

The

RADIO AMATEUR

Incorporating "SHORT WAVE NEWS"

Vol. 8
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1953

FOR TRANSMITTERS AND LISTENERS



IN THIS ISSUE . . .

I.A.R.U. CONGRESS, LAUSANNE, FULL REPORT
Crystal Filter for 1155. Explaining the Decibel. The
World on the Air—Panama. Around the Shacks. Aerial
Patterns—Folded Quarter Wave. Talks about VHF.
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OUR FRONT COVER

The Jungfrau, Mönch and Eiger peaks—
typical of the scenery which delegates to
the IARU Congress enjoyed. Due to the
difficult terrain in Switzerland, micro-wave
telephone circuits are widely used from
mountain top to mountain top. One such
multichannel relay station is located on
the Jungfrau.



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EDITORIAL

The International Amateur Radio Union was founded in 1925 when representatives from radio societies from all over the world met in Paris, to discuss topics of mutual interest associated with our hobby.

In 1947, the Atlantic City Conference, divided the world into three regions for both administrative and technical purposes to ease the difficulties of controlling radio activities throughout the world.

This lead was adopted by the IARU Congress in 1950 and a Region 1 Bureau was formed to look after the interests of amateur radio in the countries forming Region 1.

It will be remembered that the RSGB was entrusted with the formation of this Bureau and Mr. Arthur Milne, G2MI was appointed as Hon. Secretary. It was also agreed that meetings of representatives from the societies in Region 1 should be held every three years in future to discuss matters of current interest. The first of these meetings will be held this year in Lausanne, Switzerland from May 13th to 17th, inclusive.

Our national society, the RSGB will be represented by Mr. John Clarricoats, G6CL, the General Secretary and by Mr. R. H. Hammans, G2IG, who is Vice-Chairman of the

RSGB Technical Committee. The general arrangements for the Congress are being made by USKA, and in addition to the business

meetings, various social activities have been arranged, such as a Ham-fest, an exhibition of amateur radio equipment and visits to places of interest.

A very full agenda has been drawn up for the Congress. Amongst topics for discussion are : the best methods of retain-

ing the amateur bands and the problems of "shared bands", the question of unauthorised non-amateur stations ; a review of the Region 1 Band Plan ; Emergency Amateur Radio Communication Schemes ; Region 1 Contests ; a proposed Region 1 Field Day ; International Portable operation ; Amateur Radio Camps ; a common Phonetic Alphabet ; operating standards ; TVI Problems ; Amateur Television ; VHF Propagation ; Licence conditions and a proposal to apply to the Universal Postal Union for recognition of QSL Cards for bulk posting at " Commercial Paper Rate."

Quite a programme ! Your editor is attending this Congress as an observer, and we hope that we shall be able to include at least a summary of the deliberations elsewhere in this issue. A.C.G.

E I I R

The Editor and Staff of *The Radio Amateur* tender their loyal greetings to Her Majesty Queen Elizabeth II on the occasion of her coronation.

GOD SAVE THE QUEEN

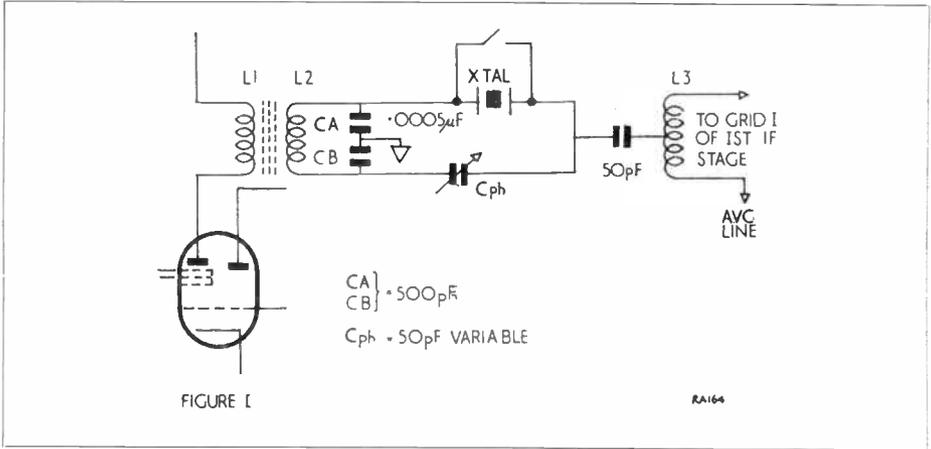
A CRYSTAL FILTER FOR THE R1155

by

Wm. A. HOPE, Stud.I.E.T.

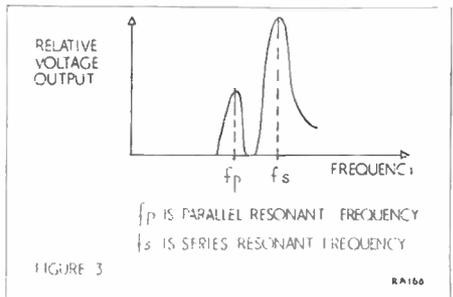
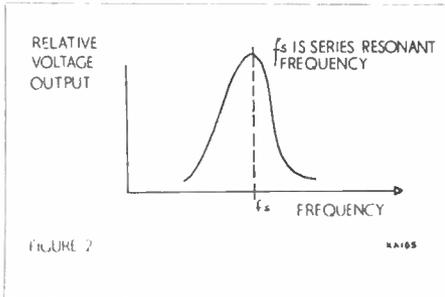
In response to various requests the author has included this short article describing the inclusion of a typical crystal filter unit in the R1155 set.

The "bridge" network is completed by the 560 kcs crystal and its associated phasing condenser cph which is a 50 pF variable trimmer. In practice the value of the phasing



The "Q" of the typical crystal filter is extremely high compared with the "Q" of the average LC circuit. The "Q" of the average 560 kcs IF transformer in the "1155" is in the region of 250-350, while a quartz crystal resonating on 560 kcs may have a "Q" of over 20,000 or so; thus a high degree of IF selectivity is obtained by the inclusion of a filter. Reference to Fig. 1 shows the 560 kcs crystal connected in a typical 560 kcs mixer section, say, it will be apparent that the secondary of the IF transformer is balanced, with respect to earth, by two 500 pF condensers.

The desired frequency is fed through the 50 pF coupling condenser to the centre tap of L3. L3 acts as an auto-transformer and steps up the signal in the ratio 2-1. The phasing condenser, besides cancelling out the crystal/



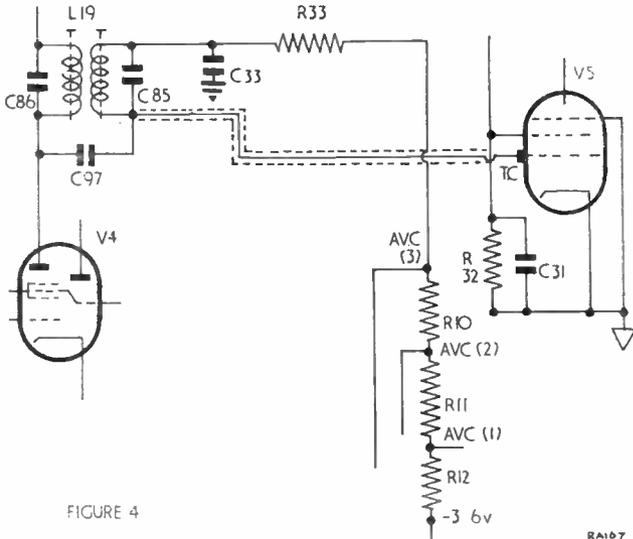


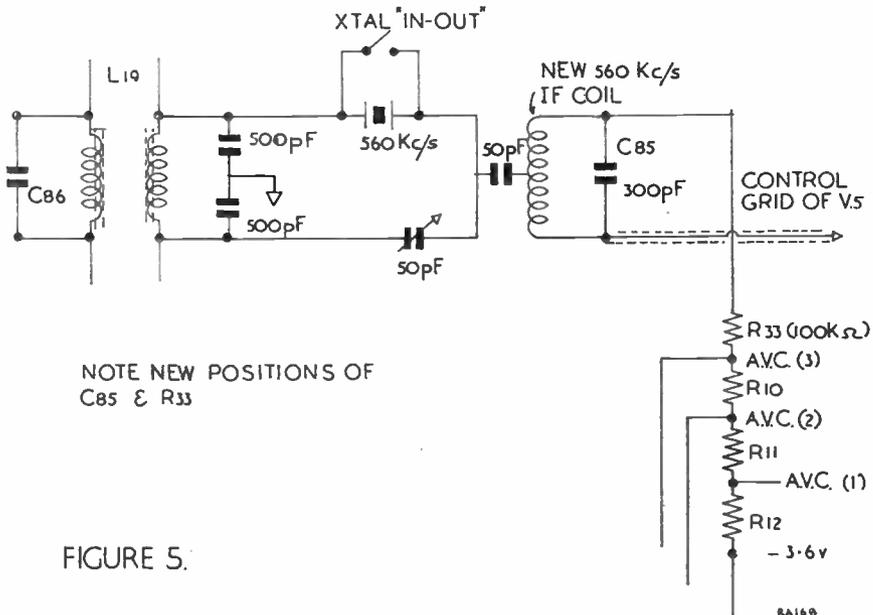
FIGURE 4

RA167

holder capacity, also has a different job to do !! The holder capacity, being a component of the IF crystal filter unit causes it to act as a parallel-resonant circuit at a frequency slightly greater than its series-resonant frequency, thus preventing signals at the parallel-resonant frequency from reaching

L3. The variation of cph allows the parallel resonant frequency to be moved considerably, thus providing rejection of unwanted signals. See Figs. 2 and 3.

Before starting on the modification (to be explained) remember the IF crystal must be (Contd. on p. 238)



NOTE NEW POSITIONS OF C85 & R33

FIGURE 5.

RA168

EXPLAINING the DECIBEL

One has not to venture far into the world of radio before encountering the word decibel, usually, for the sake of convenience, notated in the form of db. We may be studying the maker's performance data of an audio amplifier, for instance, and observe something after this style : frequency response—50 to 15,000 cps \pm 2 db. Although we know that this is obviously intended to convey a mental picture of the frequency response curve of the amplifier, the factor \pm 2 db may create a certain amount of uncertainty and flurry in the mind of the constructor and experimenter. To clear the air a little, then let us first of all see why the decibel can be so conveniently used in radio calculations.

Reference Level

But before we progress any farther we must remember one very important point, and that is, since the decibel is a unit of comparison some definite reference level must first be known. It is absolutely pointless to say, for instance, that an amplifier has an output of so many decibels—such a statement is illogical no matter who utters it.

The decibel was first introduced in America, and primarily devised for telephone engineering to assist in computing for loss in telephone cables, or gain of repeater stations. When the decibel is used for these purposes it is fairly straightforward to employ a standard level of reference, for the measurement of input

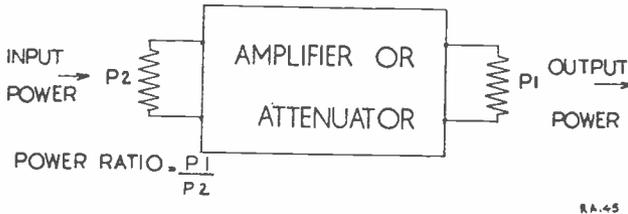


Fig. 1.

Illustrating the principle of Decibel Notation : Where to determine the output of an amplifier in Decibels, P_1 corresponds to the arbitrary level of zero DB. or 6 milliwatts, and Decibels = $10 \log_{10} P_1/P_2$.

Power Comparison

The normal application of decibels is to indicate a change of power. If, for example, we have an amplifier or radio receiver delivering, say, one watt into a loud-speaker, and then we suddenly turn up the output to two watts, or in other words we double the power output, our ears would discern only a very slight increase in volume. This extraordinary occurrence is because our impression of a sound is proportional to the logarithm of the sound's magnitude. And this makes it necessary for the power output to be increased by a ratio of 10 (common logarithm) before we would say that it had been doubled.

