h.f. contests during 1957 which will be governed by these rules. Rules for other v.h.f. contests will be published in the usual way. Last year there was some confusion regarding the rules applicable to some R.S.G.B. contests.

The Czechoslovak Central Radio Club is holding a v.h.f. field day during the weekend July 6-7. The 86, 144 and 420 Mc/s bands will be used. This is a portable contest, and anyone requiring further information should write to P.O. Box 69, Prague 1, not later than May 1, 1957. Full information as to site (QTH, altitude, etc.) should accompany the application.

R.S.G.B. 2m Contest

It appears that the note in this column in the January BULLETIN regarding the 2m contest in July was premature. In point of fact the rules for this contest have not yet been finally decided by the Contests Committee.

Conference of V.H.F. Managers

There will be a conference of European V.H.F. Managers (I.A.R.U. Region I) in Paris on April 27 and 28. In order to assist formulation of the agenda, members having points for discussion by the International V.H.F. Committee are asked to write to G2AIW immediately. Remember: if we don't propose we may find it difficult to dispose!

I.G.Y. News

Union Belge des Amateurs-Emetteurs (U.B.A.) of Brussels states that in connection with the I.G.Y. certain experiments are being undertaken at the request of the Royal Observatory at Uccle (Belgium). The programme covers indirect observation of radiations through their effect on radio propagation and entails listening on all frequencies, including v.h.f., for meteor whistles, measurement of background noise, flutter, fading, and also the intensity of signals by relation to geographical direction. Full details and log sheets can be obtained from U.B.A., Post Box 634, Brussels. The co-operation of all amateurs is hoped for. Here are experiments in which B.R.S. members can participate.

Towards Greater Activity

The 144 Mc/s contributor to the *Lea Valley Reflector* says that on Activity Nights the band is what it should be *all the time* and that it is surprising how high activity seems to bring forth good conditions. Why, however, he asks, do most of the operators close down at 10 p.m.? For this reason many missed the notable auroral opening. G3HRH heard GM, GW, DL, ON and PA via the aurora.

It is suggested that a local 2m net should be organized for the Lea Valley area, and as the question of rotary aerials is difficult for some to resolve, various people have been experimenting with vertical polarization. G3ZQ and '3EOH have built a ground plane which is installed in '3EOH's loft, while B.R.S. 20533 and G3GOZ have been trying out coaxial dipoles. G3FO has tested a 4 element Yagi, vertically polarized.

G2XV (Cambridge) says: "We all switch on our receivers, listen round, hear nothing, switch off, and say 'Band dead.' Of course it is—and will stay that way if we don't try a CQ in each direction before we switch off. Let's try this and see the difference!" You know, we think Gerry has got something there!

Two Metre News

Conditions on 144 Mc/s do not appear to have been very good recently, with the exception of the Aurora Borealis period (January 21) mentioned last month, but the Monday Activity Periods have been well supported, with a corresponding increase in operation during the remainder of the week although some correspondents (probably unfortunate as to QTH) complain of low activity—it really does appear that the activity is largely concentrated in the Home Counties. It would be a happy state of affairs if some of the other Regions could get going also.

B.R.S.20133 (Melton Mowbray) missed the auroral opening but has heard nine stations including local resident G5HB.

B.R.S.20162 (Selsdon) states that the average number of stations heard during recent Activity Nights was about 40, spread over 12 to 17 counties and 3 countries. For winter this is quite good, particularly as the weather on at least one occasion (January 14) was unfavourable. Activity is also stepping up during the remainder of the week and altogether 152 stations were logged during the period under review. February 3 was a good day with 62 stations heard in 13 counties and 2 countries. The "aurora night" opened inauspiciously, and it was not until calls by G3BFP/A to Cambridge stations were unanswered (normally certain QSOs) that he realized conditions might be unusual. In this case the slot fed beam was pointed east, and G3FFV (Yorks) was heard 576 (cw) and '3FAN (I.o.W.) 586, but they were not audible in their correct directions. To sum up, French stations were heard with the beam to the north-east, Germans to the north-west, and English Midlands and northern stations from the east. **B.R.S.21136** (Ruislip) found conditions poor to average with activity slightly better with one or two newcomers on the band. **B.R.S.16075** (Shirley, Southampton) says his short list is partly due to poor weather conditions which have sometimes made it impossible to keep the beam under control. Several of the old v.h.f. calls are back on the air again, including

*21 Bridge Way, Whitton, Twickenham, Middlesex.

G2DSW, '3GAV, and '3BHS. The Southampton group hope that petrol rationing will have been abolished by the time the first field day comes along; meantime they are saving some basic " in case."

G8LN (Plumstead) says winter conditions have curtailed 144 Mc/s activity, although conditions generally seem to have been reasonably good at times. However, none of the real Continental openings which might have been expected have matured. '8LN makes an appeal to v.h.f. operators to advise either Headquarters or himself their correct addresses for the new edition of the R.S.G.B. *Call Book*, which he is editing.

G3IEX has left Suffolk, but **'3KFX** has taken his place in that county. **G3ANB**, apparently the only regular " band defender " on the Essex Coast, is still having TVI trouble, but is struggling manfully.

G3EMU (Canterbury) has taken what he calls a long time to work 7 stations after a considerable period of hearing little or nothing. A portable rig has just been completed (6J6 c.o. chain, 12AT7 465 kc/s i.f. and detector, ECC80 audio stages-cum-clamp modulator, ½ ECC82 b.f.o. The transmitter is 6J6-5763-832 p.a.). '3EMU intends if possible to go /P or /A this year.

G2JF (Wye, Ashford, Kent) found little to report apart from the aurora opening on January 21. The same effect was then noted at Wye, with Bristol and Continental stations coming in from the north-west/north-east, whilst propagation from the westerly bearing was excellent—8 or 9 stations were worked in that direction including G3KHA (Bristol).

G5MR (Hythe, Kent) having found that very little seems to penetrate the local hills, the aerial is coming down soon for overhaul; it is hoped that an improvement will result. He is looking for an auroral contact with the Danish I.G.Y. station OZ7IGY as QSOs seem impossible by direct path.

G3LHA has decided to keep the Coventry flag flying as far as v.h.f. is concerned. Activity locally is represented by G3KEF (144.4), '3DKF (144.6), '3DKF/A (active 13.00-13.30 G.M.T. only on 144.7), '6YU (144.72) with, of course, '3LHA (all in Coventry). Activity in the Midlands seems to be increasing, and Birmingham stations are on most nights. There is a fair amount of activity between 13.00 and 13.30 each day but DX activity seems low. PE1PL was, however, heard on February 21 and 22 working G2HCG on sked. '3LHA worked '5YV, so dividends may be possible for those able to work during lunch-time. '3LHA has raised '3KEQ (Sanderstead) every evening since February 15 (except on the 18th) on phone and it is hoped the sked will continue. Another sked now running is between G3ABA (Guildford) and '2ATK (Shirley, Birmingham) at 10.30 G.M.T. on Sundays. These skeds are very useful, says '3LHA, in checking local and DX conditions. New stations worked lately are G3LGJ (Castle Bromwich), G2NV (Stourbridge), a real Old Timer vintage 1911, G3BU (Leicester), G3YZ/P (Cotswolds), G6PD and G3DKF/A (Coventry) and G3ENY/P (Shropshire).

G5UM (Knebworth) reports that Hertfordshire now has a second 2m Group, based on Berkhamsted/Hemel Hempstead, in which there are 6 stations. Some have been on regularly since the Monday Night sessions started. At the suggestion of G3PV they are extending the Activity Night practice by having a " fixed time schedule " at 9 p.m. every day. G3PV echoes G2XV's remarks elsewhere and says " we would like to encourage them to switch on their transmitters as well as receivers ". G5UM also keeps a log every Monday of stations " called by other stations ". Although incomplete the total on February 25 was well over 30 stations in the Home Counties. G5KG (Chelmsford) compared notes with '5UM who observed that '5KG rarely works fewer than 10 stations each Monday—an excellent and consistent performance by one of the founder-protagonists of the Monday Activity Night.

Four Metre News

G3EHY (Banwell), who is remembered for his exploits on 2m, has sent some interesting notes regarding West Country operation on 4m. The active stations in that area are given as G3YH (70.3), '3HHY (70.366), '3KHA, GW4CG (low end), '8SU (70.224) and G3EHY (70.205). Activity is mainly confined to the hours 18.00-19.00 and then 23.05 until the early hours of the morning. Sunday activity is from 11.00 G.M.T. onwards. Phone contacts between G3EHY and GW8SU are usually S7/8 both ways, but QSOs should soon be established with the London area. G3EHY hopes that some Sporadic E DX contacts may be possible with Europe as was the case on the old 5m band. '3EHY says that as beams are regularly turned eastwards, there is every encouragement for London stations to look and call to the west. He was pleased to raise G3CLW (Bromley, Kent) on February 9 on c.w. for a very solid QSO, which was completed on phone. Reports were G3CLW, 53/69 c.w. and 6/7 phone. G3EHY 56/89 c.w. and 7/8 phone. The equipment at G3EHY is now 829B p.a., aerial—3 element beam folded driven element with ¼ wavelength spaced reflector and 0.1 wavelength spaced director fed through a transformer with 300 ohm ribbon. The receiver is a modified Type 27 unit feeding a BC342.

G3EHY thinks that B.R.S.20162's remarks (February BULLETIN) can be easily contradicted. On going through QSL cards covering 5m contacts during 1947/48, it is seen that many countries (SM, OK, OE, HB, F, I and North Africa) were worked on Sporadic E. Similar conditions will probably lead to QSOs on 4m but if so this will be something which is not possible on 2m—something very interesting and exciting. Even transatlantic QSOs cannot be ruled out altogether. Although the B.B.C. Television channel in the south-west (65 Mc/s region) is rather close to the 4m band, amateurs in the area are very keen and are determined to make a go of it regardless of drawbacks. All calls should be on c.w. and contact first made by this medium. Weak phone signals with practically no modulation on the carrier are quite useless.

G5MR (Hythe, Kent) has heard no 4m amateur signals since a crossband QSO with G5KW already reported. **G3HKV** is now equipped for 4m transmission and reception. The gear in use is an R.E.E. Communicator and operation is from Crewkerne (Somerset) under the call G3HKV/A, or mobile as /M. A new 40 watt transmitter will shortly be ready.

G2ABD (Kenton) thinks that with very few exceptions 4m activity is confined to the Southern Counties. " Surely," he says, " this cannot be true? " It seems to be up to other areas to make themselves felt, either on the air, or by reports to this column. As far as is known, there are about 30 stations now on the band. G2ABD advises any G-DX stations calling London to remember that the low end of the band is completely blotted out by a 5-carrier station, hum-modulated, which seems to be located near London Airport.

G5KW reports that the first cross-band contact to the Continent on the band was made by **G2HCG** who worked PE1PL on 2m.

G6NB (Brill, Bucks.) has worked **GW8UH** on 4m.

Seventy Centimetres

G2JF (Wye, Ashford), **G5MR** (Hythe, Kent) and **G3EMU** (Canterbury) are all working hard to put their

corner of Kent in the 70 cm picture this coming summer. Propagation is usually difficult from there but they are optimistic—we certainly wish them every success.

Six Metres

Although reports are scarce, it seems that there are still possibilities of signals on this band from unlikely places. On February 21, **G5MR** (Hythe, Kent) heard **FF8AP** calling "CQ Six/Ten." G5MR was unable to reply as the 10m transmitter was temporarily disconnected. Little has been heard lately from North America but during a 10m phone QSO with VP6HR on February 18 G5MR was told that VP6JR and '6WR are active on 6m.

MONDAY NIGHT AT 8
IS TWO METRE ACTIVITY TIME

Everyone who has two metre equipment in operation should switch it on between 8 and 10 p.m. every Monday evening, whether conditions seem likely to be good or not.

Monday night is two metre activity night. See how many stations you can work, and report the results to G2AIW (V.H.F. Editor).

AND WEDNESDAY NIGHT, TOO

Listen on 70.2 to 70.4 Mc/s on Wednesdays. This is 4 metre activity night.

In a letter to G6CL, Ed. Tilton **(W1HDQ)**, V.H.F. Editor of *QST*, says, "Some of these (British) fellows went to considerable trouble to help us out. Several 50 Mc/s beams were erected and 50 Mc/s converters put together. . . . Knowing that you have no band on which this gear can be used otherwise, we are all the more grateful for this effort. I would appreciate it if you would convey to all concerned . . . the thanks of American v.h.f. enthusiasts for this fine co-operation.

We have the good news of your new band at 70 Mc/s. Though I doubt that we will see more transatlantic v.h.f. work before next fall, there appears at least a chance that the m.u.f. may go high enough by next November to permit DX work on 70 Mc/s. We will make every effort to get American stations set up for listening on 70 Mc/s and transmitting on 50 Mc/s, in the hope that crossband QSOs may be made between these bands. Beginning in September I will be working on 28 Mc/s daily around 12.00 G.M.T. with the express purpose of lining up tests."

Late News

From February 28 to March 3, v.h.f. conditions were very good, amounting to a sustained opening. Fortunately activity was at a high level and a great many contacts were made with ON4, PA, F and DJ stations. Propagation was unusual in that British signals tended to be better received on the Continent than continental signals in this country. Barometric pressure was high on the Continent and slowly falling in the U.K.

PA0FB was a consistent signal on 2m until 3 a.m. on the morning of March 2. On one occasion, PE1PL gave G5KW a report of 50 microvolts.