For this purpose, therefore, it is extremely convenient if we use a method of comparing power on a logarithmic basis ; which is essentially the function of the decibel—a unit employed for the comparison of power. We are using it every day in our radio work to compare the input power to the output power, so that we can say that a particular piece of equipment has a gain—or loss—of so many decibels.

and output power is across a fixed impedance.

In radio work, however, a fixed level of reference has not yet been universally adopted, although in many learned quarters six milliwatts is assumed as an arbitrary level for zero decibels. This makes it necessary, therefore, for us to employ plus or minus prefixes to indicate quantity direction.

With this in mind, we can use the following equation to convert a power ratio into decibels: Decibels equal $10 \log_{10} P_1/P_2$ - - - - (1) Where P_2 and P_1 indicates the input power (or reference level) and output power respectively, see Fig. 1. P_1/P_2 is frequently known as the power ratio, which, when multiplied by 10 times its common log. (to the base of 10) supplies us with the answer.

To make this a little clearer, let us suppose that we have an amplifier capable of producing an output of three watts for an input of six milliwatts. The power ratio will, therefore, be $3/0.006$, or 500 ; the common log. of 500 is 2.69, which when multiplied by 10, resolves as plus 26.9 db. We are quite correct in saying, in this case, that the output of our amplifier is

26.9 db, relative to six milliwatts—how important, then, for us to quote a reference level!

Voltage and Current Ratios

Although the decibel is essentially a unit of power ratio, in radio work a decibel notation is frequently given to voltage ratios. How this is possible is made clear by considering the unit of power—the watt (W), which is equal to the voltage across a resistor times the current through it (W equals $E \times I$); or to the square of the voltage across it divided by its ohmic value (W equals E^2/R). Now, we have seen from equation (1) that we are interested solely in the power ratio ($P1/P2$), but—and this is important—provided the input and output impedances are equal we can say that $P1/P2$ equals $E1^2/E2^2$, where $E1$ and $E2$ are the voltages appearing across the output and input impedances respectively.

In this case, then, we can compute the decibel notation of the voltage ratio as follows: Decibels equal $20 \log_{10} E1^2/E2^2$, which equals $20 \log_{10} E1/E2$ - - - - (2). In practice the functional unit is more frequently the millivolt or perhaps the microvolt. As an example, let us suppose that we have an RF amplifier, into which it is necessary to inject a 10 microvolt signal in order to obtain a 100 microvolt output. Our amplifier, then, possesses a voltage amplification ratio of 10:1, which computed in decibels represents a gain of 20 db, or sometimes expressed as plus 20 db.

Now let us consider a constant impedance attenuator, through which an input voltage of 100 microvolts is reduced to 10 microvolts—a voltage ratio of 0.1:1 (10/100:1). The common log of 0.1 is, of course, minus 1, and multiplying this by 20, as in equation (2), resolves as minus 20 db, or the attenuator creates a loss of 20 db—how easy, then, whether computing loss or gain, this method of notation can be.

The same reasoning applies for current ratios; for the power dissipated in a resistance is also proportional to the square of the current through it, this is, again, assuming that both impedances are equal in value.

Unequal Impedances

Circuits where the input and output impedances are not equal necessitates the use of a rather more involved formula. To illustrate this point let us imagine an audio amplifier, which has a high impedance input, say, 1 megohm, and a low output speech coil impedance of 1 ohm. With a device such as this we might well need to apply an input of 1 volt to obtain an output, across the speech coil, also of 1 volt, but by using equation (2) we shall surprisingly discover that the amplifier has a gain of precisely zero db—not really surprising for the voltage ratio of the amplifier is zero to start with! To get the correct answer we must take into consideration, and include in our formula, the unequal impedance factor.

This is catered for in the following equation by the addition of the factor, $10 \log_{10} Z1/Z2$, where the terms $Z1$ and $Z2$ are the input and output impedances respectively.

Decibels equal $20 \log_{10} E1/E2 + 10 \log_{10} Z1/Z2$ - - - - (3). Now, if we refer back to our hypothetical amplifier, and include the impedance term, we shall find, however, that the true power gain is 60 db.

There are conditions, of course, in AC circuits, when the impedance power-factors are not zero—they may, for instance, contain either a capacitive or inductive element. In order to correct the decibel formula for this use it is necessary to add a further factor in the form of $10 \log_{10} k1/k2$, where $k1$ and $k2$ are the corresponding power factors of the impedances involved. This brings the equation to its most complex state, where:—

Decibels equal $20 \log_{10} E1/E2 + 10 \log_{10} Z1/Z2 + 10 \log_{10} k1/k2$ - - - - (4).

The Case for the Decibel

The constructor or experimenter may, quite rightly, point out that power or voltage ratios could be used for comparing network gains and losses, so why go to all the trouble of converting them to the form of decibels. This reasoning might well apply if our work involved considering the gain or loss of a single unit. Say a coupling network, for example, which has an attenuation factor of 10:1, we know, in this case, that an input of 10 volts will be reduced to 1 volt across the output. But next to this coupling we may have an amplifier producing a gain of 15:1; and then another coupling showing a loss, and so on. To compute the total gain or loss, particularly if this varies with frequency, would be no simple matter, but by the use of decibel notation the work is simplified and comparisons made much easier.

The audio amplifier block diagram suitably illustrates this point, see Fig. 2. By the voltage ratio method we could measure the pick-up voltage at a certain frequency, and then the voltage at the output of the pick-up equaliser circuit, thereby resolving the network loss. By the same process we could compute the gain of the pre-amplifier, and so on through the entire circuit, which would make it somewhat difficult to arrive at an overall ratio.

With the decibel system, however, it is necessary only to add the various network gains and losses to arrive at an overall gain in decibels. In the amplifier in question, this works out to plus 60 db.

Practical Illustrations

If we were to measure the individual amplification of the stages of Fig. 2, we would find that they vary differently with frequency. One stage, for instance, may evince an excessive falling off of the high frequency response, while another stage may counteract this by introducing a corresponding high frequency peak, and so it goes on throughout the entire

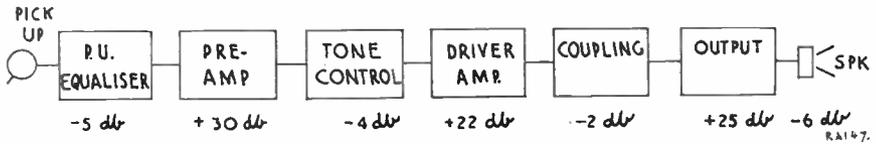


Fig. 2. Showing the various network gains and losses of an audio amplifier. The total gain in Decibels being the sum of the gains and losses, or 60 db.

chain, resulting in the desired overall response, or one which may be altered within a fixed limit by virtue of the tone control stage.

This variation of amplification with frequency is often expressed in decibels referred to some arbitrary level taken as zero db. The curve of Fig. 3 illustrates a typical response of an audio amplifier using this mode of representation. The decibel scale may be drawn with its zero line at any convenient point, provided the chosen level is indicated, just as we may feel inclined to put it in our calculations. With this in mind, then, we can examine the curve of Fig. 3, and say that the frequency response of the amplifier extends from 100 to 10,000 cps ± 2 db, and thus, very little power difference will be discerned over the complete spectrum (excluding the non-linear frequency response of the ear)—indeed, a variation of 2 db at a constant frequency is barely perceptible to the ear.

If, by adding an extra stage, say, a pre-amplifier for a tape recording play-back amplifier, we increase the overall output voltage by 10 times, the gain of the output power is 10^2 , or 100 times, and this power ratio, when converted to decimals, represents a power gain of 20 db. Thus, it can be seen that anything which modifies amplification can have its effect expressed in terms of decibels, making it very convenient for the experimentalist to assess the merits or demerits of individual units, which need to be compared or modified for overall working.

Manufactures of high quality microphones often advertise the characteristics of their instruments thus:— output for normal speech minus 60 db below 1 volt. Clearly, then, the reference level in this case is given as 1 volt; so to find the actual microphone output voltage it is necessary for us to twist equation (2) around a little so:— decibels equal $20 \log_{10} E1/E2$, therefore, - - - minus 60 equals $20 \log_{10} E1/1$ (where E1 is the unknown output voltage), thus, E1 equals antilog minus 3 or 1/antilog 3, which works out to show that E1 (or the output of the microphone) equals 0.001 volt.

Sometimes the reference level is expressed in milliwatts, and as previously intimated, 6 milliwatts is the more common figure used, which should always be considered when no other figure is quoted. An output transformer, for instance, may be rated at plus 36 db, which simply means that the transformer is capable of handling an output power that is 36 db above 6 milliwatts, or 24 watts.

Volume Units

Because a standard reference level has not yet been universally adopted, confusion frequently arises over the use of decibel ratings for indicating power, particularly if no specific reference level is quoted. In order to acquire a certain amount of order in this respect a rating known as volume units (VU) has been devised, which, although being

(Contd. on p. 218)

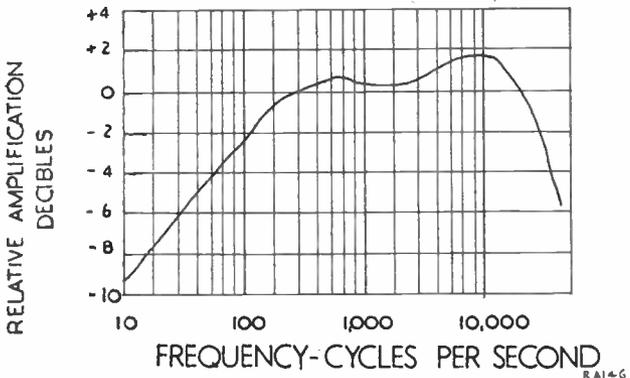
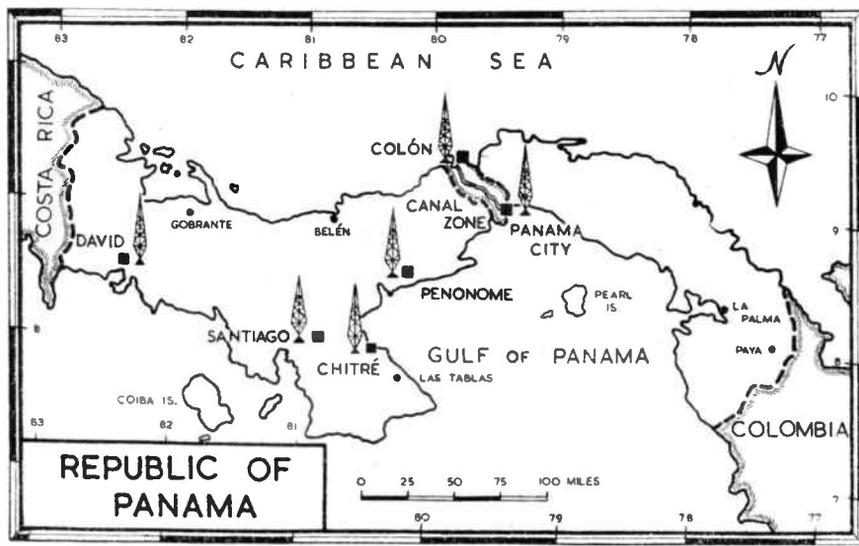


Fig. 3. Illustrating how relative gain may be expressed in Decibels.

THE WORLD ON THE AIR

The first of a new serial by JACK FAIRS

No. 1. The Republic of Panama



The Republic of Panama was formerly a department of Colombia, but seceded in 1903 owing to the Colombian government's refusal to ratify the treaty for the construction of the famous Panama Canal. Its independence was recognised by Colombia in 1914 however, and in 1924 diplomatic relations between the two countries were established. The boundary with Costa Rica was in dispute for many years, a revised frontier agreement being formed as recently as 1942. Panama is a member of the U.N. and of the Pan-American Union; a new constitution came into being in 1946.

The republic occupies the Isthmus of Panama, that narrow neck of land that connects two continents, and which averages 70 miles across but only 32 miles at its narrowest point. It is mountainous country, with damp tropical forest on the Atlantic side, and dry plains on the Pacific side; quite a considerable area is unoccupied, but the soil is mainly fertile, producing fruit, rubber, timber, coffee, sugar, coconuts and cocoa, while bananas and hides make up a large proportion of the export trade.

Besides the Panama Railroad, which is within the Canal Zone and therefore owned by the United States Government, there are several other small railways, but these are mostly plantation lines. Commercial aviation,

however, has made great strides during the past 20 years or so, and there are regular and efficient services to all countries of both American continents, plus an excellent internal system.

The Canal, as every schoolboy knows, connects the Caribbean with the Pacific, and has a total length of almost 51 miles; it was informally opened to commerce in August, 1914. The initial attempt, began in 1881, to make a canal by Ferdinand de Lesseps, constructor of the Suez, was a failure, owing to financial trouble and unhealthy conditions. Labour was another great problem, both French negroes and Indians being lazy and practically useless in such a climate. Jamaican negroes, however, were found to be much better workers and they were immune from yellow fever; even so, de Lessops failed to assess the dangers and difficulties, and work was dropped after a struggle of seven years.

In the United States, President Theodore Roosevelt had realised the need for such a waterway during the Spanish War, when there had been great delay in bringing the U.S. battleship *Oregon* from the Pacific coast of America to the Atlantic. The idea of a canal route through Nicaragua was developed, this being extremely unfavourable to the French, and it was not until 1902 that the former

chief engineer, M. Bunau-Varilla, persuaded the Americans that the abandoned Panama project was the better of the two.

In May of that year a violent volcanic eruption had occurred on the island of Martinique, and by coincidence, the postage stamps of Nicaragua were depicting the erupting of their own volcano, Momo-Tombo. On June 16th, Bunau-Varilla sent one of these Nicaraguan stamps to each member of the American Senate, as "official witness of volcanic activity in Nicaragua"; America decided on the Panama route 10 days later. In 1904 they purchased the rights and property of the New Panama Company, and obtained from the Republic of Panama a strip of land on either side of the proposed waterway. Once again work was commenced, this time by a labour force of some 45,000, the core of which consisted of Jamaican negroes who increased their previous output with renewed zest. The American strip of land, the Canal Zone, consists of five miles on either bank of the Canal, and the United States has exclusive control for police, judicial and other purposes. The total cost to the U.S. was over 373 million dollars.

From the Short Wave listener's point of view, the majority of the broadcasting stations in the republic are concentrated in the capital, Panama City. It adjoins the American town of Ancon at the head of the Gulf of Panama, three miles from the Pacific end of the Canal, and is virtually surrounded by the Canal Zone. It stands on a rocky peninsula with palm-shaded beaches, and has, it is said, an agreeable climate. The beautiful cathedral is surmounted by twin towers adorned with mother-of-pearl, the Church of San Jose is famous for its golden altar, while the National Theatre is one of the finest of its kind. The old city was settled in 1519, being the oldest settlement of the continental western hemisphere. Its port is Balboa, where ships of every nation call.

At the Atlantic end of the Canal, and northern terminus of the Panama Railroad, we come to the city of Colon. Now a tourist centre, it was founded in 1850 as Aspinwall, but was officially named Colon, after Columbus. David stands on the river of the same name, eight miles from the mouth on the south coast, and some 205 miles from Panama City. Amid rich pasture land, with gold mines near by, it exports bananas, cattle and tobacco. Chitre is situated on the Gulf of Panama, about 120 miles south-west of the Capital.

The official language of the republic is, of course, Spanish, but many of the radio networks include English announcements and programmes as part of their daily routine, and in common with many other Latin-

American stations they all devote a certain amount of air-time to commercial items. The unit of currency is the balboa, equivalent to the U.S. dollar, which is composed of 100 centesimos.

Short Wave Broadcasting Stations of the Republic of Panama

- HO50 "Radio Programmes Continental," Panama City, 5995 kcs.
- HP5K "La Voz de la Victor," Colon, 6005 kcs.
- HP5B "Radio Cadena Miramar," Panama, 6030 kcs.
- HOU31 "La Voz del Baru," David, 6045 kcs.
- HORT "Radio Balboa," Panama City, 6060 kcs.
- HOO "La Independiente," Panama City, 6090 kcs.
- HP5H "La Voz del Pueblo," Panama City, 6122 kcs.
- HOQQ "La Radio Nacional," Panama City, 6140 kcs.
- HOB "Radio Panamericana," Panama City, 6175 kcs.
- HOLA "Radio Atlantico," Colon, 9505 kcs.
- HP5J "La Voz de Panama," Panama City 9607 kcs.
- HOJA "Radio Provincias," Chitre, 9645 kcs.
- HP5A "Cadena Panamena de Radiodifusion, Panama City, 11700 kcs.
- HP5G "Radio Panamericana," Panama City, 11780 kcs.
- HPXB "Ondas Chiricanas," David, 11810 kcs.
- HPS62 "Ondas Centrales," Santiago, 11895 kcs.
- HOM51 "Radio Elebrock," Penonome, 15100 kcs.

Notes

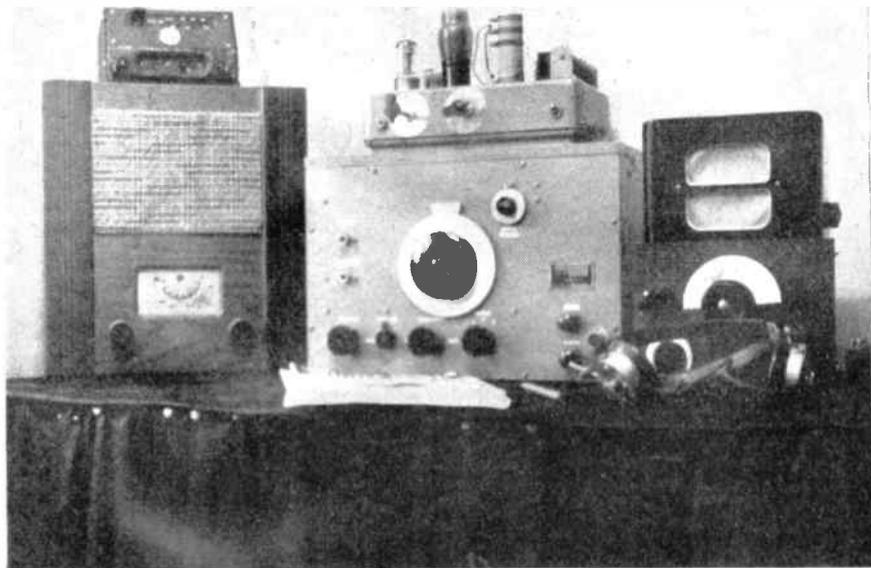
HP5A broadcasts only occasionally. HPXB is under construction and not yet on the air. SW Stations HOXA, HOXB, HOXC and HOXD "La Voz de Centro America" are now inoperative and their license cancelled.

(We are indebted to the Universal Radio Dx Club of California, U.S.A., for the above list of stations, which is official information obtained from the "Ministerio de Gobierno y Justicia, Direccion General de Correos y Telecomunicaciones," Republic of Panama.)

Recorded reports on the I.A.R.U. Congress—including that of your Editor—will be broadcast in the "Dx Programme for Amateurs and SWLs" from Swiss Shortwave Service on HER2, 6055 kcs and HEU3, 9665 kcs; on Tuesday, June 2nd, at 1905 GMT.

AROUND THE SHACKS

RICHARD WINTERS, I.S.W.L. G1780



The bug first bit me in 1946 and I started listening with an ex-Army No 18 superhet and a home built O-V-O and later became International Short Wave League Representative for the county of Leicestershire.

However, Army service prevented further activities in this Country: but as a radio mechanic in the Royal Signals I became 2nd Op. at DL2LC, Belsen, Germany.

On return to Civvy Street in early 1950 I didn't want to just listen but never had time to take the RAE but now that I am finally re-settled in my civilian occupation (solicitor's clerk) I can once again recommence short wave listening, and a refresher course for the RAE.

Reading from left to right my station is as follows: A war-time utility AC receiver (useful for broadcast bands etc. when repairing or construction jobs are in hand), superimposed by a mains battery-eliminator for the 1224A superhet next to the utility. Above the 1224A is a mains amplifier, home built, for use with

gram. etc. and on the right-hand side a Radio-craft DX2 and loud-speaker to match.

Coverage is on 20, 40 and 80 and the top-band at the moment, but I am negotiating with the local council for permission to erect a 10-metre di-pole in the near future. An Eddystone 640 is expected at any time now.

The aerials in use are a 60 ft. (20 ft. high) long wire (N/S) a dipole for 20 (E/W) and a long wire for 160—all in the roof-space. (Such is all that is possible in council houses as usual, hi).

At the risk of my neck I put out a kind threat to your old-stagers such as "Anon." (Ellis-town), and D. L. McLean (Yeovil)—you can all expect to hear from me with some phone Dx in the near future, just as soon as I really get down to listening. At the moment listening periods are confined to 0800-0900 and 1300 to 1400 GMT.

I hope to start climbing the Countries Heard and Zones Heard ladder very soon.