On 4m, G2HCG and G5KW had a three way contact with PE1PL on 2m on March 2. On the same day, G6NB also worked PE1PL cross-band.

* * *

That's all for now, but don't forget the London V.H.F./U.H.F. Convention at the Bonnington Hotel on May 25. We hope the next period will be livelier; reports please not later than March 20. Some of you still leave it very late!

Worked and Heard on V.H.F.

Two Metres

B.R.S.16075 (Shirley, Southampton)
Heard: G2NM, 2YB, 2FJR, 2HCG, 3CGQ, 3GHO, 3GWB, 3IIT, 3IRS, 3JFR, 3KHA, 3KPT, 3LOK, 5KW, 5MA, 5WW, 6NB, 6AG, 8VZ, ON4BZ.

B.R.S.20133 (Melton Mowbray) January 22–February 20.
Heard: G2BVW, 2FNW, 3BA, 3BAC, 3BU, 3JWQ, 5HB, 5MA, 6XM.

B.R.S.20162 (Selsdon) January 14–February 13.
Heard: DL3YBA, F3YE, 8IR, 8AA, G2AHP, 2AHY, 2AIH, 2AJS, 2ANS, 2ANT, 2ATK, 2ATK/M (Bushey), 2AUD, 2BRH, 2CD, 2CIW, 2CPX, 2DCV, 2DDD, 2DSW, 2DVD, 2FJR, 2FM, 2FMJ, 2FNW, 2GG, 2HCG, 2HDY, 2JF, 2JM, 2LW, 2MV, 2RD, 2TP, 2UJ, 2WJ, 2WS, 2XV, 2YB, 3AAZ, 3ABA, 3ANB, 3BA, 3BEX/A, 3BII, 3CGQ, 3CNF, 3CO, 3CVO, 3DF, 3DKF, 3DOR, 3DQC, 3ECA, 3EGG, 3EJO, 3EMG, 3EMU, 3EOH, 3EOH/A (Southgate), 3EYV, 3FAN, 3FCQ, 3FD, 3FFV, 3FMP, 3FNL, 3FP, 3FQS, 3FUH, 3GDC, 3GDR, 3GGJ, 3GHI, 3GHO, 3GOZ, 3GWB, 3GZO, 3HAZ, 3HBW, 3HHY, 3HRH, 3HWJ, 3HXS, 3HZJ, 3IEX, 3IIT, 3INU, 3IRA, 3IRW, 3IUL, 3JFR, 3JN, 3JNI, 3JQN, 3JR, 3JTQ, 3JWQ, 3JZG, 3KDD, 3KEF, 3KEQ, 3KFD, 3KFX, 3KHA, 3KLI, 3KPT, 3KQC, 3LCK, 3LHA, 3LOA, 3MI, 3PV, 3VI, 3WS, 3XC, 4DC, 4PS, 5BD, 5BQ, 5HN, 5JO, 5KG, 5KW, 5MA, 5NF, 5OX, 5RD, 5UM, 5WW, 5YH, 5YV, 6AG, 6JK, 6JP, 6LL, 6LL/A (Cuffley), 6NB, 6NF, 6OU, 6OX, 6XM, 6XX, 6YP, 6YU, 8AL, 8KW, 8LN, 8RW, 8SC, 8SK, 8VZ.

B.R.S.21136 (Ruislip) January 18–February 15.
Heard: G2AIH, 2AJS, 2ATK/M, 2DCV, 2FM, 2HCG, 2JF, 2RD, 2WS, 3ABA, 3AFN, 3BTC, 3BFP/A, 3CO, 3CNF, 3DF, 3DOR, 3ECA, 3FQS, 3GHI, 3HBW, 3HWJ, 3HZJ, 3IUL, 3JN, 3JQN, 3LOA, 3MI, 4DC, 5KG, 5KW, 5MA, 5NF, 5WW, 6AG, 6LL, 6NB, 6OX, 8CK, 8RW, 8SC, 8SK.

G2JF (Ashford, Kent) January 18–February 20.
Worked: DL3YBA, F8AA, 8OB, 9DI, G2ANS, 2DPK, 2DSW, 2FJR, 2FMJ, 2HCG, 2GWB, 3ANB, 3CGQ, 3CNF, 3CO, 3CVO, 3DC, 3FCQ, 3FNL, 3GAV, 3GHO, 3GOZ, 3HRH, 3IIT, 3INU, 3ION, 3JNI, 3JWQ, 3KFX, 3KHA, 3KQC, 4OT, 5BD, 5JO, 5NF, 5UM, 6AG, 6LL, 6NB, 8SK.

G3EMU (Canterbury) to February 20.
Worked: G2WJ, 3HAN, 3KFD, 3KFX, 4IB, 5JO, 5KG.

G3LHA (Coventry) January 21–February 21.
Worked: G2ANS, 2CVD, 2FJR, 2FMO, 2FNW, 2HCG, 2NV, 3BA, 3BU, 3CKQ, 3DKF, 3DKF/A, 3EJO, 3ENY/P, 3FTN, 3FUW, 3FW, 3GGR, 3GHO, 3HAN, 3HAZ, 3HTY, 3HXS, 3JGY, 3JWQ, 3JZG, 3KEF, 3KEQ, 3KFD, 3KKV, 3LGJ, 3YZ/P, 5ML, 5YV, 6AG, 6PO, 6XA, 6XM, 6YU, 8VZ. *Heard:* G2ATK, 2BVW, 2DCI, 2JF, 2OI, 3ABA, 3FAN, 3FGT, 3GKZ, 3GWB, 3HBE, 3IOO, 3LAY, 3LDW, 4DC, 5BD, 5JU, 5KG, 5MA, 5SK, 6CI, 6NB, PE1PL.

Four Metres

G2ABD ((Kenton, Middx.)
Worked: G2DD, 3CLW, 3EOH, 3EYV, 3FAN, 3HRH, 3IUL, 5DS, 5KW, 5MA.

Aurora

BILL STORER, who operated as VK1EG from Mawson Base in the Antarctic during 1954-5 had this to say about the effects of aurora displays on amateur signals:—

"Often during the height of a display Europeans which had not been heard for days, often weeks, would come in at phenomenal strength, yet stations in other countries like South Africa, America and Australia, which were clearly audible prior to the aurora, would disappear. Frequently the display would 'kill' a live band in seconds or bring to life a 'dead' band." Much the same mysterious set of conditions prevailed on the commercial frequencies he used.

Radar Association

ON April 10, 1957, at 7.30 p.m., Dr. R. L. Smith-Rose will lecture to the Radar Association on "Radar Technique and Research on Wave Propagation." R.S.G.B. members are invited to attend the meeting, which will be held in the Anatomy Theatre, University College, Gower Street, London, W.C.1.

Amateur Television

By M. BARLOW (G3CVO/T)*

WITH the summer coming along—the season for good v.h.f. openings—now is the time for regular and especially the casual readers of this column to make a few preparations to enable them to receive Amateur Television DX signals should the chance arise. Many will have heard the characteristic buzz radiated by amateur TV stations in the 70cm band, particularly now that G3CTS/T, the Television Society's transmitter at Norwood, is in regular operation.

If the signals are S9 or better, then there is a chance that it will be possible to resolve a picture. Whilst the ideal is to build a tunable 70cm converter with its i.f. in Band I or III, and to feed the output into the domestic TV set, do not be put off by the work involved. Using standard communications equipment switched to its broadest bandwidth condition, attach an oscilloscope or TV set to the loudspeaker or phone terminals. If the 'scope will lock to the pulses being transmitted, then it is worthwhile trying the second experiment. Remove the television set vision detector, or disconnect it from the video amplifier, and feed the audio output of the converter into the video amplifier directly. As every TV set has a slightly different arrangement of circuitry, it is difficult to be exact, but in general a 0.5μF 350V working condenser from the grid of the v.f.a. to the anode of the audio output valve in the communications gear will suffice. *If the set is the a.c./d.c. type be sure to have the mains plug correctly polarized.* The lead joining TV set and audio stage should be as short as possible, of course. The vision quality will be pretty poor, in all probability, due to the small bandwidth of the communications gear (kc/s instead of Mc/s) but, even so, simple pictures such as bars and patterns, and possibly close-ups of heads and shoulders, should be reproduced sufficiently for identification, provided the television set will lock on the synchronizing pulses. Do not be dismayed if negative pictures are seen, as this will depend on the number of amplifying stages in the system. About 5 volts of "audio" is required to modulate fully the average TV set at the detector output.

Simple TV Transmitter

If the TV set has been modified as above, then the detector output itself may be used to modulate the local 70cm transmitter. The p.a. stage gridleak is isolated from the grid by an r.f. choke, and another 0.5μF condenser is taken from the junction of grid leak and r.f.c. to the TV receiver detector output. The transmitter will then be grid modulated by whatever signals are being received. As the 5 volts is not enough for the larger valves, the condenser may instead be taken to the anode of the video amplifier, or to the base of the cathode ray tube which may be more accessible. Depending on the type of receiver the picture radiated may be positive or negative, but at least a picture of quite reasonable quality will be produced. Whilst not recommended for serious work, this scheme does enable anyone with a TV set and 70cm gear to radiate good pictures for test purposes.

Other News

PA0LQ (Leiden) is all ready for the summer season. In three months he has duplicated his 625 line equipment for 405 lines, and has built a 70cm TV transmitter consisting of TT11 "Phi" oscillator, 832 to 145 Mc/s, QQE06/40 tripler and QQE06/40 p.a. This is designed for sending to G2WJ/T and others. The sync generator uses 14 surplus tubes to generate a B.B.C.-type waveform, a saving over the 64 required in the C.C.I.R. 625 line unit!

G2WJ has been making extensive tests with G3CTS/T at Norwood. A simple Yagi at the latter station puts in a much better signal than the big array, which is to be overhauled. First results indicate that with a big receiving aerial, pictures from Norwood should be received well into the Home Counties. Transmission times are 7.30 to 9 p.m. on Mondays, Wednesdays and Fridays, the vision carrier being on 427 Mc/s.

A new Test Card C monoscope is in action at G2WJ, whilst at G3CVO a new aerial coupler to G2WJ's design has increased the r.f. output by some 60 per cent. G3CVO has also designed and built a new sync generator for use on 405, 525, 625 or 819 lines (using only 7 double triodes including the cathode follower outputs) which is mounted on a 15in by 2in panel. The image orthicon camera built by G3KOK/T and G3KWD is now in first class order, and pictures from this camera in the "studio" in G3CVO's garage can be mixed with local test bars, test Card C, or the B.B.C. in any combination! One major lack in the studio is a sufficiency of TV sets for use as monitors. The very cheap ones necessarily used tend to be very old and non-linear, and the dampness does not improve performance. On the occasion of a recent visit by the Cambridge group, two fires occurred, resulting in the loss of three e.h.t. transformers, due to the damp affecting paxolin insulation. Two "professional type" monitors are being built to overcome these difficulties. P. Burrage (Chelmsford) is building a 3cm microwave link using surplus 723A/B klystrons. G3LNY/T (Chelmsford) is another new licence; he has a G8SK-type 6J6 70cm transmitter.

In Eire, Bill Stapleton has applied for a /T licence, and is experimenting with video tape recording at slow speed, on the lines of the various slow scan TV systems. C. G. Dixon and four other colour enthusiasts have visited the B.B.C. colour studios. Mr. Dixon is moving to a good v.h.f. site in the spring, and is contemplating taking out a /T licence.

The Dagenham Town Show in July and the Birmingham Scout Jamboree will both have demonstrations of Amateur TV, petrol permitting. Readers with old projection c.r.t.s are asked to contact G3CVO, as these are in great demand for camera viewfinders and the like. Club secretaries in the doldrums may like to note that two new lecture tapes are in preparation: *Pulse Generation* and *Telecine Scanning*.

*10 Baddow Place Avenue, Gt. Baddow, Essex.

Irish Radio Transmitters' Society

MR. TOM GREEN (EI9N) is the new President of I.R.T.S., having succeeded Dr. Dennis O'Farrell (EI6F), who held that office for many years. Prof. M. E. Folan (EI6W) is the new Vice-President.

Other officers are: Hon. Secretary—S. G Farrelly (EI9Y); Hon. Treasurer—A. V. McKiernan (EI7S); QSL Manager—J. Corcoran (EI5M); V.H.F. Liaison Officer—H. L. Wilson (EI2W).

Comdt. A. C. Woods (EI3L), Dr. T. D. O'Farrell (EI6F), P. T. Daly (EI5G), W. McIllwaine (EI8F), P. Conway (EI3Z) and R. S. Haslan (EI3BC) constitute the Committee.

"Race for Life"

THE British Film Academy recently announced that "Race for Life", the French film with an Amateur Radio theme, had been awarded the United Nations Award for 1956 as the best film illustrating the principles of the Charter of the United Nations.

Council Proceedings

Résumé of the Proceedings at a Meeting of the Council of the Radio Society of Great Britain, held at New Ruskin House, Little Russell Street, London, W.C.1, on Monday, January 21, 1957, at 6 p.m.

Present.—The President (Mr. D. A. Findlay in the chair), Messrs. W. H. Allen, H. A. Bartlett, C. H. L. Edwards, K. E. S. Ellis, R. H. Hammans, F. Hicks-Arnold, J. H. Hum, R. G. Lane, W. H. Matthews, W. R. Metcalfe, A. O. Milne, H. W. Mitchell, L. E. Newnham, W. A. Scarr, J. Taylor, John Clarricoats (General Secretary) and John A. Rouse (Deputy General Secretary).