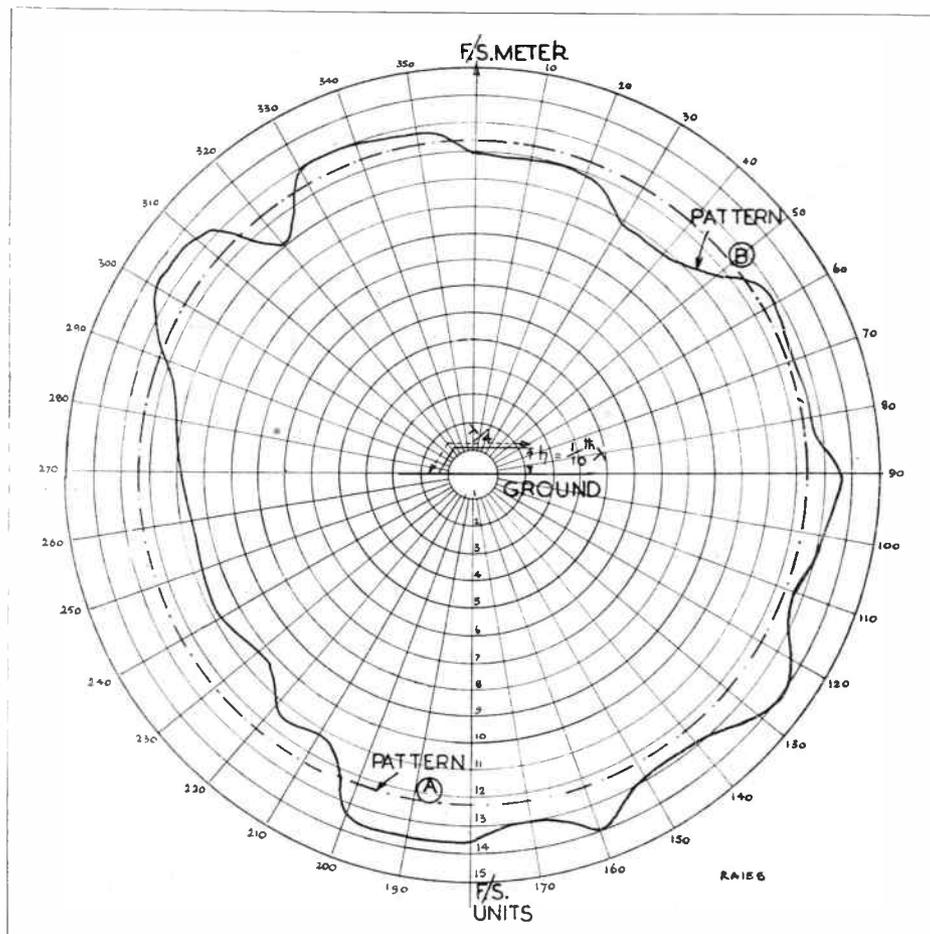
AERIAL RADIATION PATTERNS

by F. C. JUDD, G2BCX

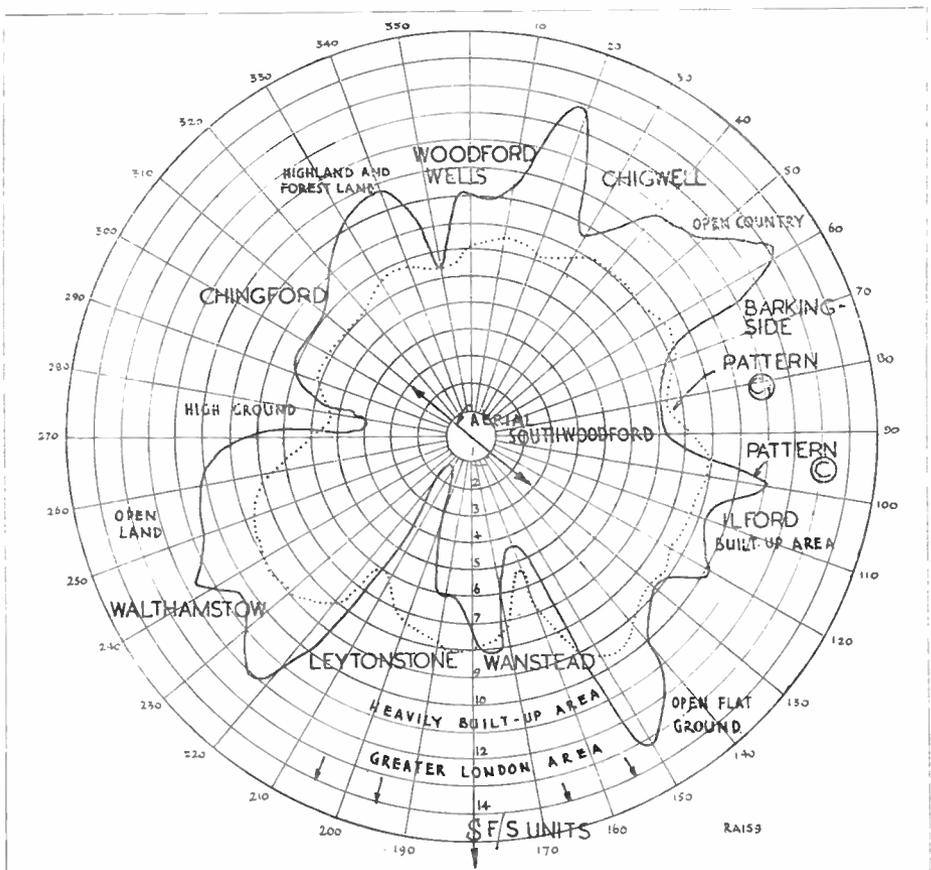
No. 4. FOLDED QUARTER WAVE AERIALS

Amateur transmitters limited to a simple quarter-wave aerial bent into the familiar inverted "L" shape may have often wondered what the radiation pattern is like when the aerial is tuned as a quarter-wave for 160 meters, that is, when the length is 132 ft. or thereabouts and the aerial is series tuned against ground or a counterpoise earth. Such an aerial may of course be operated on higher frequency bands and tuned to resonance as a half-wave on 3.5 Mcs, a full wave-length aerial on 7 Mcs, two wavelengths on 14 Mcs and so on. Some experiments were conducted to

determine the radiation patterns for various arrangements of quarter-wave aerials operated on 160 meters. Models were constructed for measurement on the writer's aerial testing table at a frequency of 3000 Mcs (10 cm) and patterns were taken in both the vertical and horizontal planes. These were checked against field strength patterns taken from FULL SIZE aerials. *It must however be appreciated that radiation from folded aerials of this nature will greatly be effected by the height, the surrounding soil, and the proximity of buildings and other structures.*



THE RADIO AMATEUR



Pattern "B" shows the horizontal radiation pattern from a quarter-wave aerial of inverted "L" shape. This was taken under more or less ideal conditions from a 3000 Mcs model. A vertical aerial in clear surroundings would have a theoretical pattern as indicated by the circle "A" radiation being of equal strength in all directions. In the pattern "B" the effects of folding and reflection from surrounding buildings may be seen. The pattern is irregular but radiation is generally quite strong in most directions. There are no defined lobes as would be the case with multiple half-wave aerials or beams. The vertically polarized radiation is confined to very low vertical angles and comes mostly from the vertical portion or portions of the wire. At higher angles there is strong horizontally polarized radiation which accounts for D_x contacts with an aerial, which, theoretically, has very little high angle radiation. This high angle radiation is generally broadside

to the horizontal portion of the wire and accounts for a certain amount of directivity where D_x is concerned. Examples of vertical radiation will be shown in Patterns Nos. 5 and 6.

The pattern "C" (including the check pattern C1) was taken from a FULL SIZE 160-meter quarter-wave aerial (the writers own aerial). This is located in fairly clear surroundings with buildings near the "feed end" and with other structures at low height running alongside. The aerial is 132 ft. long, with a top portion of 90 ft. at 45 ft. high. The pattern was plotted by taking measurements every 10 degrees on a circle of two miles radius and some notes on the surrounding area may be of interest. To the north-east and generally easterly directions the ground is fairly flat with small built-up areas. Due south are semi-industrial and heavily populated districts which form the northern half of the Greater London
(Contd. on p. 218)

BROADCAST BANDS REVIEW

by JACK FAIRS

All Times G.M.T. "Nf"—New Frequency.

To set the ball rolling this month, we cannot do better than quote Arthur Cushen's "leader" to a recent issue of his Short Wave Bulletin in the *New Zealand Dx Times*.

"Unrestricted use of the 41 metre band by US radio amateurs came into effect last February 20th, when the band was extended to cover 7000-7300 kcs. The section added, 7200-7300 kcs, is extensively used by broadcast stations with the result that signals are suffering interference from the amateur transmitters. This portion is to be added to the European amateur band shortly, and this long standing commercial band may soon have to be deleted." In our own opinion, and from a broadcast listener's point of view, this may not be such a very great loss after all, as this band invariably gives one a headache, at the best of times! The big snag arises, of course, if channels for all those 7 Mcs stations have to be found in other bands. . . .

EUROPE

France. The schedule of "Paris-Inter" has been extended and a second frequency, 9550 kcs, is now used, this being a new channel for these transmissions, but formerly employed by the European and Overseas Services of RTF. The schedule of "Paris-Inter" is now over 6200 kcs at 0600-2315 weekdays, 0630-0900, 1000-2315 Sundays, and over 9550 kcs at 1600-2315 weekdays, 1615-2315 Sundays. (Robert Mercier, Juvisy-sur-Orge, France.)

Denmark. The African and Middle East service of the Danish State Radio is now on Mondays and Fridays at 1745-1845 over OZF8, 15180 kcs. A transmission for Greenland is on OZF7, 15165 kcs, at 1430-1515 weekdays, and repeated at 0000-0045 over 6160 kcs (Nf). (*World Radio Handbook*.)

Greece. The Central Broadcasting station of the Greek Armed Forces, Athens, has been heard testing on 7420 kcs (Nf) to close at 2204, and there was very severe QRM on this channel from a Moscow transmitter. It has also been noted signing-on at 1500 (Sundays) and 1530 (Saturdays) but the best times were around 0700 and earlier. Sidney Pearce, reporting this item, adds a "late flash" to the effect that recently this station has been found back on the old 6330 kcs.

"Radio Ioannina" seems to be a new one, reported heard on 7085 kcs to 2330. ("Sweden Calling Dxers.") Ioannina is a town near the Albanian frontier, and was formerly known as Yannina.

"Radio Athens, The Voice of Greece" now has English at 1745-1800 on 11718 kcs. (Sidney Pearce.)

Germany. NWDR is due to commence an Overseas service from Cologne, and has been

testing on 7290 kcs as follows: 0130-0415 for North America, 1430-1715 for the Near and Far East, 1800-2045 for Africa and 2200-0045 for South America; also on 11795 kcs for the Far East. Sidney Pearce reports the 1430-1715 transmission, and adds that the call is frequently given in German and English, reports being requested to "Radio Cologne, Germany." (Note: Is this a new station, or the original 7290 kcs Tx at Norden-Osterloog? According to previous information—see the March "Review"—the latter would appear to be correct. Scribe.)

U.S.A. in Europe. Ian Hardwick of Thames Line, New Zealand, has received a QSL card from "Radio Free Europe" which states that the Tx on 5970 kcs is located at Frankfurt, Germany, and another (the first from outside Europe!) for the MW 719 kcs station, gives its location as Munich.

Albania. The English broadcasts from "Radio Tirana" are, since April 6th, at 0445-0500 and 1915-1930 daily, on 7850 and 6560 kcs. (Pearce.) Peter A. Conway, Birmingham, reports these two outlets with English at 2105—presumably before the above date!

Bulgaria. "Radio Sofia" has also altered the times of its English transmissions, and these are now 2000-2015 and 2115-2145 on 6070 and 6760 kcs. (Pearce.)

AFRICA

Tanganyika. Dar-es-Salaam Radio, 5049 kcs, is expecting to increase power to 20 kW in mid-1954; present output is an experimental 250 watts. (*Universalite*, bulletin of the Universal Radio Dx Club, California.)

Southern Rhodesia. Salisbury is reported by WRH to have re-adopted the old 6018kcs frequency in favour of the 7 Mcs outlet; this is given as 7220 kcs, but Lusaka, Northern Rhodesia, uses this one. Should it not be 7285 kcs that is now inactive? (Scribe.)

Egypt. The new 100 kW transmitters of the Egyptian State Radio, Cairo, are on the air at 0430-0700 on 6085 kcs and at 0830-0930 on 9755 kcs with relays of the Arabic Home Service. Both frequencies can be heard at 1600-1930, also in Arabic. (WRH.) Roy Patrick, Oldham, logged them both around 1615. The 10050 kcs frequency is only used very occasionally, i.e., only on Fridays and only during the month of Ramadan, which is, this year, from mid-May to mid-June. (W.R.H.) The *New Zealand Dx Times* also mentions 10050 kcs this month, and reports a special Arabic service at 0500-0600 which appears to be directed to listeners in the Sudan. Ian Hardwick lists this transmission with good signals in New Zealand.

The existing European Service on 11815 kcs is in English, French, Italian and Greek;



One of the attractive QSL cards issued recently by the Swiss Short Wave Service for their special Dx Contest. S.S.S. give an amateur programme at 1900 GMT on the first Tuesday each month.

German programmes are being prepared. (W.R.H.)

Kenya. VQ7LO Nairobi on 4855 kcs is sometimes quite good from around 1700 to close at 2000, but the CW QRM is inclined to be troublesome at times. (Peter Conway.) Was noted with S7 signals at 2000 recently. (William P. Griffith, Ashtead.)

Cape Verde Islands. CR4AA "Radio Clube de Cabo Verde," Praia, has moved its 7 Mcs frequency from 7132 to 7397 kcs and is heard with very good signals from sign-on at 2000 to close at 2200. At times there is QRM from BEC36 on 7400 kcs (Mercier) and from a Moscow station on 7400 kcs (Pearce and Scribe.)

Ethiopia. ETAA "Radio Addis Ababa, the Voice of Ethiopia" is heard again on the old 19-metre channel, an announced 15060 kcs, from around 1800 with recorded musical programmes announced in English. Sometimes there is a short newscast at 1830. (Sidney Pearce). Has been heard until 1855 near 15050 kcs with dance music. (Scribe.)

Angloa. A letter from the "Radio Club de Benguela" says this station is now using 5165 kcs (Nf) in parallel with 9502. (Robert Mercier.) This 5165 kcs is probably a move from 5042 kcs of CR6RB. (Scribe.)

Italian Somaliland. "Radio Somalia," Mogadishu (or, in Italian, Mogadiscio), has verified reports sent by Bill Griffith and A. J. Allmey (Worthing), and the schedule on 7420 kcs is given as 0945-1030, 1700-1800 in Italian and 1415-1515, 1600-1700 in Somali. The Tx is a 300-watt Italian Imcaradio and the antenna an omnidirectional doublet.

Sudan. Omdurman on 6438 kcs is just audible in New Zealand, with CW QRM around 1700. (Ian Hardwick.)