Membership

(a) *Resolved* (i) to elect 90 Corporate Members and 20 Associates; (ii) to grant Corporate Membership to 3 Associates who had applied for transfer.

(b) The Secretary reported that of the 742 members whose subscription became due on October 1, 1956, 94 became overdue on December 31, 1956. Of this number 14 were London, 51 were Country and 21 were Overseas Corporate Members and 8 were Associates. Of those overdue 5 London, 23 Country and 16 Overseas Members held an Amateur Radio call-sign.

(c) The Secretary reported that 13 of the 94 members referred to in (b) above had written to resign. Of this number 6 had given no reason for resigning, 3 had resigned for financial reasons, 3 had lost interest in Amateur Radio and 1 had resigned because of ill health.

Membership Drive

It was reported that during the quarter ended December 31, 1956, Mr. J. D. Kay (G3AAE) had written to a further 109 prospective members and had received completed applications from 16.

Resolved to place on record the thanks of the Council to Mr. Kay for the efforts he has made in connection with the drive for new members.

Applications for Affiliation

Resolved to grant affiliation to the Crystal Palace and District Radio Club.

Constitution of Committees

The Committees of the Council for the year 1957 were constituted. (An announcement dealing with the constitution of the Committees of the Council appeared in the February, 1957, issue—EDITOR.)

International Geophysical Year

It was reported that Dr. R. L. Smith-Rose, Mr. H. A. M. Clark, Mr. W. A. Scarr and the General Secretary had met recently to discuss I.G.Y. matters, with particular reference to the assistance which U.K. amateurs may be able to give to the project. Dr. Smith-Rose had agreed to submit a letter to the Society outlining his views on the question of amateur participation.

Resolved to discuss I.G.Y. matters at the February, 1957, meeting of the Council.

National Convention

It was agreed to explore the possibility of holding a National Convention during 1957 in (a) York; (b) Leamington Spa or a similar inland resort; (c) Nottingham; (d) Southend-on-Sea.

Boy Scout Jubilee Jamboree

It was reported that the organizers of the Boy Scout Jubilee Jamboree to be held in Sutton Coldfield during August, 1957, had agreed to allow the R.S.G.B. to erect a small stand for the sale of publications in the marquee which will house the Amateur Radio Station.

Resolved to authorize an expenditure not exceeding £20 to meet the cost of erecting a suitable stand and to cover incidental expenses.

Morse Probationary Period

A letter was submitted from the Bury Radio Society in which appeared a resolution pledging full support for the R.S.G.B. The letter indicated that the Bury Radio Society had been asked to support a proposal made by a representative of the TOPS Club that the Morse probationary period should be restored, but had declined.

Resolved to receive the correspondence and to thank the Chairman and members of the Bury Radio Society for their loyal support for the R.S.G.B.

It was reported that the Post Office had received a letter from a radio amateur who claimed a limited amount of support for his request that the probationary period be re-introduced. The Post Office had informed the writer of the letter that they did not propose to re-impose the restriction.

The Secretary explained that the decision to dispense with the probationary period was taken by the Post Office with the full knowledge and approval of the three Service Ministries.

O.R.M.s 1957

Resolved (i) to invite the Representatives for Regions 3, 6, 7, 10, 11, 13 and 14 to put forward proposals for the holding of O.R.M.s in their respective Regions during 1957; and (ii) to inform the Representatives for Regions 1, 2, 4, 5, 8, 9, 12 and 15 that the 1957 Council will propose to the 1958 Council that O.R.M.s be held in their respective Regions during 1958.

A member of Council enquired why it was not proposed to hold an O.R.M. in Region 15 (Northern Ireland) until 1958. The Secretary explained that the O.R.M. held in Belfast during 1955 was poorly supported and that the cost of sending three official delegates to that meeting had been considerable. For those reasons it appeared to be desirable to wait a further year before holding another meeting in Region 15.

Thanet Radio Society

Resolved to authorize the General Secretary to accept an invitation extended to Mrs. Clarricoats and himself to attend the Annual Dinner-Dance of the Thanet Radio Society.

Region 1 V.H.F. Committee

Resolved to appoint Mr. F. G. Lambeth to represent the Society at the Meeting of Region 1 V.H.F. Managers to be held in Paris during April, 1957, and to pay his out-of-pocket expenses in connection with the meeting.

European V.H.F. Contest 1957

Resolved to request the Contests Committee to judge the European V.H.F. Contest, 1957.

Region 1 News

A copy of Issue No. 6 of I.A.R.U. Region I News was submitted for information.

Mr. E. Brown, G3CSP

The Secretary reported that no further communication had been received from the G.P.O.

R.A.E.N. and St. John Ambulance Brigade

The Secretary was instructed to write to the Post Office concerning a proposal that the arrangement with respect to co-operation with the British Red Cross Society should be extended to cover also co-operation with the St. John Ambulance Brigade.

It was reported that Dr. Charles Hill when Postmaster-General had notified the Acting Commissioner of the St. John Ambulance Brigade that he would be prepared to extend the facilities now granted to the British Red Cross Society on receipt of a formal application by the R.S.G.B. as the organization representing U.K. amateurs.

Cash Account

Resolved to receive and adopt the Cash Account for December, 1956, as prepared and submitted by the General Secretary.

Reports of Committees

Resolved to accept a recommendation of the Handbook Sub-Committee dealing with estimates for printing the *Handbook* and other relevant matters.

Resolved to accept recommendations of the Contests Committee dealing with the award of the Victor Desmond Trophy and 1957 Contest matters.

R.A.E.N. Rally

Resolved to request the R.A.E.N. Committee to decide upon the ownership of the R.A.E.N. Rally trophies.

It was agreed to request the R.A.E.N. Committee to submit for consideration a set of rules governing the award of the R.A.E.N. Rally trophies and a recommendation with respect to the award of the trophies for 1956 if the Committee decide that they are the property of the Society.

The meeting terminated at 9.15 p.m.

Corrections

IN the Résumé of the Minutes of the Proceedings at the Meeting of the Council held on December 13, 1956 (as published on page 371 of the February, 1957, issue of the BULLETIN) Mr. E. Brown was referred to as G3ESP instead of as G3CSP. In the same paragraph Mr. E. R. Winterbottom was referred to as Member of Parliament for Brightside, Leeds, instead of Brightside, Sheffield.

Science Through Films and Television

THE Scientific Film Association, on behalf of the International Scientific Film Association, is organizing a three-day conference to be held at the French Institute, South Kensington, London, S.W.7, from April 4 to 6, 1957, which will be attended by experts from home and overseas. One of the main questions to be considered is how the film and television can do more to introduce and interpret science to the man in the street. At the same time, the sponsors, scientists and film and television producers will discuss their problems and will seek to establish the underlying principles.

The Conference will be opened by Professor P. M. S. Blackett, President of the British Association for the Advancement of Science.

There will be film shows each evening which will also be open to non-delegates. All enquiries should be made to the Scientific Film Association, 164 Shaftesbury Avenue, London, W.C.2. (Temple Bar 4694.)

Silent Key

Ernest Dawson Ostermeyer, G5AR

Past President—Honorary Member

IT is with deep regret that we record the passing on March 4, 1957, of Mr. Ernest Dawson Ostermeyer, G5AR, a Past President and Honorary Member of the Society at the age of 78.

Known to all old timers as " Ack R " and to his intimates as " Uncle Ernie," Mr. Ostermeyer was one of the first to join the Wireless Society of London just after the First World War. A first-class craftsman, his station at South Woodford bore much evidence of his talents.

Mr. Ostermeyer was elected to the Council in 1928 and became Hon. Treasurer in 1929. He was elected Executive Vice-President in 1934 whilst still retaining the office of Honorary Treasurer. He succeeded Mr. Arthur Watts, G6UN, as President in 1937 and was elected an Honorary Member during the following year in recognition of his outstanding services to the Society.

It was largely due to Mr. Ostermeyer that the Society's financial position improved out of all recognition during the decade from 1929 to 1939. At the beginning of that period the position was precarious to a marked degree, but from the time 5 Ack R became Honorary Treasurer, under the Presidency of that greatly revered old timer Gerald Marcuse, G2NM, the horizons began to clear. His judicious handling of the Society's finances during that important period in the Society's history saw the tide gradually turn, with the result that the deficits of the late '20s gave way to surpluses in the late '30s.

In the most difficult days it was '5AR and another old timer who provided the money to allow those of us who attended Society meetings at the I.E.E., to enjoy light refreshments.

East London members in particular will mourn his passing for he was, until recent years, a regular supporter of meetings held at Ilford Town Hall. Ever anxious to encourage good workmanship, Mr. Ostermeyer presented a trophy (now known as the 5 Ack R Trophy) to the East London Group for annual award at the East London Exhibition of home constructed equipment.

Quietly spoken and generous to a degree Ernest Dawson Ostermeyer was held in great affection by all who knew him. His life provided a shining example of all that is best in Amateur Radio.

To Mrs. Ostermeyer we offer our deepest sympathies. In her sorrow she will take comfort in the knowledge that her husband will always be remembered as one of that small band of pioneers who helped to build up the Society to a position of eminence in the world of science.

The Society was represented at the funeral, at the City of London Cemetery, Manor Park, London, E.12, by Council Member C. H. L. Edwards, G8TL, Douglas Chisholm, G2CX, and the General Secretary. Mrs. Clarricoats, Mrs. Edwards and Miss Gadsden were also present. Wreaths were sent from the Society and from the London Region. J.C.

D/F Qualifying Events

IN view of the difficulties caused by petrol rationing, the programme of D/F Qualifying Events for 1957 has been cancelled. Present plans are that the National Final will take place as arranged on a " free for all " basis.

Society News

The Scheme of Representation

IN order to broaden the present Scheme of Representation the Council has decided, on the advice of the Membership and Representation Committee, to accord T.R. status to the elected representative of any society or club affiliated to the R.S.G.B., provided the person concerned is a Corporate member of the R.S.G.B. and that his nomination paper is signed by five members of the affiliated society or club who are themselves Corporate members of the R.S.G.B.

Representatives of affiliated societies and clubs will be known as Affiliated Society Representatives (A.S.R.) and they will hold office for one year as from January 1.

A.S.R.s will enjoy the same privileges and have the same status as T.R.s.

As from next year any affiliated society or club which has elected an A.S.R. will be permitted to enter for the National Field Day event organized by the R.S.G.B. provided the election of the A.S.R. shall have taken place prior to April 1 in any particular year.

In order to avoid undue delays the new arrangements will come into force on July 1, 1957.

Affiliated societies and clubs who wish to take advantage of the new arrangements are therefore invited to forward a nomination paper, duly signed by five Corporate Members, to the General Secretary so that it reaches him by not later than June 30, 1957. In the event of more than one person being nominated as the representative of an affiliated society a ballot will take place, details of which will appear in the July, 1957, issue of the BULLETIN.

The Council has agreed that the present scheme of representation, in other respects, shall remain unchanged.

R.S.G.B. Amateur Radio Call Book

MR. W. J. H. Kempton (G8LN), 24 Edison Grove, Plumstead, London, S.E.18, has accepted the invitation of the Council to act as Editor of the R.S.G.B. *Call Book*.

In order that the next edition (planned to appear in August) shall be as up to date as possible, licence holders who change their address after June 1, 1957, and those who are issued with a licence after that date are asked to notify Mr. Kempton.

Changes of address should, of course, also be communicated to Headquarters.

Members who wish to be quite certain that Mr. Kempton has a record of their call, name and address are invited to write to him at the above address.

Radio Amateur Emergency Network and St. John Ambulance Brigade

THE Society is pleased to announce that amateurs who participate in the Radio Amateur Emergency Network may now co-operate with the St. John Ambulance Brigade on precisely the same lines as in the case of the British Red Cross Society. A Notice to amend all existing Amateur (Sound) Licences was published in the London and other Gazettes on Friday, March 1, 1957.

O.R.M. to be held in South Wales

THE Region 10 Representative (Mr. Cyril Parsons, GW8NP) has accepted the invitation of the Council to organize an O.R.M. in Cardiff on a Saturday during September, 1957. Further details will be published later in the year.

London Meeting

MORE than 70 members attended the meeting of the Society at the Institution of Electrical Engineers on March 1, 1957, when Mr. R. G. Lane, G2BYA, lectured on "Modern Amateur Communication Receiver Design." In the absence of the President, Mr. D. A. Findlay, D.F.C., G3BZG, owing to indisposition, the chair was taken by Mr. J. W. Mathews, G6LL (Vice-President). Others present included Messrs. S. K. Lewer, G6LJ (Past-President), D. N. Corfield, G5CD (Vice-President) and Council Members W. H. Allen, G2UJ, and W. H. Matthews, G2CD.

Messrs. Allen, Corfield, Furby, Green, Hawker, Herdman and Morrison took part in the discussion which followed Mr. Lane's lecture.

International Boy Scout Jamboree

IT is expected that the Amateur Radio station being planned for the International Boy Scout Jamboree to be held in Sutton Coldfield, Warwickshire, from April 1 to 12, 1957, will be the largest yet to take the air in the United Kingdom. The organizing Committee, consisting of members of the Midland Amateur Radio Society, the Slade Radio Society, and the Birmingham Amateur Television Club, is planning to install eight transmitters. Already permission has been given by the Postmaster-General for simultaneous operation on more than one amateur band and for the transmission of News Bulletins covering topical items concerning the Jamboree. A list of times and frequencies to be used for the Jamboree News Bulletin Service will be announced later.