Azores. CSA93 Ponta Delgada, 4865 kcs, is heard in the evenings by Peter Conway,

Bill Griffith and Stanley Copple. This outlet is now on the air at 2115-2400. (W.R.H.)

NEAR EAST

Cyprus. The Forces Broadcasting Service on the island appears to have re-commenced SW transmissions, and is reported heard on 6015 kcs (Nf) relaying 606 kcs MW. (W.R.H.) If the station hasn't moved, the location will be Lakatamia. (Scribe.) Stanley Coppel, Belfast lists ZJM8 "Sharq al Adna," Limassol, 9650 kcs, at S7 level around 1700.

Iran. EQC Teheran is reported by WRH to be still varying from 9660 to 9680 kcs, and the Persian transmission is listed on 7520 kcs (Nf) around 1000-1200 in parallel with EQC.

Kuwait. "Radio Kuwait" on 5000 kcs is audible with moderately loud signals from around 1800 to close at 1930 (previously 1900). (Sidney Pearce, Ivor J. Street and Scribe.)

Aden. This British Colony and Protectorate does not have a Broadcast station, but a station can be operated by Cable and Wireless Limited., at the request of the Government of Aden; frequency is 6045 kcs and the power 250 watts. (W.R.H.)

Syria. Damascus was Q4-5 S6-8 with a transmission for India and Pakistan on 11995 kcs (Nf—not 11915); Arabic and western classical music was followed at 1500 by news in English. (Scribe.)

Saudi-Arabia. Sidney Pearce has been logging Djeddah near 7310 kcs (Nf) signing-on at 1618 to close around 1710, with severe QRM spreading from "Radio Free Europe" on the LF side. Sidney also lists the 5975 kcs outlet signing off at 0506.

ASIA

Japan. "Radio Japan" (the International Service of NHK) will shortly increase its overseas transmissions from the five, as at present, to 10. The additional ones will be

for South and Central America, Hawaii, Europe, Siam and Australia, though the latter two will not be in operation for at least six months. (Arthur Cushen, Invercargill, N.Z.)

Fred Pilkington, G3IAG/MM, Radio Officer on board the M.V. *Kirriemoor*, sends along an extremely interesting and lengthy account of his listening activities. He "signs-off" with the phrase "Your travelling reporter, hi" and this is no understatement—in fact he began this letter between Singapore and Osaka, completed it in the middle of the North Pacific, and posted it at Port Tahsis on Vancouver Island! Fred has carried out an extensive survey of the low-powered AFRS stations in Japan, Korea and the North Pacific in general, and though space limitations do not allow for its inclusion here, this information will most certainly not lie dormant in our files! (Would be grateful for one or two photos, as you suggest OM—if you have any to spare!)

Burma. Four new powerful transmitters of the Burma Broadcasting Service, Rangoon, are expected to be in operation shortly. (W.R.H.)

Malaya. Singapore now has a new Forces Broadcasting Service Tx on 5010 kcs, on the air at 1200-1400. Except at opening and closing, when English announcements are given, all programmes appear to be in Hindustani. (Arthur Cushen.) The BFEBS can be heard on 17890 kcs (Nf) with BBC relays; noted with Urdu for Pakistan at 1445. (Scribe.)

China. An interesting news item from the U.S. concerns the new Chinese Patriot Radio, which is evidently clandestine on the Chinese mainland. This station broadcasts anti-Communist propaganda irregularly about every fourth day, using Radio-Peking frequencies usually immediately after Peking signs off. Languages used are only Chinese and Korean, and these transmissions have been noted on 6103 and 15060 kcs, among others, lasting about 5 to 15 minutes.

"Radio Peking" is heard to close at 1530 on about 15585 kcs (as per "Review" for March) but usually very weak. (Ivor J. Street, Worcester. Nice work on your 99th "country," OM!)

Taiwan (Formosa). "The Voice of Righteousness" located at Shih-Lin, and which is now on 7400 kcs (ex-7334), is actually two stations in one! Cheng Sheng Radio Station (810 and 7400 kcs) has the call BEV34 and is on the air at 0700-0800 in Chinese, and at 0800-0900 in English. BEC36, "The Voice of Salvation," (1080 and 7400 kcs) broadcasts Chinese programmes at 1130-0130. ("Sweden Calling Dxers" and W.R.H.) We should, however, think that the times given refer to Taiwan time (eight hours ahead of GMT in winter), as it would appear unlikely for this

station to have a schedule of 2300-0100 and 0330-1730 local time—or would it?

Indonesia (Java). The Indonesian Air Force Station at Djakarta is still operating on 11945 kcs, and is a strong signal around 1000 in New Zealand. A new Indonesian outlet is 4970 kcs, heard at 1100 mixed with heavy CW QRM. (Cushen.) On one occasion recently, we logged a weak station on 5010 kcs at 2330, which seemed to be in parallel with YDF on 6045 kcs, and wonder if there is any connection between these two?

Indo-China (Vietnam). Fred Pilkington was hearing "Radio Hanoi" on 9670 kcs from 1040 with VOA Programmes—but this was when his QTH was 1,000 miles west of Vancouver!

Mongolia. Ian Hardwick reports Ulan Bator on 6325 kcs heard opening at 0900 with weak signals.

Nepal. A station announcing as Katmandu has been reported testing on 9856 kcs in Hindi, Pathani, Tamil and French, at around 1130. (W.R.H.) According to *Radio and TV News, U.S.A.*, this station is testing to Afghanistan, West Pakistan, India and in a generally western direction. (Whether or not this is the official Nepal Radio, at present listed on 7100 kcs, is not stated.)

India. The French programmes of AIR for Europe at 1945-2030 are now over 5980, 7255 (Nf) and 9705 kcs (Nf), reports *World Radio Handbook*. Sidney Pearce found this transmission on a frequency near 9690 kcs in parallel with 5980, and also lists the 1500-1530 English period of music now on 11850 and 15290 kcs. T. J. Pavitt, Romford, writes for the first time, and mentions the 11850 kcs channel, Q4 S7-8 with some QRM, at 1330-1445.

Ceylon. The National Service (English Programmes) of "Radio Ceylon, Colombo, is now on 5025 kcs (Nf) instead of 6075 kcs, at 0130-0300, 0715-0815, 1200-1630 (Saturdays to 1715), and on Sundays at 0130-0830, 1200-1630. The Sinhalese Service remains on 4900 kcs, but the Tamil Service now has an outlet of its own on 4965 kcs (Nf). (W.R.H.) The latest "Voice of America" relay frequency at Colombo, 9570 kcs, is scheduled 1500-1730. (Mercier, O'Sullivan, Pearce and W.R.H.)

PACIFIC

Papua and New Guinea. VLT Port Moresby is to abandon 7280 (VLT7) and 9520 (VLT9) in favour of 6130 kcs (VLT6). (*Australian Dxers Calling.*)

New Zealand. ZL9 on 11810 kcs has now been brought into use by "Radio New Zealand," Wellington, and the current schedule runs as follows. ZL7 (6080) and ZL8 (9620 kcs) at 1800-2145, 0600-1045 (to 1120 Saturdays, 1000 Sundays); ZL3 (11780) and ZL9 (11810 kcs) at 2200-0545. (Arthur Cushen.) Apart from those mentioned above, all other

ZL outlets will, of course, be inactive at present.

Philippines. DZFM "The People's Station," Manila, now has an additional relay on 11840 kcs, which is DUH4. (Fred Pilkington. Note : This frequency was at one time used by DUH5 of the same network. Scribe.)

NORTH AND CENTRAL AMERICA

Alaska. Ken Boord, Dx Editor of *Radio and TV News* of the U.S.A., has received confirmation direct from station AAH of the Alaska Communications System, that all correct reception reports will be verified gladly by letter, provided a self-addressed envelope with sufficient return postage is included, otherwise reports will have to be filed without reply since the System has no funds for either QSL cards or postage for veris. AAH is owned and operated by the U.S. Signal Corps, with headquarters station at Seattle, Washington State, and branch stations situated throughout Alaska. Several types of transmission are made, including broadcast; no regular schedule is maintained, but normally voice transmissions are preceded by one hour of test music and identification. Usual frequencies for these broadcasts, depending upon the time of day, are 4305, 6910, 10720, 11995, 14867.5, 17500 and 19510 kcs. The QRA is : 550 Federal Office Building, Seattle 4, Washington, U.S.A. This item comes via URDXC.

Honduras Republic. HRQ "Radio Tela" has moved from 6177 to 6035 kcs (Nf) and the schedule is 1300-0400. (W.R.H.) HRA "La Voz de Lempira." Tegucigalpa, has been found on 5915 kcs in the clear at 0230 with American recordings, reports Robert Mercier. HRPI "El Eco de Honduras" at San Pedro Sula, has moved from 6351 to 6360 kcs, and comes over at fair level around 0250. (Mercier.)

Guatemala. A new station, announcing as TGTE, and probably located at Zacatecas, is reported on 6760 kcs. (RTN via W.R.H.) Stanley Coppel lists TGJA, Guatemala City, on 5990 kcs with the announcement "Radio Nuevo Mundo" at 0200.

Martinique. Ian Hardwick has squeezed a QSL out of INRI Fort-de-France on 9700 kcs, which is indeed another nice item for his collection. (We are pleased to note that this station is at least still active on this channel ! Scribe.)

British Honduras. "Radio Belize" has been logged regularly by Robert Mercier at fair strength on 4950 kcs, and this station appears to have a very irregular schedule, sometimes from 0000 to sign-off at 0315; is heard using Spanish around 0110, and at 0200 the announcement : "The time is now eight o'clock."

Trinidad. A schedule by air mail from "Radio Trinidad," Port-of-Spain, reads : 790 and 3275 kcs at 1000-0300, and 6085 kcs (Nf) at 1000-2200. No mention is made of 9625 kcs. (Pearce.)

Panama. HO50 "Radio Programas Continental," Panama City is now heard on 5990 instead of the listed 5995 kcs, to close at 0500. The identification is "Transmite el Circuito RPC en la Ciudad de Panama y en Colon." (Robert Mercier.)

Cuba. COKG "Cadena Oriental de Radio" at Santiago de Cuba, 8955 kcs, have sent their pictorial QSL card to Sidney Pearce, and give their schedule as 1057-0532 weekdays, and 1127-0530 on Sundays. Sign-off is in Spanish and English.

Costa Rica. Robert Mercier has succeeded in logging the new "Radio Excelsior" at San Jose, which was mentioned in these notes last month. The frequency was 6500 kcs, and strength variable around 2330; at 0440 a rebroadcast of the Spanish edition of the VOA "Hit Parade" programme was noted. The address is Apartado 1764, San Jose.

SOUTH AMERICA

Brazil. ZYK33 of the "Radio Jornal do Commercio," Recife, 15145 kcs, is now on the air until 1930, at which time listeners are requested to retune to ZYK3 on 9565 kcs. (Pearce.)

Ecuador. Station HC1BF at Quito, 4750 kcs, has the slogan "Radio Commercial, Una Voz Ecuatoria para la America." Power is 200 watts, the schedule is now 1100-0400, and the QRA : P.O. Box 2583, Quito. The call-letters HC1BD are for the MW outlet on 1110 kcs. (Arthur Cushen.)

Colombia. HJAP "Radio Colonial," Cartagena, has been heard for some time now on a varying 4948 kcs (Nf), having moved from 4930, and is heard by Robert Mercier to close at 0400; has also been noted at 2315 with terrific QRM from YVMM "Radio Coro" (Venezuela) on 4947 kcs, which announces as 4950.

HJKJ "Emisora Nueva Granada," Bogota, 6160 kcs : good at 0000 with the cuckoo interval signal. HJDW "La Voz de Medellin" at Medellin, 5055 kcs : a consistent performer around 2200-0000 with occasional mention of "Cadena Nacional." (Ivor Street.)