The organizing Committee recognise that a tremendous amount of man power will be required to ensure the success of the Jamboree station, and in that connection they again appeal for volunteers to help at, and shortly before the opening of, the Jamboree. Members who can help are asked to write to Mr. Alan Dennis (G3CNV), 47 Hemlingford Road, Walmley, Sutton Coldfield, stating the amount of time they can spare and the particular duties they are prepared to undertake.

The call-sign to be used will be GB3SP.

In addition to manning the Amateur Radio station, local members under the general direction of Mr. Alec Higgins, G8GF (Region 3 Representative) and Mr. G. A. Swinnerton, G6AS (Birmingham C.R.) will also man a stand on which will be displayed R.S.G.B. literature and items of equipment.

Forthcoming Exhibitions

MORE than 50 instrument manufacturers from eight countries will be exhibiting at the *International Instrument Show* (March 25-29, Caxton Hall, London, S.W.1). Tickets can be obtained free on application to the organizers, B. & K. Laboratories, Ltd., 57 Union Street, London, S.E.1.

Tickets for the *Physical Society Exhibition* (March 25-28, Royal Horticultural Society Halls, London, S.W.1), can be obtained by sending a stamped addressed envelope to the Society at 1 Lowther Gardens, Prince Consort Road, London, S.W.7.

Admission to the Sixth Annual *Electrical Engineers Exhibition* (April 9-13, Earls Court, London) will be by ticket obtained free on application to P. A. Thorogood (G4KD), 35 Gibbs Green, Edgware, Middlesex.

Double tear-off tickets providing admission to both sections of the *Components Show* (April 8-11, Grosvenor House, and Park Lane House, London, W.1) can be obtained free by engineers and technicians in the radio and electronic industries from the organisers, R.E.C.M.F., 21 Tothill Street, London, S.W.1.

Tests and Contests

The First 1250 Mc/s Tests
September 1956

IN preparing or reading an account of the first organized tests on the 1250 Mc/s band, it is perhaps natural to compare results with those obtained in the first 420 Mc/s Tests in 1949. Comparisons are proverbially odious. In this case, let us merely say very disappointing.

It is more than seven and a half years since permission was granted for the use of the 1250 Mc/s band, and longer still since stable drive power at 420 Mc/s became commonly available. At the time of the first 420 Mc/s Tests, however, the band had only been available for ten months! The 144 Mc/s band was only a month older, so that suitable driving equipment was still scarce. It is appreciated, of course, that every increase in frequency results in increased complexity of stable equipment. Nevertheless, it was hoped that more than five entries would be received, and more than the mere two two-way contacts on the band would be reported.

Quite a wrong impression of the interest in u.h.f. is given by these gloomy statistics. Much credit is due to those who took part in the work prior to and during these tests on a band where so little co-operation is available. A good omen for the future is the activity in Scotland where one of the two contacts took place.

Contacts and Signals Heard

GM6WL contacted GM6ZV. Distance 6 miles.
G3GDR contacted G3HBW. Distance 6 miles.
G3BVU/P heard by G3FUL/P. Distance 7½ miles. (Cross band contact to 3.5 Mc/s).
G3HBW heard by G5DT. Distance 20 miles (Cross band to 420 Mc/s).
G3HBW heard
G5DT. Distance 20 miles. (Cross band to 420 Mc/s.)
G5CD. Distance 7 miles. (Cross band to 420 Mc/s.)
G5CD heard by
G3HBW. Distance 7 miles. (Cross band to 420 Mc/s.)
G3GDR. Distance 13¼ miles. (Cross band to 420 Mc/s).
G5DT. Distance 15 miles. (Reported later on 420 Mc/s.)
G5KW. Distance 21 miles. (Reported later.)

The Arthur Watts Trophy has been awarded to Arnold Mynett (G3HBW) of Bushey Heath, Herts, for the most meritorious entry. Apart from the results he achieved, his admirably written entry gave a detailed description of the equipment used and logically developed reasoning to support his choice of method and apparatus.

The other entries were received from D. N. Corfield (G5CD) of London, N.W., J. W. Kyle (GM6WL) and J. Hunter (GM6ZV) of Glasgow and from C. J. Beanland (G3BVU) and W. F. Neal (G3FUL) of Luton. Co-operation was the keynote of success for both the Glasgow and the Luton entrants.

G3BVU and G3FUL operated portable, under foul weather conditions, using self-excited equipment. All the other reported operation was crystal controlled from home locations.

Equipment Used

G3FUL used a receiver with an "acorn" tuneable oscillator at 400 Mc/s, feeding a crystal mixer through a resonant cavity filter, and a 30 Mc/s i.f. strip, while G3BVU took an oscillator with some 20 watts input to a 703A, anode modulated by an 807. Stack arrays with mesh reflectors were used. Contact—using 3.5 Mc/s as the return channel— was effected at a distance of 7½ miles. No results were forthcoming when the range was increased to about 25 miles, although previous tests over a similar path at 30 miles have succeeded. Weather conditions were suspected of affecting propagation.

Equipments used by GM6WL and GM6ZV were closely similar. GM6ZV expresses his gratitude to GM6WL and GM3DYC for loan of apparatus, and remarks that he has yet to start work on equipment for the band. Each operator used his normal 430 Mc/s transmitter, with a QQV03/20 p.a., to drive a 446 type "lighthouse" tripler, feeding a 6-element Yagi. Their converters used "acorn" self-excited oscillators at 420 Mc/s and crystal mixers, with tuned quarter-wave harmonic filters and aerial circuits, feeding 24 Mc/s low-noise i.f. amplifiers. The converters were mounted on the double corner reflector aerial systems, and fed the i.f. signals to the main receivers by coaxial cable. Good two-way R/T communication was obtained over some six miles across the City of Glasgow.

G5CD carried out a great deal of experimental work on his 2C39A tripler, obtaining about 4 watts of r.f. for his 15 watts input. Drive was provided by the normal 430 Mc/s transmitter. G5CD has come to the conclusion that the 2C39A requires too much drive to make a satisfactory tripler, and is working on a new one using a DET24/TD04/20, to drive the 2C39A as a straight amplifier. His receiver, unfortunately, was not completed in time for the Tests, so he had to content himself with cross-band contacts. The aerial was a six-turn helix. The receiver "on the stocks" has crystal controlled injection to a crystal mixer.

G3HBW used a DET24 grounded-grid tripler, with transitional radial/coaxial cavity anode circuit, to obtain 3-4 watts r.f. from 15 watts anode input and 7-8 watts drive. Precautions were taken with the shielding in the tripler to avoid stray output on drive frequencies. Linear modulation was obtained by anode modulation of the tripler, coupled with modulation of the two preceding stages.

The receiver uses a silicon-tungsten crystal mixer in a coaxial line, with crystal controlled injection. Great care is taken to limit spurious injection signals by the use of coaxial stages for the last two multipliers in the chain, in addition to the usual high-Q filter between oscillator chain and mixer. A cascode head-amplifier precedes the 27–31 Mc/s tuneable i.f.

The aerial system, covering both the 430 and 1250 Mc/s bands, uses a trough type corner reflector with a half-wave dipole on 420 Mc/s and a full wave aerial on 1250 Mc/s, each placed at a point of maximum forward gain. Separate feed-lines are used, with 72 ohm coaxial cable for 1250 Mc/s and 300 ohm open line for 430 Mc/s.

Tests between G3HBW and G3GDR at a distance of about 6 miles show very little variation with weather conditions. Similar results are obtained over the 20 miles path to G5DT.

In conclusion, thanks are due to the entrants and to those who helped them. Much work is in hand, and much remains to be done. More activity on the band is needed, and, judging by the enthusiasm of the entrants will handsomely repay those who join in this u.h.f. work.

First 144 Mc/s Field Day, 1957

R.S.G.B. members throughout Europe are invited to take part in the First 144 Mc/s Field Day 1957, to be held on May 5. The rules are substantially the same as for last year but in view of the difficulty of locating some small villages, Rule 13 has been amended to read " . . . nearest *town* to be found easily on a map . . . ".

Stations must be operated either " /P " for the main contest or " /M " for the mobile section. Mixed logs will not be accepted. Check logs from fixed stations will be most welcome.

Rules

1. The event is open to all fully paid-up corporate members of the R.S.G.B. resident in Europe.
2. Contacts may be made on telephony, c.w. or m.c.w.
3. Entrants must operate according to the terms of their licences; the input to any stage of the transmitter must not exceed 25 watts.
4. The station must be operated from the same site for the duration of the contest. The National Grid Full Six-Figure Reference must be given in all entries from G, GD, GM and GW. In all other cases, entries must show the latitude and longitude of the station location.
5. Only one contact with a specific station, whether portable, mobile, fixed or alternative address, will count for points.
6. Contacts with unlicensed stations will not be permitted to count for points. Proof of contact may be required.
7. Entries should be written on **lined foolscap or quarto paper, or typed on plain paper**, on one side only, and must be set out in the form shown below:—

144 Mc/s FIELD DAY, MAY 5, 1957

Name..... Call-sign.....
Home address..... Claimed score.....
Site of station.....
National Grid Full Six-Figure reference (or Latitude and Longitude—see Rule 4).....
Transmitter..... Power input..... Receiver.....
Aerial system(s).....

Time G.M.T.	Call-sign of station worked	Report & Serial No. SENT	Report & Serial No. RECEIVED	Location	Estimated Distance	Points claimed
10.04	G3—/P	569A001	559A002	5NE Luton	10 miles	20
10.09	G5—/M	55A002	57A001	6N Watford	9 ,,	18
10.14	G4—	569A003	559A001	Enfield	16 ,,	16
					Total:	

Declaration:—I declare that my station was operated strictly in accordance with the rules and spirit of the contest, and I agree that the ruling of the Council of the R.S.G.B. shall be final in all cases of dispute.
Date..... Signed.....

8. Multiple-operator entries will be accepted provided that:—
   (i) the call-sign and signature of the operator concerned is recorded for each contact;
   (ii) the declaration is signed by only one operator, who will be regarded as the entrant.
9. The event will start as 10.00 G.M.T. and finish at 19.00 G.M.T. on Sunday, May 5, 1957.
10. Power supply must not be derived from public or private supply mains.
11. No part of the station may be situated in any building existent on the site prior to the date of the event.
12. No apparatus may be erected on the site prior to the day of the event.
13. An exchange of reports (RST or RS), the band identification letter A, and a self-assigned three-figure serial number starting between 001 and 100 and increasing by one with each successive contact, together with the same expression of location as given at the head of the log, will be required before points may be claimed. THE EXPRESSION OF LOCATION SENT MUST NOT VARY DURING THE PERIOD OF THE CONTEST, and must consist of distance and direction from the nearest town to be found easily on a map, e.g. RST559A002 5NE Luton (i.e. 5 miles north-east of Luton).
14. Points will be scored on the basis of one point per mile for contacts with fixed stations and two points per mile for contacts with portable or mobile stations.
15. Entries should be addressed to the R.S.G.B. Contests Committee, New Ruskin House, Little Russell Street, London, W.C.1, and must bear a postmark not later than Monday, May 13, 1957.

Contests Diary

1957

March 23-24	-	A.R.R.L. DX Contest (C.W. Section)[4]
April 13-14	-	U.B.A. Contest (Telephony Section)[1]
April 13-14	-	U.B.A. Listeners' Contest[6]
April 13-14	-	R.E.F. DX Contest (Telephony Section)
April 27-28	-	P.A.C.C. Contest (Telegraphy Section)[5]
May 4-5	-	P.A.C.C. Contest (Telephony Section)[5]
May 5	-	First 144 Mc/s Field Day[7]
May 18-19	-	Helvetia 22 Contest
June 1-2	-	National Field Day[2]
June 16	-	420 Mc/s
June 22-23	-	First 70 Mc/s Contest
July 6-7	-	144 Mc/s
August 18	-	Second 144 Mc/s Field Day
August 25	-	1250 Mc/s Tests
September 1	-	Low Power Field Day
September 7–8		European V.H.F. Contest[3]
September 7–8		National V.H.F. Contest[3]
September 8	-	D/F National Final
October 5-6	-	Low Power
November 9-10	-	Second Top Band
November 16-17		Second 70 Mc/s Contest
November 23-24		21-28 Mc/s Telephony

[1] See page 329, R.S.G.B. Bulletin, January, 1957.
[2] For rules, see page 230, R.S.G.B. Bulletin, November, 1956.
[3] Both under Region I I.A.R.U. rules.
[4] For details, see page 329, R.S.G.B. Bulletin, January, 1957.
[5] See page 374, R.S.G.B. Bulletin, February, 1957.
[6] See page 422.
[7] See elsewhere on this page.

16. A miniature cup will be awarded to the winning station, at the discretion of the Council, and the runner-up will receive a Certificate of Merit. An additional Certificate of Merit will be awarded to the leading mobile station.

Mobile Section

All the rules for the portable stations will also apply to mobile stations with the exception of Rule 4, amendment of the log heading under Rule 7, and amendment of Rule 13, as follows:—

4. Mobile stations must quote the location from which each contact is made in their logs, using the same expression of location as is sent to the station with whom they are in contact.
7. **144 Mc/s FIELD DAY, MAY 5, 1957 MOBILE SECTION**

Name..... Call-sign.....
Home address..... Claimed score.....
Vehicle Registration Number.....
Transmitter..... Power input..... Receiver.....
Aerial system(s).....

Time G.M.T.	Call-sign of station worked	Report & Ser. No. SENT	Report & Ser. No. REC'V'D	Location SENT	Location REC'V'D	Estimated Distance	decimal Points.
10.04	G3—/P	55A001	54A002	6SE York	5N Leeds	30 miles	60
10.12	G4—	58A002	55A001	6SE York	Leeds	35 ,,	35
10.19	G5—/M	54A003	44A001	4SE York	10N York	15 ,,	30
						Total:	

Declaration:—I declare that my station was operated strictly in accordance with the rules and spirit of the contest, and I agree that the ruling of the Council of the R.S.G.B. shall be final in all cases of dispute.
Date..... Signed.....

13. The expression of location sent must consist of distance and direction from the nearest town at the time at which contact is established, e.g. RS55A001 5NE Luton (i.e. 5 miles north-east of Luton).

First Four Metre Contest, 1957

Rules

1. The Contest is open to all fully paid-up members of R.S.G.B. resident in Europe.

2. Multiple-operator entries will be accepted provided that:—
   (i) the call-sign and signature of the operator concerned is recorded for each contact;
   (ii) the declaration is signed by only one operator, who will be regarded as the entrant.

3. Contacts may be made on telephony (A3) or telegraphy (A1).

4. An entrant must operate in accordance with the terms of his licence.

5. The station must be operated from the same site for the duration of the contest. The National Grid Full Six-Figure Reference must be given in all entries from G, GD, GM and GW. In all other cases, entries must show the latitude and longitude of the station location.

6. Entrants must operate in the 4 metre band. Scoring contacts may be made with stations operating in any amateur band between 50 and 150 Mc/s for which they are licensed. Only one scoring contact with a specific station, whether fixed, portable, mobile or alternative address, will count for points. Proof of contact may be required.

7. Contacts with unlicensed stations will not be permitted to count for points.

8. Entries should be written on lined foolscap or quarto paper or typed on plain paper (on one side only, please) and must be set out in the form shown below:—

FIRST FOUR METRE CONTEST, JUNE 22–23, 1957

Name..... Claimed Score.....
Address..... Call-sign.....
National Grid Full Six-Figure (or latitude and longitude—see Rule 5 above) .....
Transmitter..... Aerial system.....
Receiver .....

Time GMT	Call-sign of stn. worked	His band	My Report on his signals	His Report on my signals	Location	Estim't'd distance (miles)
17.05	G3ABC	70 Mc/s	569001	579001	Oxford	40
17.10	G2XYZ	144 Mc/s	559A002	569014	Bedford	55
17.18	F9ABC	72 Mc/s	549003	549002	Paris	200
17.30	EI2XX	70 Mc/s	55004	56031	Dublin	230
				Claimed score		525

Declaration: I declare that my station was operated strictly in accordance with the rules and spirit of the contest, and I agree that the ruling of the Council of the R.S.G.B. shall be final in all cases of dispute.

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

9. The contest will take place between 1700 and 2359 G.M.T. on Saturday, June 22, and between 0700 and 1900 G.M.T. on Sunday, June 23, 1957.

10. An exchange of RST or RS reports and a three-figure serial number starting between 001 and 100 and increasing by one with each successive contact, together with station location, will be required before points may be claimed, e.g., RST579001 Oxford.

11. For each contact, points may be claimed equal to the number of miles between the two stations.

12. Entries must be addressed to the Contests Committee, Radio Society of Great Britain, New Ruskin House, 28/30 Little Russell Street, London, W.C.1, and must bear a postmark not later than Monday, July 1, 1957.

13. Certificates will be awarded to the stations placed first and second in each section, at the discretion of the R.S.G.B. Council.

Portable and Mobile Section

All the rules for fixed stations will apply with the exception that Rule 9 is as follows:

The contest will commence at 1000 G.M.T. on June 23, and end at 1900 G.M.T. the same day.

TRADE WINDS

The **General Electric Co. Ltd.** has introduced a new audio output valve, the KT88, with an anode dissipation of 35 watts. The valve is a higher power version of the familiar KT66 although it is smaller in size. With a supply of 500 volts and auto bias, the available power output from a pair of KT88s is 50 watts, or twice that obtainable from KT66s. Fixed bias and an h.t. supply of 560 volts enables a power output of 100 watts to be obtained.

The **McMurdo Instrument Co. Ltd.** has developed a miniaturized four-way voltage selecter (type BMVS/4) from the B9A (Noval) valveholder. The socket is a standard B9A holder in which certain contacts have been omitted. The plug is engraved with the appropriate mains voltage figures and is captive so that it cannot be completely disengaged.

The **Panda Radio Co. Ltd.**, of Castleton, near Rochdale, has opened a London showroom and office under the management of Mr. G. R. Hamilton-Walker (G3LND) at Autavia House, Redcliffe Gardens, Kensington, S.W.10, where the full range of Panda equipment is available for demonstration. Supplies are available from stock. The telephone number is FLAxman 0906.

Radio and Electronic Engineering, Greenham Mills Works, near Crewkerne, Somerset, are now manufacturing R.E.E. "Communicators" for the 28 and 144 Mc/s bands. The receiver section is a double superhet; the crystal controlled transmitter employs a 5/6 watt tetrode in the output stage. Current consumption on 230 volts a.c. is about 100 watts and on a 12 volt battery system 6 amps.

Slow Morse Practice Transmissions

G.M.T. or B.S.T.	Call	kc/s	Town
Sundays			
09.00	G3GYV	1900	Hartford, near Northwich
09.30	G3BKE	1900	Newcastle-on-Tyne
10.15	G3FBA	1910	Bath
10.30†	G3DGN / G3GZB	1930	North London
11.00	G2FXA	1900	Stockton-on-Tees
12.00	G3LP	1850	Cheltenham
12.00	G3KAN	1850	Northampton
12.00	GI5UR	1860	Belfast
21.00	G2FIX	1812	Nr. Salisbury
22.00	G3ARM	1919	Guildford
Mondays			
18.30	G3NC	1825	Swindon
Tuesdays			
18.30	G2FXA	1900	Stockton-on-Tees
20.30	G9GDZ	1905	Kingsbury, N.W.9
21.00	G3EFA	1855	Southport
21.45†	G3ETP / G3JMX	1875 / 1860	Lowestoft
22.30†	G3IIR / G3GQK	1915	Norwood
Wednesdays			
18.30	G3GCY	1830	R.A.F., Dishforth
19.00	G3HUB/A	1902	Chelmsford
Thursdays			
18.30	G3NC	1825	Swindon
20.00–†21.00	G2ABR / G3FCY / G3GWT / G3KTO	1919	Hull, Yorks
20.30	G3JQM	1878	Barwick, Yeovil
Fridays			
20.00†	G2FNI / G3EGX / G3ERB	1875	Wirral
20.30	G3ICX	1915	Sutton Coldfield
21.30†	G3KLZ	1860	Bradford
	G3INW (or G3KSS)		Bradford
	G3KEP		Bingley
22.00	G3KYU	1859	Bournemouth
Saturdays			
13.00	G2FXA	1900	Stockton-on-Tees
21.00	G3HWI	1987	Blackburn, Lancs
23.00	GM3HBY	1900	Glasgow

† *Alternately.*

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

General

Four and only four official v.h.f. contests shall be held each year within Region I, but each Society in Region I shall be free to hold whatever contests it wishes in its own country. The first three will be sub-regional contests to increase activity in each Region I country, but foreign v.h.f. stations can participate if they so wish. The fourth is to be called the European V.H.F. Contest and it is to be arranged by a different Region I radio society each year. The sequence is Austria, Belgium, Denmark, France, Germany, Great Britain (in 1957), Holland, Italy, Jugoslavia, Sweden and Switzerland.

Sections of Contest

In each contest there will be four separate sections:

(1) Single-band operation: fixed stations.

(2) Multi-band operation: fixed stations.

(3) Single band operation: mobile/portable stations.

(4) Multi-band operation: mobile/portable stations.

Mobile/portable stations must remain in the same place during the whole contest and must use /M or /P as applicable. All stations may be operated by one or more operators; the call-sign of only one of these operators, however, may be used and multiple call-signs must not be employed. All operators must be fully licensed. Fixed stations must give their exact location and mobile/portable stations their location in distance and direction from the nearest town. The input power must not exceed that specified on the station licence.

Dates

The contests will take place during the first week-ends of June, July, August and September in each year. (The date sequence 31/1 does not count as a weekend.)

Times

The contests will run continuously from 17.00 G.M.T. on the Saturday until 17.00 G.M.T. on the Sunday.

Number of Contacts

Each station can be worked once only for points on each band. If a station is worked again one contact only will count.

Types of Emission

A1, A2 or A3.

Code Numbers

A code number must be exchanged during each contact consisting of the RS or RST report followed by a serial number beginning at 001 for the first contact. To claim a contact a complete code number must be received.

Points

Distance covered in QSO		145 Mc/s	435 Mc/s and higher
0—100 km;	0— 62 miles	1 point	10 points
100—250 km;	62—155 miles	2 points	20 points
250—500 km;	155—311 miles	4 points	40 points
500—700 km;	311—435 miles	8 points	80 points
700— — km;	435— — miles	10 points	100 points

(The verification of distances between stations scoring points in the contests shall be made by Great Circle calculation.)

Final Score

The final score will be the sum of all points claimed. If two or more stations have the same final score in a contest the result shall be shown as a draw.

Logs

Log sheets must be compiled as shown in the following sample. Logs for the first three contests each year must be sent to the V.H.F. Manager concerned not more than two weeks after the contest weekend; i.e. they must be postmarked not later than the second Sunday after the contest. Late entries will not be accepted.

Two copies of logs for the European V.H.F. Contest must be sent in the first place to the V.H.F. Manager of the country concerned. Each V.H.F. Manager will check the entries and forward the duplicate log duly certified to the V.H.F. Manager of the Society responsible for organizing the contest that year, at the latest on the fifth Sunday after the contest. The judging of European V.H.F. Contests shall be the responsibility of the Society of the country organizing the contest and their decision shall be final.

Awards

Each section winner will receive an award and the competitor with the highest overall score will receive a Challenge Trophy to be held for one year.

Disqualification

Competitors deliberately contravening the rules of a contest will be disqualified. Minor errors may result in loss of points.

Sample Contest Log Sheet

Name..... Call-sign.....
Location .....
(First) Operator's full address.....
Latitude .....
Longitude .....
Height above sea level.....
Transmitter final stage(s).....
Input power .....
Operating freqency(ies) .....
Crystal control or v.f.o.?.....
Receiving equipment .....
Aerial(s) .....
Bands used.....(A = 145 Mc/s; B = 435 Mc/s; C = 1250 Mc/s; a.s.o.)

Date	Time	Call	QTH	Type	Sent	Rcvd.	QRB	Pts.	Band
3·9	1704	EI2W	Dublin	A3	56001	55012	625 km	8	A
3·9	1729	EI2W	Dublin	A1	549002	539013	625 km	80	B
3·9	1739	G5YV	Leeds	A3	589003	579032	435 km	4	A
3·9	1801	F9CQ/p	Valery	A1	579004	569026	205 km	2	A
3·9	1814	F9CQ/p	Valery	A1	439005	449027	205 km	20	B
3·9	1842	PAØBL	Hague	A1	599006	599031	34 km	1	A
3·9	1854	PAØBL	Hague	A1	599007	599032	34 km	10	B
3·9	1909	PAØBL	Hague	A1	578008	548033	34 km	10	C
4·9	1002	ON4HN	Ant-werp	A3	58105	59132	132 km	2	A

Number of contacts..... Points .....
Sum of distances..... Best DX Worked.....
Number of countries worked.....
Date..... I certify that the above details are correct
Operator's Signature.....

*Adopted at the Second Triennial Conference of the I.A.R.U. Region I Division, Stresa, Italy, June, 1956.

U.B.A. Listeners' Contest

SHORTWAVE listeners are invited to support a Listeners' Contest which will take place during the period of the U.B.A. Phone Contest (12.00 G.M.T. on April 13 to 2400 G.M.T on April 14) on all bands from 3.5 to 28 Mc/s. One point will be scored for each contact logged between a Belgian station and another Belgian station or between a Belgian station and a foreign station. It is important that the reports exchanged should be correctly recorded. The total number of points scored will be multiplied by the number of bands the entrant uses during the contest.

Entries should be sent to ON4MC, Traffic Bureau, U.B.A., 32 Rue Joseph Wauters, Charleroi, Belgium, from whom further details may be obtained.

Map of Antarctica

MEMBERS interested in locating the precise position of stations of all nations operating in Antarctica will find the *Daily Telegraph* Map of Antarctica of great assistance. The map, which is coloured, measures 30 in. by 20 in. and costs 2/-.

Regional & Club News

Bailleul Radio Society (Arborfield).—" Short Waves from Bailleul " is the title of an article by AQMS T. H. Holbert in the February number of the *REME Magazine*. The article is intended to stimulate greater interest in Amateur Radio throughout the Corps. The Bailleul Radio Society station G3IHH operates on Top Band most evenings. Morse classes have been re-started and a 2 metre group is now active. Efforts to form an R.S.G.B. Group in the area have been held up temporarily because of transport difficulties.