Bolivia. Sidney Pearce reports hearing CP38 "Radioemisoras La Cruz del Sur," La Paz, at surprisingly good strength from sign-on at 2255 near 9497 kcs. The news in Spanish is at 2330 and the call, preceded by chimes, is announced every 15 minutes. On Sundays at 0015, CP38 has a regular VOA recorded feature of operatic selections with announcements in Spanish. Other rebroadcasts include the BBC feature "English by Radio" at 0000 on Mondays, Wednesdays and Fridays, VOA Symphony at 0100 on Tuesdays, the BBC Symphony Orchestra at 0100 on Thursdays, and BBC London Studio Concerts at 0130 Saturdays.

French Guiana. Ivor Street has heard "Radio Cayenne," 6198 kcs, on two or three occasions at 2300-2330 with weak signals and

severe QRM from GRN (6195 kcs). Programmes were mostly recordings announced by a YL, and "La Marseillaise" is played at the 2330 sign-off.

Argentina. The 15345 kcs outlet (LRA) of SIRA, Buenos Aires, is listed by Peter Conway with French programmes around 2000-2045. Peter wants the times of the English transmissions: this frequency is used at 2300-0100, and LRS, 11880 kcs, was last reported with English at 2000-2100, but the schedules are often altered, Peter. T. J. Pavitt reports LRS (11880) with consistent Q5 S8-9 signals at 2000-2100 for days on end. (Rx: Modified R1224B. Tnx for your letter, OM.)

LRXI Buenos Aires, 6120 kcs, was logged at 2330 with chimes and the call "Radio El Mundo." (Stanley Coppel.) Bill Griffith reports "Radio El Mundo" on 11950 kcs approximately at 2230, "frequently announcing its identity," but Stanley Coppel lists ZPA5 "Radio Encarnacion," Paraguay, on this frequency at exactly the same time! Perhaps our own item in last month's "Review" may be the solution to this little problem? (It is interesting to note that in the current edition of W.R.H., ZPA5 is listed once under "Paraguay" and again included in the list of Argentinian stations.)

Venezuela. YVME "Ondas del Lago," Maracaibo, 4800 kcs: Q5 S7 with news in Spanish at 2240. (Mike O'Sullivan.) Also noted by Stanley Coppel, "5 and 9" with call at 0310. YVQA "Radio Sucre," Cumana, 4960 kcs: Q4 S8 at 0255. (Coppel.)

CONCLUSION

Here again is the Honour Roll, with positions as at May 1st. This is for Short Wave Broadcast Stations only, and we start at 30 countries verified.

The Editor and your Scribe thank all readers and overseas Dx editors who sent along items for inclusion in this column, and all contributions are acknowledged. Credit should be given to "The Radio Amateur" on republication of any information. News for our August issue should be sent to: J. Fairs, 2a Durham Road, Redcar, Yorkshire, and *must* arrive by June 27th.

73 to you all till next time.

HONOUR ROLL

1. Sidney Pearce	132
2. Arthur Cusden (New Zealand) ..	127
3. Ivor J. Street	99
4. Roy Patrick	93
5. Mike O'Sullivan	92
6. Jack Fairs	91
7. Stanley Coppel	87
8. Carl Shapiro	83
William P. Griffith	83
9. Ian Hardwick (New Zealand) ..	78
10. Manfred Leppele (Germany) ..	72
11. Tony Allmey	68
12. John Whittington	63
13. Ron Thorndike	54
14. Jim Symes	51
15. Robert Mercier (France)	44
16. Fred Pilkington (MM)	41
17. Alex Mackenzie	37
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Explaining the Decibel (Contd. from p. 206)

numerically equal to decibels, differs inasmuch as a reference level of 1 milliwatt in 600 ohms is specifically implied in the definition.

In conclusion it should be stressed that the decibel is *not* a unit of loudness, but a unit of power change. The reason why the decibel cannot be used as a unit of loudness, is because the frequency response of the ear is non-linear: for sounds of equal magnitude, but differing in frequency, would be discerned by the ear—not as equal—but of different magnitudes. The unit of loudness is the phon, and should in no way be confused with the decibel.

Once the basic formulae have been learnt, conversion into decibels is a simple process, requiring essentially a set of log tables. Although, the constructor can, if desired, dispense with the problems of computing decibel ratios by referring to the various published abacs now available. Nevertheless, before proficiency is attained in resolving problems quickly and intelligently, a fair understanding of the decibel is required, and in this respect it is hoped that this article will be of benefit to the constructor.

Aerial Patterns. (Contd. from p. 213)

area. Note the attenuation in this direction (160 to 200 degrees). In the direction 240 degrees, the radiation strengthens and the area along this path is clear for several miles. It is in fact open ground at the edge of Epping Forest. These points may account for the writer being able to obtain good contacts with Cornwall and Devon and the lower GW districts, HB, OZ, and OK and easterly GM stations in the east and north-east respectively, yet contacts with stations on the other (south) side of London are almost impossible. The attenuation caused by the Greater London area most certainly accounts for this, and in an effort to prove it, a portable transmitter and receiver were operated from a building in Charing Cross Road (approximate centre of London). A quarter-wave aerial was suspended vertically from the top of the building but contact with suburban stations was almost impossible. One station (G4GA) at Chingford, with whom the tests were conducted, was barely audible despite being located less than a dozen miles away. North of England, GW and GM stations were heard at S9 and plus.

I.A.R.U. CONGRESS

We present herewith a report on the most important of the decisions reached at this congress.

Imagine an attractive modern hotel, standing high in the centre of the city, from the balconies of which one looks down on the busy streets below and across a vista of beautiful buildings, trees and flowering shrubs, is the Lake of Geneva and the Savoy Alps still topped with snow. It's a warm sunny evening as the delegates to the 2nd IARU Bureau 1 Congress gather together on the balcony: introductions are made as each new party arrives, the local HB9 gang greasing the wheels so that before long, everybody seems to have known everybody all their lives. It would be difficult to conceive of an atmosphere more calculated to ensure that the next few days, deliberations should run entirely satisfactorily.

But our duty is to tell you of the major discussions during the Congress—not to enthuse on the attractions of Lausanne nor the hospitality of our Swiss hosts. The Congress started in earnest on the Thursday morning when the delegates from practically every country in Europe were presented to the local dignitaries.

Early contact was made by your Editor with **Russell Henderson** of the **Swiss Shortwave Service**, who was attending the Congress to record impressions for the "Dx Programme for Amateurs and SWLs" which SSS radiates on the first Tuesday and Wednesday of each month. Your Editor was asked "to say a few words into the microphone" giving his impressions of Lausanne and the expectations of the Congress. This recording will be radiated at 1905 GMT on Tuesday, June 2nd, from HER2 on 6055 kcs and HEU3 on 9665 kcs. With **Russell Henderson** was **Etienne Heritier**, HE9RDX, one of Switzerland's leading SWLs who presents the Dx News in this programme and whose name is well known to many of our readers.

At the first meeting, chairman and recording secretaries were appointed for the two main

committees; one to deal with technical matters, the other to cover other matters of interest to amateur radio—the administrative committee as it was called. After some little discussion on the order in which matters on the agenda should be taken—followers of U.N. affairs will know that this appears to be a characteristic of International conference these days—the first session was adjourned for lunch.

In the afternoon at the first administrative meeting, two matters of particular interest produced extended discussion.

The first was the old controversy of the **value of present day SW BC programmes**. Much band space and many hundreds of kilowatts are expended daily on pumping into the aether—the "snarles of peace and goodwill" as one delegate put it! If countries devoted these programmes to expositions of their culture and their ways of life, they would be radiating valuable and worthwhile material, but as our readers well know this is rarely the case, and they will agree with the views of the delegates, that in many cases, no value at all is being served by these SW BC programmes and they should be cleared off the air and the space put to better use. As **Mr. Arthur Milne**, G2MI, reminded the committee, a delegate at a previous conference had suggested that he doubted if there was one listener per kilowatt to these propaganda programmes!

The second item to draw plenty of discussion was that of **Band Planning**. Most delegates agreed that the present band planning arrangements work well and that they should be continued. It was agreed that it is better to get amateur radio to keep its own house in order, rather than to seek any form of Government-sponsored control.

An interesting point came out in the discussion on "intruders into the amateur bands"

and that was the fear that if amateurs did not continue to fully occupy their bands in spite of the terrific QRM from intruders which occurs at times, these intruders would "stay put" in the bands as they find they can thus force a clear channel for themselves. All the national societies represented at the Congress were advised to remind their members of the importance of using the amateur bands to the full, in order to maintain our rights to these frequencies. In this connection the present "DL4 traffic" came up for adverse comment. It is about time this matter was raised officially, and once the ice of a natural reluctance to criticise our American colleagues had been broken, delegates voiced their feelings in no uncertain manner on this misuse of amateur frequencies. It was unanimously decided to ask the IARU to take this matter up with the ARRL.

On the following day, the first matter to engage the delegates' attention, was the question of the future of the **Region 1 Bureau**. Mr. Clarricoats pointed out that the RSGB had "carried" the Bureau for the first three years and it seemed advisable that now that things in the Amateur Radio world in Europe were nearly back to normal, the basis of the Bureau should be greatly broadened and responsibility shared. OH2QM and the Italian delegates also spoke in favour of such a move, though all delegates were of the opinion that as Britain held such a prominent place in world affairs and as she had so much experience of international committee work, she should continue to play a major part in Bureau 1 administration. A small sub-committee, headed by OH2QM, with an Italian and a German member was appointed to draw up a suggested plan for the future and present it to the final plenary session at the conclusion of the Congress.

The main committee then passed on to discuss **licensing questions** in each of the countries. Most delegates reported that they had good relations with their respective Government departments. The difficulties of some countries were brought forward by their delegates, the Yugoslav delegate in particular, saying how difficult it was to obtain equipment in his country. In Italy the authorities leave all questions of licenses, call signs and so on, to the national society. The German delegate mentioned the difficulties occurring in the Soviet controlled part of his country and said a **new block of call signs** with the prefix **DM**

was shortly to be issued by the "Society of Sport and Technic" in the Soviet-controlled zone of Germany, to its members. This was a pseudo-cultural organisation with military tendencies, said the German delegate.

One topic of particular interest discussed during this morning session, was that of **Amateur Radio Emergency Communication Schemes**. Mr. Clarricoats outlined the flood events in England, and PAØLR reviewed the happenings in Holland. Your Editor was also asked to give his experiences in this connection. Considerable discussion took place, many delegates saying that their societies had actually been approached by their Governments, with the suggestion that such a service should be initiated. Mr. Clarricoats for the RSGB, said the response to the appeal for British amateurs to take part in such a scheme had been excellent and definite proposals were soon to be published.

The afternoon session was opened by Mr. Clarricoats saying that a request had been received from some British amateurs that **portable facilities** should be made available in other countries in which they may happen to be travelling. The GPO, reported Mr. Clarricoats, appeared agreeable to open discussions on this matter. With the exception of the German delegate, most other delegates felt such authorisation was very unlikely to materialise and in the course of the discussion, it transpired that in many countries portable operation was strictly forbidden to their own nationals.

A **Region 1 Field Day** was proposed by the RSGB delegates, the suggestion being made that other Societies should hold their Field Days at the same time as the British NFD. During the discussion it appeared that several societies had already done this or were planning to do so in future. A suggestion that rules should be standardised, each country having the same input power and so on was not found acceptable as delegates felt the differing conditions in each country made this impossible. Each country should run its own NFD in the way most suited to its individual requirements.

A matter of some little difficulty next arose. It appears that in some countries, **QSL cards** cannot be sent at **commercial paper rates**, whereas in others no definite ruling exists, but they are in fact accepted at this rate. The difference in the financial aspect to QSL Bureaux is very considerable and those coun-

tries in which no definite ruling exists, but where in fact cards were being sent cheaply were loathe to raise the matter officially with the International Postal Union, lest a ruling should be made unfavourable to them. However, on a vote, the Committee decided to take this matter up with the authorities concerned.

Another matter of interest dealt with was a proposal from the Swedish delegate that notice of **Amateur Radio Camps** being held in Region 1 countries should receive early publicity, so that amateurs in all countries should get to know of them. It was agreed that each country should let Region 1 HQ know about these events and the HQ would circularise member societies. During the course of this discussion, it transpired that considerable annoyance had been caused to some amateurs, by visits from bogus amateurs, who presented QSL cards signed by other amateurs in order to get free hospitality!