Bristol.—The film show arranged by Bob Lane (G2BYA) for the Ladies' Night on February 1 was very well supported. Over 50 members heard a talk by R. V. Hinchliffe (G3KHA) on " Seventy Centimetres and Down " later in the month. At the March meeting E. C. Halliday (G3JMY) will be speaking about " Simple Test Equipment for the Amateur." On April 26, R. G. Shears (G8KW) is to describe and demonstrate Geloso and Hamobile transmitting and receiving equipment. *Hon. Secretary:* D. F. Davies (G3RQ), 51 Theresa Avenue, Bishopston, Bristol 7.

Bury Radio Society.—The next meeting will be held at the George Hotel, Kay Gardens, at 8 p.m. on April 9th. *Hon. Secretary:* L. Robinson, 56 Avondale Avenue, Bury.

Cambridge and District Amateur Radio Club.—The A.G.M. will be held at The Jolly Waterman, Chesterton Road, Cambridge, on March 22, at 8 p.m. *Hon. Secretary:* F. A. E. Porter, 38 Montague Road, Cambridge.

Cheltenham.—At the A.G.M. on February 7, it was agreed that the lecture on " Amateur Colour Television " by C. Grant Dixon in January was the highlight of the past year's programme. Mr. Grant Dixon's talk was illustrated by a working demonstration and slides. At the April meeting there will be a talk on the " Electronic Organ."

Crystal Palace and District Radio Club.—" Mobile Communication with the Automobile Association " is the title of the lecture to be given at the meeting on March 16, at 7.30 p.m., at Windemere House, Westow Street, Crystal Palace, S.E.19. *Hon. Secretary:* G. M. C. Stone (G3FZL), 10 Liphook Crescent, Forest Hill, London, S.E.23.

Flintshire Radio Society.—This society was formed on January 7, with the following officers: *Chairman*—F. G. Southworth (GW2CCU); *Hon. Treasurer*—Peter F. Jones (GW3FPF); *Hon. Secretary*—J. T. Lawrence (GW3JGA), " Perranporth," East Avenue, Bryn Newydd, Prestatyn; *Committee Members*—G. H. Jones (GW3CF), G. Chambers and W. Davies. Meetings are held on the first Monday in each month at the Railway Hotel, Prestatyn. More than 20 members were present at the February meeting when GW3CF gave a talk on " V.f.o. Construction." A welcome visitor was ex-HA5KBA. A Junk Sale has been arranged for the meeting on April 1 at 7.30 p.m.

Grafton Radio Society.—On January 11 the General Secretary of the R.S.G.B. (John Clarricoats, O.B.E., G6CL) spoke on " The Past, Present and Future of Amateur Radio." Other recent lectures have included " Grid-dip Oscillators " by E. Alban (G3JEA). The society's new h.f. transmitter is now in operation. Prospective members and visitors are always welcome at meetings (see *Forthcoming Events*). *Hon. Secretary:* A. W. H. Wennell (G2CJN), 145 Uxendon Hill, Wembley Park, Middlesex.

Grimsby Amateur Radio Society.—Meetings are held at R.A.F.A., Abbey Drive West, at 8 p.m. on alternate Thursdays. On March 28 there will be a recorded lecture on " Aerials " and on April 11 an amateur station will be on the air. Visitors will be most welcome.

Liverpool & District Radio Society has recently published, price 9d., a list of call-signs, names and addresses of radio amateurs living in the area covered by the society. The list will help those who aspire to claim the " Worked Liverpool Award." Copies may be obtained from the *Hon. Secretary:* D. Wardle, 16 Mendip Road, Liverpool 15.

London U.H.F. Group.—At the meeting on April 4 at the Bedford Corner Hotel, Bayley Street, off Tottenham Court Road, W.C.1, there will be a talk on " Overtone Crystals " by a representative of Cathodeon Crystals Ltd. The meeting will commence at 7.30 p.m. *Hon. Secretary:* A. J. Worrall (G3IWA), 169 Kent House Road, Beckenham, Kent.

Medway Amateur Receiving & Transmitting Society.—At the A.G.M. in February, the following were elected: *President*—G3BRJ; *Chairman*—G2CBA; *Vice-Chairman*—G3FPV; *Hon. Secretary*—G3KNO; *Committee Members*—G3LID, G3HTQ. Meetings are held on alternate Mondays at 8 p.m. at the Golden Lion, Old Brompton forthcoming meetings being on March 25, April 8 and 22.

Newbury & District Amateur Radio Society.—Owing to petrol rationing, it has been necessary to cancel the meetings arranged for March 22 and May 3. *Hon. Secretary:* J. Henderson, Kinfauns, Brook Street, Great Bedwyn, near Marlborough, Wilts.

Pontypool.—Meetings of the group are held each week on Tuesday at the Educational Settlement, Rockhill Road, when Morse practice and theoretical instruction is given. The group has its own commercial equipment, a ZC1, which is operated on 160, 80 and 40 metres. All members in the area are warmly welcomed to meetings. The T.R. is J. S. Hammond (GW3JBH).

Romford and District Amateur Radio Society.—At the recent A.G.M. the following officers were elected. *Chairman*—R. F. Stevens (G2BVN); *Hon. Secretary*—F. Simmons (G2FWJ), 15 Globe Road, Romford; *Hon. Treasurer*—J. C. Perry (G3EBF). A programme of lectures and visits has been arranged and the society's station has been re-equipped for all band operation. Meetings are held on Tuesdays at 8.15 p.m., at RAFA House, Carlton Road, Romford. Visitors are welcome. Further information can be obtained from the Hon. Secretary.

Scarborough Amateur Radio Society.—The programme includes weekly Morse and technical classes for those taking the R.A.E. G5VO has presented a trophy to be won by the beginner in Morse who makes the best showing at the end of the winter session. A film show is planned for March 21; on March 28, F. Powell, an ardent shortwave listener with a surprising percentage of QSLs for his reports, will discuss " The QSL Position." A transmitting contest is to take place shortly between the society and the York Amateur Radio Society. 4S7AM was a recent visitor who hopes to receive his G call shortly. Members are hoping to work the society's Vice-President, Cliffe Metcalfe (G3DQ), who will be operating as VP6DQ during the next few weeks. *Hon. Secretary:* P. Briscombe (G8KU), Roseacre, Irton, near Scarborough.

Science Museum Radio Society.—This newly formed society which caters mainly for radio enthusiasts in the Civil Service has included in its recent programme lectures on sound reproduction, radio history, valve manufacture and oscilloscopes together with visits to television and radio studios. The next meeting at the Science Museum (on April 11, at 6 p.m.) will include a talk by Mr. Christian of the G.P.O. Engineering staff on " The Practical Approach to Transistors." Prospective members are asked to contact in the first instance the *Hon. Secretary:* G. C. Voller (G3JUL), KENsington 6371, Extension 237.

Scunthorpe Amateur Radio Society.—The following were elected at the A.G.M.: *Chairman*—T. J. Wright (G3HRP); *Hon. Treasurer*—I. W. Rhyder (G3JWR); *Hon. Secretary*—J. Stace (G3CCH), 38 Skippingdale Road, Scunthorpe. Recent events have included a lecture by Mullard Ltd. on the Manufacture of Cathode Ray Tubes illustrated with film. Lectures have been arranged to supplement beginners' studies for the R.A.E. Meetings are held fortnightly at the Talbot Hotel, Earl Street, Scunthorpe.

Stourbridge and District Amateur Radio Society.—Attendances have been good at recent meetings. In January, a sale of gear was highly successful, while in February, two films on Electronics were shown. Transmitting members hold a net on 1.8 Mc/s on Tuesday evenings. *Hon. Secretary:* A. K. Davies, 48 Church Avenue, Amblecote, Stourbridge.

Tees-side Amateur Radio Club.—The club meets on alternate Fridays at 132 Newport Road, Middlesbrough. Several visits are being arranged for the coming months. Visitors are always welcome. *Hon. Secretary:* B. B. Wilson (B.R.S.19449), 18 Holdenby Drive, Park End, Middlesbrough.

Torbay Amateur Radio Society.—At the meeting on March 16 at the Y.M.C.A., Torquay, John Hawke (G3FUT) will

give a talk on "Audio." On the same day local members of the R.S.G.B. will discuss final plans for N.F.D. *Hon. Secretary:* L. H. Webber (G3GDW), 43 Lime Tree Walk, Newton Abbot.

Warrington & District Amateur Radio Society.—At the A.G.M. in January, officers for 1957 were elected. Classes on radio fundamentals and Morse have been started. Forthcoming events include a Junk Sale and a talk on Communications Receivers. Meetings are held at the Royal Oak Hotel, Bridge Street, Warrington, at 7.30 p.m. on the first and third Thursdays in each month. *Hon. Secretary:* John Mather, 28 Chapel Road, Penketh, near Warrington.

Wirral Amateur Radio Society.—At the meeting on March 20 there will be a Junk Sale. The Annual Dinner will be held at the "Coach and Horses," Moreton, on April 12, and full information may be obtained from the Hon. Secretary. The society is anxious to recruit new members and is prepared to coach unlicensed enthusiasts for the R.A.E. and Morse test. *Hon. Secretary:* H. V. Young (G3LCI), 9 Eastcroft Road, Wallasey.

Worthing and District Amateur Radio Club.—The Annual Bucket and Spade Party will be held this year on July 14. Details of other meetings appear in *Forthcoming Events*.

Representation

THE following are additions to the list of County Representatives published in the December, 1956, issue:—

Region 6—Gloucestershire
E. A. Perkins (G3MA), 40 Calton Road, Gloucester.

Wiltshire
R. Reynolds (G3IDW), 136 Beech Avenue, Swindon.

Region 11—Flintshire
J. Thornton Lawrence (GW3JGA), Perranport, East Avenue, Bryn Newydd, Prestatyn.

Region 14—Ayr, Bute, Dumfries, Kirkcudbright & Wigtownsire
D. A. McQueen (GM3PW), 3 Ayr Road, Prestwick, Ayrshire.

* * *

The following are additions or alterations to the list of Town Representatives published in the December, 1955, issue:—

Region 1—Chesire
Stockport
D. J. Birch (G3AOO), 106 Nasmyth Street, Denton, Nr. Manchester.

Region 2—Yorkshire North
Middlesbrough
A. E. Moon (G3KBM), 28 Rockliffe Road, Linthorpe.

Region 5—Hertfordshire (outside London)
Stevenage & District
V. Cundall (G3FAU), 23 Shackledell, Stevenage.

Region 8—Kent (outside London)
Deal
G. E. Nobbs (G3KFR), 47 St. Martins Road.

Region 10—Glamorganshire
Cardiff
K. Porter (GW3KEN), 7 Tair Erw Road, Birchgrove.

Monmouthshire—Pontypool
J. S. Hammond (GW3JBH), 46 High Street, Abersychan.

Region 9—Devonshire
Exeter
J. D. Forward (G3HTA), 12 Clevedon Close, Pennsylvania.

Region 14—Ayrshire
J. Wilson (GM3KJF), 3 Whitehill Crescent, Annbank.

* * *

Vacancies

Messrs. D. Metcalfe (G3GHQ) and C. K. Lawson (G3JCL) have resigned as representatives for the towns of Portsmouth and Croydon. Nominations for their successors should be made in the prescribed form and sent to reach the General Secretary by not later than April 30, 1957.

Forthcoming Events

REGION 1

Bury (B.R.S.).—April 9, 8 p.m., George Hotel, Kay Gardens.

Chester (C. & D.A.R.S.).—Tuesdays, 7.45 p.m., Tarran Hut, Y.M.C.A.

Crosby. — Tuesdays, 8 p.m., over Gordon's Sweetshop, St. John's Road, Waterloo.

Isle of Man (I.o.M.A.R.S.).—March 20, April 3, 17, 7.30 p.m., Manor Guest House, 48 Victoria Road, Douglas.

Lancaster (L. & D.A.R.S.).—April 3, 7.30 p.m., George Hotel, Torrisholme.

Liverpool (L. & D.A.R.S.).—Tuesdays, 8 p.m., Room "G," Wavertree Community Centre, Penny Lane, Liverpool, 18.

Manchester (M. & D.R.S.).—April 1, 7.30 p.m., Brunswick Hotel.

Manchester (S.M.R.C.). — Fridays, 7.45 p.m., Ladybarn House, Mauldeth Road, Manchester, 20.

Preston (P.A.R.S.).—Wednesdays, 7.45 p.m., 48 High Street, off Lancaster Road.

Southport. — Thursdays, 8 p.m., Sea Cadets' Camp, Esplanade.

Stockport (S.R.S.).—March 27, April 10, 24, 8 p.m., The Blossoms Hotel, Buxton Road.

Warrington (W. & D.R.S.).—March 21, April 4, 18, 7.30 p.m., Royal Oak Hotel, Bridge Street.

Wirral (W.A.R.S.).—March 20, April 3, 17, 7.45 p.m., Y.M.C.A., Whetstone Lane, Birkenhead.

REGION 2

Barnsley (B. & D.A.R.C.).—March 22, April 12, King George Hotel, Peel Street.

Gateshead.—Mondays, 7.30 p.m., Mechanics' Institute, 7 Whitehall Road.

Hull.—Second and last Tuesdays each month, 7.30 p.m., "Royal Oak" (Tony's).

Leeds.—Wednesdays, 7.30 p.m., 4 Woodhouse Square.

Rotherham. — Wednesdays, 7 p.m., "Cutler's Arms," Westgate.

Scarborough. — Thursdays, 7.30 p.m., Chapman's Yard, North Street, Scarborough.

Slaithwaite.—Fridays, 7.30 p.m., 3 Dartmouth Street.

York. — Thursdays, 7.30 p.m., Club Rooms, Y.A.R.S., Fetter Lane.

REGION 3

Birmingham (South and Bournville).—Tuesdays, 7.30 p.m., No. 4 Committee Room, Cadbury Bros., Bournville. **(Slade).**—March 29, April 12, 7.45 p.m., Church House, High Street, Erdington.

Coventry. — Fourth Friday, 7.30 p.m., Vine Street Schools, Coventry. **(C.A.R.S.).**—March 25, April 8, 7.30 p.m., 9 Queens Road, Coventry. **(Courtaulds).**—Every Wednesday, Courtaulds, Ltd., Foleshill Road, Coventry.

Solihull.—March 18, April 1, April 15, 7.30 p.m., Civil Defence H.Q., Sutton Lodge, Blossomfield Road, Solihull.

Stourbridge & District.—March 22, 8 p.m., "White Horse," Amblecote. April 2, 8 p.m., King Edward VI School, Stourbridge.

Wolverhampton (W.A.R.S.).—March 25, April 8, 8 p.m., H.Q., Nechells Cottage, Stockwell Road, Tettenhall.

REGION 4

Alvaston. — Tuesdays, Thursdays, 7.30 p.m., Sundays, 10.30 a.m., Boulton Lane, Alvaston, Derbyshire.

Chesterfield.—Tuesdays, 7.30 p.m., Bradbury Hall, Chatsworth Road.

Derby (D. & D.A.R.S.). — Wednesdays, 7.30 p.m., Room 4, 119 Green Lane, Derby.

Ilkeston (I. & D.A.R.S.).—Thursdays, 7 p.m., Room 5, Ilkeston College of Further Education, Field Road.

Leicester (L.R.S.).—March 11, 25, April 8, 7.30 p.m., Leicester.

Lincoln (L.S.W.C.).—April 3, 7.30 p.m., Technical College, Cathedral Street.

Newark (N. & D.A.R.S.).—April 7, 7 p.m., Northgate House, Northgate, Newark.

Northampton (N.S.W.C.). — Fridays, 7 p.m., Clubroom, 8 Duke Street.

Nottingham.—March 15, April 19, 7.30 p.m., Basford Hall Miners' Welfare, Nuthall Road, Cinderhill.

Peterborough.—April 3, 7.30 p.m., 21 Hankey Street.

Scunthorpe (S.A.R.S.).—March 12, 26, April 9, 7.30 p.m., Talbot Hotel, Earl Street.

Retford & Worksop. — April 8, 7.45 p.m., Whitehall Youth Centre, Retford.

REGION 5

Chelmsford. — April 2, 7.30 p.m., Marconi College, Arbour Lane, Chelmsford.

Norwich. — Fridays, 7.30 p.m., The Golden Lion, St. John's, Maddermarket.

Grimsby (G.A.R.S.).—March 28, April 11, 7.30 p.m., The Abbey, Abbey Road West, Grimsby.

REGION 6

Cheltenham.—April 4, 8 p.m., Great Western Hotel, Clarence Street.

Cheltenham (A.R.S.). — Wednesdays, 8 p.m., Club Room, St. Mark's Community Centre, Brooklyn Road.

Gloucester (G.R.C.). — Thursdays, 7.30 p.m., The Cedars, 83 Hucclecote Road.

Oxford (O. & D.A.R.S.).—March 28, April 11, 7.30 p.m., Club Room, "Magdalen Arms," Iffley Road, Oxford.

Portsmouth. — Tuesdays, 7.30 p.m., British Legion Club, Queen's Crescent, Southsea.

Southampton. — April 6, 7 p.m., 1 Prospect Place, Above Bar, Southampton.

Stroud.—Wednesdays, 7.30 p.m., Subscription Rooms.

REGION 7

London Meeting.—March 29, 6.30 p.m., I.E.E., Savoy Place ("Mobile Operation," by F. W. Crabtree, G3BK, and R. G. Shears, G8KW).

Acton, Brentford and Chiswick.—March 19, April 19, 7.30 p.m., A.E.U. Rooms, 66 High Road, Chiswick, London, W.4.

Bexleyheath (N.K.R.S.).—March 28, April 11, 7.30 p.m., Congregational Hall, Chapel Road, Bexleyheath.

Chingford.—For date and venue phone: Wanstead 2321 or Silverthorne 1740.

Croydon (S.R.C.C.). — April 9, 7.30 p.m., "Blacksmiths' Arms," 1 South End, Croydon (A.G.M.).

Ealing.—Sundays, 11 a.m., ABC Restaurant, Ealing Broadway, W.5.

East Molesey (T.V.A.R.T.S.).—April 3, 8 p.m., Carnarvon Castle Hotel ("More about the Mini-Beam," G. E. Bird, G4ZU).

Guildford & Woking.—March 24, 3 p.m., Royal Arms Hotel, North Street, Guildford.

Holloway (G.R.S.). — Mondays (R.A.E.), Fridays, 7 p.m., Grafton School, Eburne Road, Holloway, N.7. March 15, "Decca Navigational Systems" (G3KIK), April 5, "Titivating up the Rig" (G3IIR).

Ilford.—Thursdays, 8 p.m., G2BRH, 579 High Road, Ilford.

London (L.M.L.C.).—March 15, April 19, 12.30 p.m., Bedford Corner Hotel, Bayley Street, Tottenham Court Road, W.C.1.

London (U.H.F. Group).—April 4, 7.30 p.m., Bedford Corner Hotel ("Overtone Crystals").

Norwood & South London (C.P. & D.R.C.).—March 16, 8 p.m. ("Mobile Communications," by Automobile Association). April 20, 8 p.m., Windermere House, Westow Street, Crystal Palace.

Southgate, Finchley & District.—April 11, 7.30 p.m., Arnos School, Wilmer Way, London, N.14.

Slough. — April 2, QTH from G2HOX, 13 Quaves Road, or G3GYD, 5 Parklands Avenue, Slough.

Welwyn Garden City.—April 2, Service Training School, Murphy Radio, Ltd., Bessemer Road, Welwyn Garden City ("Transistors," T. A. McMullin).

REGION 8

Worthing (W. & D.A.R.C.).—April 8, 8 p.m., Adult Education Centre, Worthing ("Brains Trust").

REGION 9

Bath.—March 18, April 15, 7.30 p.m., 12 Pierrepoint Street (top floor).

Bristol.—March 22, April 26, 7.15 p.m., Carwardine's Restaurant, Baldwin Street.

Exeter.—April 11, 7.30 p.m., G3HTA, 12 Clevedon Close, Pennsylvania, Exeter.

Falmouth.—Alternate Tuesdays, 7 p.m., Technical Institute, Falmouth.

Plymouth.—Alternate Tuesdays, 7.30 p.m., Virginia House Settlement, Barbican.

Torquay. — March 16, April 20, 7.30 p.m., Y.M.C.A., Castle Road.

Weston-super-Mare. — April 10, May 8, 7.30 p.m., QTH from G2FQP, 20 Swiss Road.

Yeovil.—Wednesdays, 7.30 p.m., Grove House, Preston Road, Yeovil.

REGION 10

Cardiff. — April 8, 7.30 p.m., "The British Volunteer," The Hayes, Cardiff.

Neath and Port Talbot.—April 2, 7.30 p.m., Royal Dock Hotel, Briton Ferry.

Pontypool. — Tuesdays, 7 p.m., Educational Settlement, Rockhill Road.

REGION 11

Prestatyn (F.R.S.).—Monday, April 1, 7.30 p.m., Railway Hotel (Junk Sale and Auction).

REGION 13

Edinburgh.—March 21, April 4, 18, 7.30 p.m., 25 Charlotte Square, Edinburgh.

REGION 14

Falkirk and Stirling.—March 15, April 12, 7.30 p.m., The Temperance Café, High Street, Falkirk.

Glasgow.—March 29, 7.15 p.m., Christian Institute, 70 Bothwell Street, Glasgow, C.2. (Recorded lecture by G5RV on "TVI-proof Transmitter Design.")

London Meeting

Friday, March 29, 1957

"MOBILE OPERATION"

by F. W. CRABTREE (G3BK)

and R. G. SHEARS (G8KW)

at the

Institution of Electrical Engineers, Savoy Place, Victoria Embankment

Buffet Tea 6 p.m. **Lecture 6.30 p.m.**

SWITCH TO SAFETY

For many years the slogan "Switch to Safety" has been used by A.R.R.L. to warn readers of QST that Amateur Radio equipment can be lethal. The slogan is repeated here with acknowledgements to the League.

Letters to the Editor . . .

Neither the Editor nor the Council of the Radio Society of Great Britain can accept responsibility for views expressed by correspondents.

British Empire Amateur Radio

DEAR SIR,—It became obvious during the recent B.E.R.U. Contest that many British Empire radio amateurs knew little or nothing about the activities of the R.S.G.B. since they were unaware that the contest was on until asked for a serial number.

Up to September, 1939, space was found in the Society's Journal each month for notes and news from the British Empire. These notes and items of news were contributed by appointed British Empire Radio Union Representatives in various parts of the Empire. The news reached R.S.G.B. Headquarters either by direct air mail or via one of the Society's Empire Link Stations.

To increase interest in the work of the R.S.G.B. throughout the British Empire, has not the time come to revive the Empire Notes and News feature, by appointing B.E.R.U. Representatives and inviting qualified home and overseas amateurs to undertake the duties of Empire Link Stations?

The views of other members will be read with interest.

Yours faithfully,

Kenton, Middlesex. ALEC R. GILDING (G3KSH).

B.E.R.U. Contests

DEAR SIR,—It is now twenty years ago since I first participated in the B.E.R.U. C.W. Contest and I have not missed one throughout that period. I maintain that forty-eight hours is too long a period to expect an amateur to operate continuously. I find it increasingly difficult each year to arrange my business affairs accordingly to allow me to enter.

May consideration be given by the Contest Committee to holding the Contest over two weekends? As a suggestion the first part of the Contest would run as follows:—

Saturday 0600—1800 G.M.T.
Sunday 0600—1800 G.M.T.

with the second part following the next weekend as follows:—

Saturday 0001—0600 G.M.T.
Saturday 1800—0600 G.M.T.
Sunday 1800—2359 G.M.T.

This would ensure that no operating period is longer than twelve hours and gives reasonable breaks in between.

The foregoing is only a suggestion for consideration. I should be interested to hear the views of other amateurs who also participate in this event.

Yours faithfully,

Petts Wood, Kent. S. L. HILL (G8KS).

N.F.D.—Not Dying!

DEAR SIR,—It appears that someone should say a word in defence of the users of 807s, T.T.11s, 6L6s, etc., as used by the *majority* of stations in N.F.D. if I read past accounts correctly, and I offer the following:—

1. It is not difficult to run an 807 at considerably less than 5 watts.
2. 807s, T.T.11s, etc. are cheap and plentiful.
3. Ten watts should show something "going up the spout."
4. I have been concerned with more than one Group in N.F.D., and have not known of the input being over 5 watts; in any case, how much must the input be raised to gain one "S" point?
5. What is this dying interest in N.F.D.? Except for 1956, and the BULLETIN difficulties early in the year, according to my records, the number of competing Groups remains pretty constant. Individual members often need some persuasion, but the whole event depends on team spirit and leadership of the T.R.s. A peep into the future regarding the weather might help—or would it?
6. The addition of "21" and "28" will certainly exercise our ingenuity, but we are not compelled to use these bands, which could be very fickle in early June.

I doubt if G3CGD's suggestion (February issue) really would "clear the air"; indeed, is there any air to be cleared? I would remind G3CGD, G4XC and others, that there are worse crimes than increasing power which could be committed by unscrupulous operators, and which would be an even bigger headache to T.R.s. This sort of thing in any case cannot give any personal satisfaction, and only lets the Group down.

Anyway, what is all the "blether" about? I suggest that we have read into J.H.'s *Current Comment* something that was not intended; let us get down to the preparations for a "bumper" N.F.D. With 6 bands, 10 watts, 4 aerials per station, and plenty of good spirits (GM friends please note !), there is every possibility of the best N.F.D. ever.

Yours faithfully,

Bath, Somerset. W. J. GREEN (G3FBA),
Region 9 Representative

NFD Rules

DEAR SIR,—I agree with Mr. Yeend (G3CGD) and make these suggestions.

1. That for an input of 10 watts the maximum h.t. voltage should be 300.
2. Maximum p.a. valve anode dissipation—12 watts; maximum anode dissipation for all other valves used—5 watts each.

The large anode dissipation relative to the input power would be a concession to those who would object to the range of p.a. valves being unduly limited. The 12 watt maximum includes all the popular small power types. The changes in most N.F.D. transmitters would not be great or expensive and the vast majority of entrants would be happier.

Yours faithfully,

Cardiff, South Wales. T. J. BROOKE (GW3GHC).

TVI—Fringe Areas

DEAR SIR,—I refer to *Current Comment*—"Video On" (February, 1957). All members in this district have yet to see an amateur transmitter (commercial or otherwise) that is TVI-proof on *all* bands. My QTH is approximately 70 miles from the Kirk o' Shotts TV station and I have no alternative but to "take it lying down." What does J.H. mean when he refers to "a reasonable middle course?" One is either TVI-proof or not. The fact is that the TV signal received here is poor and its vision frequency (Channel 3) is wide open to harmonic interference. Were the R.S.G.B. consulted regarding television channels or did they "take it lying down?"

I agree that large numbers of British amateurs abstain from transmitting during television hours through fear of causing interference. I do not, however, agree with the view that enough information has been published to allow *any* member to render his station TVI-proof.