A suggestion was put forward that a **common phonetic alphabet** should be drawn up to replace the several at present in use for phone operation. Most delegates felt this would in practice add yet another code to existing ones and the proposal was withdrawn.

Whilst these administrative matters were being discussed, a smaller technical committee was also sitting each day, with a full agenda of matters of interest to the future development of the technical aspects of amateur radio. Such matters as the standards for SSB, FSK, FM and pulse transmission were considered. TVI problems, amateur television systems, microwave development and the correlation of VHF propagation data were dealt with. Agreement on these matters, being naturally less controversial, was more easily reached than on many of the questions dealt with in the administrative committee. Amongst the decisions reached, that of interest to most amateurs was in relation to **Operating Standards** and reads as follows:—

It was the opinion of the Technical Committee that there are primarily two distinct cases of objectionable transmissions in amateur bands, due to:

- (i) Local contacts on Dx (14 and 21 Mcs) bands,
- (ii) Poor telephony quality.

It was therefore decided that

- (a) To avoid unnecessary local contacts on the 14 and 21 Mcs bands the use of such bands in national and/or international contests shall be subject to IARU Region 1 Bureau approval and that

- (b) Telephony AM-transmissions quality shall be rated in terms of the RSM Code;

R standing for readability.
S " " signal strength.
M " " modulation quality.

The M rating shall comprise the following five steps:

- M1 unintelligible modulation,
- M2 Bad modulation due to spurious or parasitic oscillations or to causes unknown.
- M3 Bad modulation due to FM of the carrier.
- M4 Bad modulation due to over-modulated carrier.
- M5 Good modulation not exceeding 100%

The significance of the RSM Code shall be made known to IARU HQ and be universally adopted. It was felt that to give a correct quality rating of phone transmissions the BFO check method should be used. It is suggested to institute a "Good Telephony Award," similar to the already "A1-Operators' Club."

On Saturday, the two main committees and the smaller ones which had been formed during the course of the Congress met at the final plenary session and approval or rejection of the various suggestions given by votes from all delegates.

The future of Region 1 Bureau produced the most lively debates of the whole Congress. The proposal put forward by the sub-committee dealing with this matter was that Mr. Clarricoats, G6CL, should become General Secretary to Region 1 Bureau. Mr. Clarricoats however, pointed out that he had no authority from the RSGB Council to continue this work in their time and he could not accept extra duties in his own time. Mr. Arthur Milne, G2MI, said he was most concerned at the lack of co-operation he had received during his term of office as Secretary from some member societies. Correspondence had not been answered and it seemed that the scheme proposed was a "beautiful dream" which would not work unless some societies became more internationally minded. In this connection it was noteworthy that some societies were well represented at the Congress, three or four delegates being present, whereas others—including the RSGB—sent the minimum number only. As OH2QM said in debate, our very "life blood" depends on successfully putting over our case for the continuation of frequency allocations to the various International Conferences which decide these matters and it is imperative that very strong support be given to the IARU so that it can put the amateur's point of view at such conferences.

It was finally resolved to recommend :

- (1) That RSGB shall continue to be the Region 1 Bureau Society.
- (2) That an International Region 1 Committee shall be set up.
- (3) That the International Region 1 Committee shall consist of five members and a general secretary ; of which members, three shall be members of societies outside the United Kingdom.
- (4) That a Fund be established immediately to enable Region 1 Bureau to continue to function effectively. All monies for this Fund to be paid direct to RSGB, London, annually on July 1st, commencing July 1st, 1953.
- (5) That a Fund be established to enable members of the International Region 1 Committee to attend meetings of that Committee in London. All monies for this Fund to be paid direct to a Swiss Bank annually on January 1st—commencing January 1st, 1954.
- (6) That a Fund be established to enable Region 1 to send a delegation to the next ITU Conference. All monies for this Fund to be paid direct to a Swiss Bank annually on January 1st, commencing January 1st, 1954.

Voting then took place for the above committee, G6CL, G2MI, HB9GA, PAØDD and SM5ZD being elected.

Finally a very sincere vote of thanks was made to M. Pierre Maeder, HB9CA, for the excellent way the Congress had been organised. We should like to add our tribute here to HB9CA. The Congress, as can well be imagined, entailed an enormous amount of work. That things ran so well is of very great credit indeed to HB9CA and his helpers.

From the above, readers will gather that a lot of hard work was put in by delegates on matters of great importance to the future of amateur radio. But we must not conclude without mentioning the various social activities which were somehow crammed into the Congress programme. Of the official ones, the tour by motor coach of Lausanne and the visit to the Castle of Chillion will long be remembered. Of the unofficial ones, your Editor wishes to place on record his thanks

to HB9MZ for his hospitality at his most beautiful QTH on the hillside overlooking the Lake of Geneva. Here we called " CQ London " without much success as conditions were no good for HB9/G contacts, but several contacts were made with EA and CT stations. And finally, the really high spot provided by Harry Laett, HB9GA, who took a party of us to Berne, Thun and some of the delightful villages near the Jungfrau mountain, the grandeur of which will never be forgotten. This little expedition, ending with a visit to the Swiss Post Office Laboratories, where we were given a demonstration of high definition television, really was a most wonderful example of the thought, kindness and efficiency shown us by our hosts. Thus ended a most useful Congress. We have devoted considerable space to reporting it, because we feel the decisions reached at it will have important repercussions in the world of Amateur Radio in our part of the world at any rate. We could have said much more, but we feel we have dealt with all the major issues herein. Next month we hope to be able to present a collection of photos of some of the personalities at the Congress.

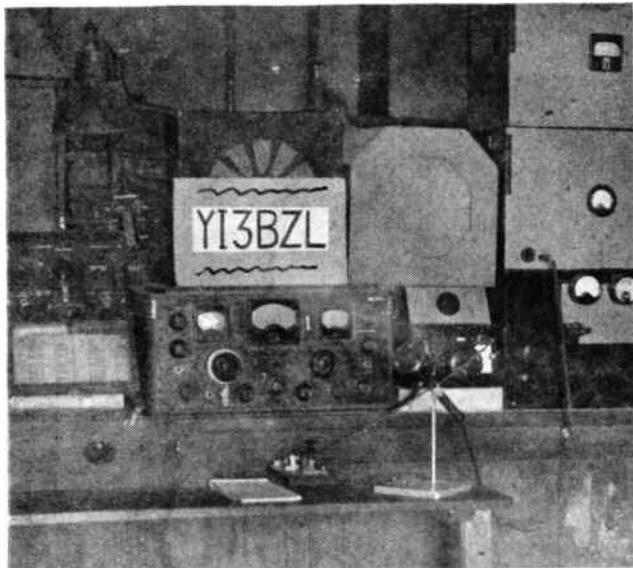
" Strictly for the Beginner "

We regret that its has been been necessary, through lack of space, to hold over until next month the second part of ' Buffers and Doublers ' in this series.

Read the " RADIO AMATEUR " regularly.

Edited and written by radio amateurs

. for radio amateurs



AMATEUR BANDS COMMENTARY

by

STANLEY HERBERT,

G3ATU

Can it be that we are about to "turn the corner," at long last? Well, perhaps it is a little early to start going into optimistic and rapturous Dx dreams; nevertheless, this past month *has* seen a decided improvement in conditions. Lots of new countries have been added to lots of logs, largely as a result of the various openings on 20, so we start off straight away with that band and the doings thereon.

Twenty Metres

As is to be expected at this time of the year, the band is opening earlier and staying open for very much longer. The early morning brigade are no longer wasting all their time on a dead band, in fact, quite a few of them have been hearing their first Pacific Dx ever. Later in the day, Dx of various kinds has often been coming through at good strength and has been workable through the European short-skip. We were particularly impressed by the regular early evening appearance of numbers of the rarer W7 States, roaring in, alongside such items as VSI, 2 and 7, DU, CR9 and even ZC5! Let's keep our fingers crossed and hope this state of affairs proves to be something more than short-lived.

Dick Poppi (Beckenham) has given the CW band a goodly going over. He thinks the last week or so has actually shown an improvement over the same period in 1947, with stuff such as KX6 and FK8 coming through (although almost too weak to copy) as late as noon.

Dick wonders—if this is the bottom of the trough, what will things be like at the top?

His Dx on CW was CE6AB, CR7GY, 7IT, CR9AH, DU, F18's, AB, AC, AD, AF, FM7WD, JA1AQ, IRC, KH6PM, KR6LL, 1G, KS, VSI, 2, 6AE, 6CL, 6CG, 9AS, 9AP, VU2, ZS8D and that pile-up producer ZC5VS. Rx is an AR77 with a long wire.

J. Whittington (Worthing) had the bad luck to blow the valves in his 1224A receiver, and so is denied the use of the three LF bands. However, John has been doing himself proud on 21 and 20 and is still happy!

His CW best were KL7, KH6JJ, CE4BX, JA3AC, 3AQ (1750) and KR6LL (1730). Phone produced some good new ones, KB6AQ (Canton Island) being particularly hot (0800-0900, three days in a row). 155G (Somalia), FM7WO, XE2KW, VP7NS, TG9RB, ZP5CO, 5CQ, CE1BO, M1BA (!) HP3DA and LB8YB/OX complete the picture.

R. Balister (Croxley Green) thinks Dx has increased tremendously. His O-V-I has been dealing with strong signals from all parts of the globe, VK being a notable exception.

On CW, Roger heard AP2N, CE3CD, CR6AI, F18AB, AC, FQ8AB, KA7GY, KH6ES (a new one), UA9KOG, UG6KAA, VO1D, VS2DF, 2DL, 9AP, lots of Middle East and South American and the juicy ZC5VS. Phone came through from KL7's ADR, AFR, MD5WA, SU1MR and VQ4ERR.

D. E. Nunn (Hove) wielded his R1155 to the tune of CR6AC, CS3AC, EA9AT, 9AX, HZ1AB, M1B, MP4KAC, OA4AI, ST2AC, VP9BE, 9G, SU1MR on phone, with LUIDA and some PYs on CW.

C. J. Goddard (Warwick), armed with a new S640, pulled in some new ones. Phone examples—CO2WV, CT3AF, OQØDZ, SU1MR, SVØWG (Rhodes) VS1AG, VQ2DT, 3DY, 4AY, 5CB, VP6, ZD1BR and ZD2RRW. CW examples—DU1GT, FF8, KP4, LUØAAW (maritime, is this one), MP4BBD, 4BBL, VS9AD, 9AP (Aden) and a goodly ZS9D (1830).

B. J. C. Brown (Derby) mentions the transition from "wintery" to "summery" conditions. He finds Africa rather difficult. (We agree there, too), but Dx otherwise quite interesting.

New phone catches were HRISO, VP5SC, VP7NS, KH6IJ, 6OR (0730) and YS1MS. Also netted were CE3CZ, HB1AG/HE (HB9AG taking a busman's holiday), HC1HM, HP3FL, KG6ADY, KL7, VK3FA (0715), ZD4BF and ZL2BE. On CW, Bernard got LU8EN, KR610 (1300), UG6KAA and VE8AV (0700).

V. Doidge (Callington) logged 79 C on phone in the past month, including CP5EE, I5US, SVØWG, VS6CL, VS7GV, VP2GX (all new ones), CE2CC, CO2MF, CX2CO, HI6EC, MP4KAG, TG9ID, VS1EG, VK3ANH, VP3LF, 4LL, 5AK, 7NS, 9BE, ZD4 and ZP5. Some good stuff there, and all on a two-valver.

R. Winters (Melton Mowbray) has been experimenting with vertical offshoots to his 80-ft. long wire. Still minus that elusive VK (which we'll lay a small bet he's hooked by now), Richard derived consolation from the voices of CR6AC, DU1RS, EA6AP, 6AT, 9AT, G3AAT/OX, HP1EP, 3FL, KA2WW (1900), KR6LL (5 and 7 at 1800), KG6ABI, MP4KAC, OQØDZ, PX1C (!), SVØWG/SV5, VU2UA, VS1, 2, 7, DU7SV, Y12AM, ZS6, lots of Central and South Americans and the suspect ZA1F. This latter, also M1BA, are queried, too, by B. J. C. Brown. We have no definite "gen" on either of these gentlemen, but will be more than surprised should either one turn out to be where he says.