It is quite evident that the R.S.G.B. Council are perturbed but have they any idea of the number of members who are obliged to keep off the air during TV hours? I would suggest that a questionnaire be put out. What do my fellow members think?

Yours faithfully,

Tweedmouth, Berwick-on-Tweed. STAN. BRIGHAM (G2FXB).

Support for a Novice Licence

DEAR SIR,—I would like to support the suggestion put forward by Mr. Ward (G4JJ) in the February BULLETIN concerning the issue of a novice licence for work on the v.h.f. bands.

Not only would such a licence assist people like myself who cannot get over that 8 w.p.m. receiving "hump" but it would help further to develop the v.h.f.s.

Many people I know are giving up radio experimenting and going over to normal constructing because they cannot transmit.

With the backing of the R.S.G.B. I believe the novice licence could be achieved.

I was very glad to see that a licensed amateur had put forward the suggestion and I should like to thank him for it.

Yours faithfully,

St. Leonards-on-Sea. D. V. PAYNE (B.R.S.21230).

The Treatment of Electric Shock

DEAR SIR,—I feel that I must comment on the article by Dr. A. C. Gee in the January BULLETIN entitled *The Treatment of Electric Shock*. Whilst being a layman in matters medical (that is not being a doctor) there are some points that I think need some comment. Firstly, why was no reference made to one of the most serious effects of electric shock, namely, burns? Surely a detailed treatment of burns would have been quite timely. The other point that I must mention is the treatment of a patient who has ceased to breathe. This has caused me to shudder when I think of the effect on the poor patient's ribs. The method suggested is not in keeping with any teaching methods used by either the St. John Ambulance Brigade, or the British Red Cross Society, with whom the R.A.E.N. members are closely associated.

I would refer readers to page 65 of *QST* for July 1956 where a lucid explanation of the Holger Nielson method of Artificial Respiration is given. Why, oh why, do we always get a clearer explanation from our American colleagues?

As a member of the St. John Ambulance Brigade, may I suggest that you ask Brigade Headquarters for permission to reprint the relevant section of their textbook for the benefit of the members of the R.S.G.B.?

In conclusion, I would strongly recommend any of our members who are interested to contact their local S.J.A.B. or B.R.C.S. Headquarters for instruction in the correct method of treatment of a person suffering from electric shock.

Yours faithfully,

London, S.W.17. ALAN R. DYER (G3IDF).

(Dr. A. C. Gee was invited to reply to Mr. Dyer's letter. His comments appear below—EDITOR.)

DEAR SIR,—As a member of St. John Ambulance Brigade, Mr. Dyer will, I'm sure, agree that in giving first aid instruction to those completely untrained in medical matters, simplicity should be the keynote. In endeavouring to do this in my article, I also had in mind that the most likely person who may be called upon to carry out the instructions given would be the XYL or other relative in the household.

On more careful reflection, I think Mr. Dyer will also agree that the BULLETIN is hardly the place for detail information regarding the treatment of burns!

If readers—and their household colleagues—will acquaint themselves with the simple measures indicated in my article, they may one day be able to save a life whilst everyone else has gone off to find somebody with Mr. Dyer's expert knowledge.

Yours faithfully,

ARTHUR C. GEE (G2UK).

Touching Upon Four Subjects

DEAR SIR,—I would like to touch upon four subjects, three of which have already been mentioned in recent issues of the BULLETIN.

1. In the January issue Mr. Pilkington (G3IAG) suggested that a Code Proficiency service should be started. I would remind readers that the Dutch Society (V.E.R.O.N.) already organizes such a service. Runs take place at 0900 G.M.T. on the last Sunday of each month and the texts are in plain English at 15/20/25/30/35 w.p.m. on 3505 kc/s. Copy, together with three I.R.C's and a signed statement to the effect that it was copied without mechanical aid, should be sent to M. Smit (PA0AA), Traffic Manager, V.E.R.O.N., Stationsweg 70, Velsen Zuid, Holland. An attractive certificate is issued if the copy is found to be correct. Readers who already hold a 30 w.p.m. certificate will note that there is now a 35 w.p.m. run.

2. Having recently been involved both in correspondence and QSO concerning the Region I Band Plan, I suggest it is time the Society repeated the full details since some newly licensed amateurs are under the impression that the Plan is yet to be put into operation!

Would it not be advisable to alter the Plan regarding 7 Mc/s since I believe all c.w. operators would agree that it is not fair to allow c.w. over the whole band? For myself I never use c.w. above 7050 kc/s and I do not think many other U.K. (c.w.) amateurs do either. (*The Region I Band Plan is reproduced on another page of this issue*—EDITOR.)

3. I wish to associate myself with the suggestion put forward by Mr. Ward (G4JJ) in the February BULLETIN, that a Novice licence should be made available. A restricted licence (say 50 watts, phone only, and two v.h.f. bands) should suit many of those who have more interest in technical matters than in manipulating a Morse key. If they should later desire full facilities it would not be too much to ask that proficiency in Morse be a criterion.

4. I agree with Mr. Ingram (GM6IZ) about block nominations for the Council.

It would be interesting to know the total votes cast, since I could find no mention of that figure this year. Last year it was around 1,500 which is very low for a 7,500 membership.

Yours faithfully,

Meliden, Flints. J. PHILIP EVANS (GW8WJ).

Editorial Note.—At the last Election of Council Members 1,547 Ballot papers were accepted and 11 rejected, compared with 1,431 accepted and 14 rejected at the previous election.

Council Elections

DEAR SIR,—It has always seemed to me that nomination of retiring Members of the Council by the Council is invidiously undemocratic and entirely contrary to the Ham Spirit. If Parliament were to nominate candidates for election to Parliament, the Press would undoubtedly raise the cry "Totalitarianism." After all, World War II in which many members took part and many, unfortunately, died, was fought to prevent the spread of this doctrine.

While on the subject of elections, it would not be out of place to enquire when last a YL was nominated and elected, if ever. It is also interesting to note that to my recollection no non-transmitting member has ever been nominated, despite the fact that the non-transmitting members apparently have the greater voting power.

Finally it is suggested that the biographical notes about candidates appended to the voting paper should cease to be stereotyped but in preference should be autobiographical thus enabling electors to form a better opinion of the suitability of a candidate.

Yours faithfully,

Great Bedwyn, Marlborough. H. J. FENN (B.R.S.2515).

Editorial Note.—No lady member has ever been nominated to serve on the Council. Lady members have served as TRs. B.R.S. members have served on the Council.

LU Stations in Antarctica

DEAR SIR,—For several years now the Society's QSL Bureau has declined to handle cards from LU stations located at meteorological stations in Antarctica. Contacts with these stations are accepted by the A.R.R.L. for DXCC purposes, as are indeed contacts made with amateur stations of many nationalities at present located in Antarctica in connection with the I.G.Y. The Soviet stations, for example, are licensed by their own authorities at home and not by the administrators of the territory where they are located. In this case they are, according to R.S.G.B. ethics, unlicensed stations, and their QSLs should not be handled. By the same reasoning QSLs in respect of QSOs with the three spurious MD5 stations which operated from Port Said recently must also be taboo.

I feel sure that cards are being handled from unlicensed stations, and that the decision to outlaw cards from certain LU/Antarctica stations shows prejudice. What is good for the goose, is surely good for the gander?

It is to be hoped that the Society will, in future, show a more reasonable and tolerant attitude towards this aspect of Amateur Radio.

Yours faithfully,

St. Leonards-on-Sea. JOHN D. HEYS (G3BDQ).

Second 1956 Top Band Contest

DEAR SIR,—A probable reason why many north country stations were absent from the Top Band Contest last November was that the following day the Liverpool O.R.M. attracted about 120 local members.

Staying up all night could prevent one doing justice to Liverpool's ale. After all, Sir, first things first.

Yours faithfully,

Tottington, Lancs. JOHN E. HODGKINS (G3EJF).

New Members

THE following were elected to Membership at the February, 1957, Meeting of the Council:—

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G3LJM M. E. FRANCIS, 2 Berwick Avenue, Chelmsford, Essex.
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G3LKW D. C. WILTSHIRE, 15 Lynfield Park, Weston, Bath, Somerset.
G3LKZ O. JACKSON, "West Witton," Whitburn Road, Cleadon, Sunderland, Co. Durham.
G3LLI *R. M. CHESSHER, 47 Cauldwell Villas, South Shields, Co. Durham.
G3LMJ C. CLANCEY, 1 Court Farm Road, Mottingham, London, S.E.9.
G3LMT *A. D. TREGALE, 41 Normandy Road, Heavitree, Exeter.
G3LNS G. BEASLEY, 219 Moseley Road, Highgate, Birmingham, 12.
G3LNU R. D. GIBSON, 24 Middlewick Road, Holmes Chapel, Cheshire.
G3LOP H. O. GILLATT, 24 Station Road, Healing, Grimsby, Lincs.
G6AU †C. C. ALGAR, 197 Ramsgreave Drive, Blackburn, Lancs.
G6MT †D. L. MARTIN, 6 Paget Road, Alverstoke, Hants.
G8TT †G. A. WOODS, 5 Wheatlands Road East, Harrogate, Yorks.
GW2FYM D. DAVIES, "Isgryn," Betws-y-coed, Caerns.
GW3LFM M. F. TAYLOR, 20 North Drive, Rhyl, Flintshire.
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CLASS "D" wavemeter a.c., £5.10. 3" oscilloscope, £8.10. R1155 modified, £6. 12V vibrator power pack, £1. Hugh, Hickmans Close, Lindfield, Sussex. (263

CNY 1 original, complete remote control; top, eighty, forty c.w./phone fixed mobile, £14. G6OO, 41 Millview Road, Ruskington, Sleaford, Lincs. (273

COMING home in March pro-tem, My call was Vee Pee Six Ay Emm, Looking for ham gear to buy, Ere I leave again July. Bad manners always make me burn, I'll answer letters by return. c/o Myers, 30 Weghill Road, Preston, Hull, Yorks. (249

COMPLETE B2 station for sale. Receiver, transmitter, power pack, coils, two crystals, complete set spare valves, manual. Packed in two metal cases. £17 or best offer. G4AH, 160 Cat Hill, East Barnet. Barnet 4272. (269

DST 100 Mk. II double superhet 50 kc/s to 30 Mc/s, excellent condition, any trial, £12. ZC1 Mk II mobile transmitter/receiver, £4.10. R1392 2-metre receiver 15-valve superhet, £5. Sturdy, 21 Lingwood Gardens, Osterley, Middx. (262

FOR SALE G.E.C. 7B v.h.f. transmitter including Modulator, power pack, complete in good condition, £10. Large quantity new and used components, coils, chokes, transformers, condensers, m.c. meters, valves (100), bases, speaker, and S.L.C. receiver chassis, £9. Buyer collect. BRS12108, 52 Rutherford Way, Bushey Heath, Herts. (275

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HRO 4 Bandspread coils, speaker, pack and manual, offers: Thornton Heath 4370. (276

HT-11B marine radiophone by Hallicrafters, tuneable receiver 1.5—3 Mc/s, 807 p.a., internal speaker, handset, 12V power unit with dynamotor and vibrapack, £12 plus carriage. BC641 portable audio amplifier, 15/-. BC348 dynamotor. 12/6. Wireless set type "A" Mk I (suitcase) mains power unit, mint condition, 30/-. T.C.S. modulator transformer, microphone transformer, microphone. SCR522 modulator transformer, 7/6 each. BC221 stowage bag BG108, 12/6. TBY-8 stowage bag, 7/6. BC728 push-button receiver manual, 5/-. 813, £1; 3A5, 7/6. Crystal 3.5 Mc/s octal base (Command transmitter type), 12/6. U.S.N. RBZ receiver spares, all types. Wanted: valve 2E26, American test-set I-135. G3IEE, 96 Latchmere Road, Kingston-on-Thames. (271

HALLICRAFTERS S52, £20. HRO RBJ4 p.p. 9-coils, £22.10.0. 1155B p.p., £6.10.0. Trophy 6, £5. Transmitter 5-band, 813, 150W TZ40 modulator v.f.o., all power supplies, rack, £25. S.640 (unmodified) meter, pre-amplifier, £16. R208 slight attention, £7. Class D Meter (as new), £5. Miscellaneous equipment: quantity transmitter/receiver valves and components; stamp for list to:—27 Lowerwear Road, Exeter. (272

I-G-Y "Communicators" now available for 70 Mc/s. We will modify to 144 later. See October BULLETIN or send s.a.e. for details. H.P. terms. R.E.E. Telecommunications, Greenham Mills Works, Crewkerne, Somerset. (267

J. R. E. DRAPER & CO. are instructed to sell by auction at the White House, Hainford, Norwich, Norfolk, on Thursday, March 28, 1957, at 12 noon: valuable wireless equipment and effects including: T1131 V.H.F. transmitter c.w., coaxial cable and spare power packs: receiver in separate rack with power unit and crystal monitor. Damaged 1143 transmitter with rectifier 5197A. Rack with speaker and 5.27 V.H.F. receiver. Spare rack. Frequency meter BC221/T complete with power unit. Two 1155 receivers. Spares for AR77E. Televet type 877. Marconi signal generator TF144/9. Output meter type TF340: AR88 receiver, damaged. Two 79 ft tubular galvanised steel masts by Poles Ltd. Service manuals. Amateur G3AEB going overseas. Further particulars of the Auctioneers, Wroxham, Norfolk (Telephone 35). (278

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