G. Curtis (South Harrow) has tried a pre-selector in front of his receiver, but finds little improvement. (We heard a W3 not so long ago, who was using a Collins 75A2 with a preselector !)

G.C. remarks on the terrific bursts of good conditions giving good but not really rare Dx. As an example, he mentions KA2HQ, 3JV, KR6IG, UAØSK, VE7GI, 8MA, 8AW, VS9AP, W7CIM and YS1O. (Who does QSL, too).

P. Hunt (Ellistown) listened for only two weeks, owing to the "arrival" of a new shack, now in full use.

Phone for Peter meant YV5AB, HH2CL, CR6AC, 6CB, VS1EG, VS6CL, VK2AEK (0500), KZ5AF and PJ2AI.

Bill Hardie (Harwick) has also been short of "air" time, but came up with CR6AC,

DU7SV, EAØBG, KA7LJ, KL7, KH6IJ, 6OR, KR6LL, LZ9HS (?), MD5WA, MI3US, OQØDZ, VK3AM, 3MJ, 3XR, YK 1AJ, ZD2RRW, ZL2BE and the aforementioned ZA1F.

Bill is up to 77 countries this year and hopes to make it the even century before the end of June !

J. Corbett (Birmingham) presses on as much as limited time allows (we apologise for calling him "Curtis" last month. The signature really foxed us !)

On phone, he pulled in LX1JW, Y13WH, VQ4, ZD4JB, SU1MR, ZS6TE, MHONB (an aircraft, flying over Oxford), CS3AC, OQ5FM, HRISO, CO8MP, VP9BI, LU9AF, VS7PW and VQ5AU.

H. Lee (Oslo) finds the band much livelier and snagged DU1AL, EA6AR, FI8AC, HS1VA, KA2AF, 6RU, KL7ASR, KZIKAB, OY2Z, VS7WA, XE3BD, YN1WC and a mysterious MV5J, all on phone. The "MV5" called "CQ" at intervals for half an hour, but was ignored !

Henry wonders about the "KA" calls which are, of course issued to American forces in Japan.

During April, he received cards from the Isles of Man, Orkney, Shetlands, Arran, Anglesey, Wight, Balearic and Channel !

G. C. Allen (Thornton Heath) heard lots of Dx as usual, and singles out on the key DU1FC, 3JS, KA1AC, 2OL, WØYDZ/KG6, KR6IG, CR9AF, 9AH and ZC5VS (picking G3ATU out of the horde !).

R. J. Holliman (Cambridge) still uses an eight-valve superhet and 50-ft. long wire, which accounted for CR6AT, CT2AD, KL7ADR, HZ1AB, VP4TH, KP4, ZD4BK, VS6CL and OQØDZ.

R.J.H. had a week's holiday on the Norfolk coast. He took the receiver along and on a very low aerial, hooked SVØWG and a PY7.

R. Goodman (Edgware) continues to hear good Dx on his new receiver, but is puzzled by the complete absence of Russian phone stations. He wonders if they talk English, and thereby puts his finger on the main snag. Now that they are talking "inside Russia" to a very large extent, even the few who do talk English would not, presumably, do so. Additionally, phone activity appears to be slight. The way to hear 'em is to listen on Code.

Despite this hiatus in the "R.G." log, we should say Ron is quite happy at having achieved no less than 15 new ones on the band. These are KZ5CH, KH6IJ KR6RC (1800), YK1AJ (0800), ST2, VS1EG, VS2UW, 7DR, 15SG, FQ8AK (2200), M1BA (?), VP7NS, HI6EC, CX1AX (0840) and a humble EI. In addition, CR4AN (2100), DU, HR1KS, VP4TH, 5AO, 9BE, ZD2, ZL and ZS8D, all on phone.

P. M. Crawford (Darlington) is "running in" the new S750, which receiver pleases him considerably. His phone offerings are CP2AK, 2AL, CE, CO, EL2Z, 6A and 9A, HH10N, HK1FE, HC1FG, KA3RR, SVØWG, VS6EG, 7SG, VK and lots of South and Central America. FB8BB, 8BN, VS6AR, 9AP were on key.

J. A. Stringer (Holywood, N.I.) took odd moments from exam work and tracked down VP8AP (QSL via W6EFV), KZ5DC, HC1JW, VQ5AU, DU, VE5OC and VK on CW. Rx is an O-V-1 with an indoor doublet.

John was unlucky in missing a C3 (Formosa), blotted out on phone by a KL7.

D. L. McLean (Yeovil) is pleased with the way the band is shaping. His latest are FF8GP, G3AAT/OX, KH6OR, KL7AFI, OA4B, OQØDZ, VP5AK, VS7ES, ZD4BK and much more routine Dx.

Don gives us the latest from G3CMH (Yeovil ARC), now using 150 watts and working VO1AN and some Ws on CW and FA9, KV4AQ, 3V8AN and W2OJ/VO1 on phone.

N. C. Smith (Petts Wood) hears masses of stuff as usual. He has added a VRL250 receiver to his station gear and is satisfied with its potentialities. However, several improvements are in mind and Norman would be pleased to hear from anyone having alignment "gen" on the receiver.

He singles out phones DU1AL, 7SV, EL6A, FI8AC, OQØAV, ØDZ, ST2AC, VP5BF (Turks Islands), YN4CB, ZP5CF (0630), SVØWG and the mouth-watering KB6AQ (0940) and ZM6AA (0900), plus CW users CR5AA, 9AH (1650), FI8AD, KF3AA (still floating around), KB6AQ, KA2MH, KL7AQH (2230), KR6IG, +6LL, U18AE, VP8AK, VU2 and three more mouth-waterers, VR2CG (0830), ZK2AA (0645) and ZC5VS (1700).

A flash from Norman tells of ZK2AA on phone (0615-0730), audible through a mass of VK and KL7 and working G's. Nice work.

H. J. Hill (Whitley Bay) has been keeping his ear to the ground, so to speak, and his total phone score has reached 154. His latest catch, XE2KW, gave him a new zone, too. The XE was calling "CQ Europe" at 2230 and having no luck. G3ATU, happily chatting to a colleague a mile away, was oblivious to these goings on. Tut, tut.

Other good Dx from H.J.H. was KR6AC (1720), OA1C, VS6CL, KG6AA (S7 to 8-1300), SVØWG, a VK1 with a terrific flutter, heard at the unusual time of 2130, VP5AR, HH4MB, VP2GX (Grenada), VQ3DY, CR4AI, MI3US and an unusual one, HS3DM. FK8AA and FC9QV (Corsica-ex F9QV/FC), both got away.

Harry tells us that HZ1MY, now departed

from HZ-Land, sold his gear to one of the HZ Princes.

Further "gen" is of JY1XY, heard over ODSAO. He plans to operate from YA3XY, phone and CW, during July. 3A2AW will have been on when you read this and if you need Monaco, we hope you hooked him.

ZC3AA is expected to fire up from Christmas Island any time at all and FM7MY will commence operations in 1954, which does give a little advance warning!

A certain CE2, well received over here, was heard to admit to using a pair of 304TLs, modulated by parallel push-pull 810s. "He comes in so clearly," cracks H.J.H., "I can almost hear the water splashing through the 304TLs!"

We welcome several new reports to these columns, the first being R. Nixon (Stockport) who concentrates on 20 Phone. He has been on since 1949 and thinks last winter the worst ever for Dx. Like the rest of us, he is glad things are looking up, and recent catches include AP2L, DU, FQ8AJ, HH2L, 3FL, HK2DZ, HP, KA3AC, 4MC, 7LJ, KZ5AF, OA4AD, ST2AC, TG9RB, 9RT, VK6BF, VS1, 2, three good pieces of Dx in FI8AC, NEINMC and XZ2ST, plus the previously-discussed ZA1F.

R.N. mentions ZL3BE's colossal signal, often on an otherwise dead band. The secret is a vast Vee, with nine wavelengths a leg.

Roy Patrick (Oldham) is no stranger to the BC part of the short wave spectrum, as readers of this magazine know. Roy has started to devote a little time to the amateur bands and, around 2200, picked up phone from HP1BR, 1LA, KG4AF, KP4 and LU.

M. E. S. Birch (Munster, BOAR 12), using an S740, reports CE2CC, CO2OM and CR6AI on phone, with HH2FL, KF3AA, FQ8AP, VP8AP and VP9AS on the key. He is puzzled by FKS8AA (French Forces in Austria).

P. J. Leverington (Lincoln) is a newcomer to the game. Using a BC super, he picked up TA2EFZ, SU1MR, ZL1BY, ZD4BF, KL7FR and lots of short-skip.

K. Lovett (Maidenhead) found CO8MB, DU7SV, FF8AP, HH3, ST2AC, VP4LL, VS6CG, 7ES, YV5AO and ZP5CF. The Rx is an R1155.

D. T. Wright (Forest Hill) is another 1155 user. The aerial is an 80-ft. long wire, only 15 ft. high and the combination produced VQ4ERR, SU1MR, SVØWG, KV4AQ and numerous Ws.

A. P. Allchin (Clacton-on-Sea), with a choice of three long wires and a Murphy BC set (an S640 or 740 is in mind, though), collected three brand-new countries in CE2FD, HH and LU. Other phone Dx was from JA1AC, DU, VS1EG, 1EU, 2BS, VQ6VM ? (1740), PJ and FQ8. The 1953 Phone score is 97C-32Z.

G3AJP (Fritton, Norfolk) sends an interesting account of his activities.

At the moment, Johnnie is using a small Lazy-H array, fed with 300 ohm ribbon. He remarks that he is limited to weekend operation (when everyone else is on !) and says he can't offer any of the VR1, KP6, ZD8 stuff (tell us of anyone who can !), but on CW he did work VS9AP, VS9AE, CR9AH and KG4AF, four good ones.

'AJP will welcome reports from outside Europe on his 14/21 Mc Phone or CW. He remarks on ZD9AA, more elusive than ever, after over two years of effort, and vows if he ever snags him, he will present any SWL with a year's sub to the "Radio Amateur !" (We used to feel that a way about HI6 and ZS7, but after four or five years, we're plain resigned. They'll come, if we live long enough).

G3HSL (West Hartlepool) is piling up his CW total with KF3AA, VS2DF, W7AH (Ariz), VK4SF, DU1CE, CR9AH, VS6CJ, OY2Z, SV0WG and HE.

G3ATU (Roker) managed ZC5VS (1730), W7HYW (Wyo), 7PLY (Wyo), 7DPK (Montana), 7FBD (Idaho) and W0COC (Colo), all around 1730 and heard CP3CP (2300-T9CC, bad drift). VR7BG was being called by an OQ5 and an IS1 (1700), but we have our doubts about that one.

The Twenty-One Mc Band

Very much livlier recently, with better conditions attracting increased activity.

J. Whittington mentions the band as his star performer. Phone openings brought in ZD9AA, CP5EK (1915), ZP5DC, VP6CJ, PZ1RM (1900), ZD1SW (1730), VQ4, HP3, KG4, VP9, KZ5, VE and all W districts except six and seven.

CW, where activity is much slighter, netted John YU, SP, KP4, K V4, MP4BBD (1730) and some Ws, bringing the band score to 54C-20Z.

R. Balister had Phones TA2EFA, VQ4, KZ5 and HP3FL and CW FF8AG, LU, PY and KZ5.

B. J. C. Brown got three new ones, CX2IY, ZD1SW and ZD9AA, also EA9AR, VQ2DT, VP6PV (the only chap we know who can send his call sign backwards and still be right !), ZBI and lots of South Americans.

Bernard mentions the Phone SLP, which turned out a waste of time. Even the VQ4s were almost unreadable.

G. C. Allen notched some hot ones on CW. CE3AG, (still at home—the Easter Island trip has been delayed some more), VS9AP, VK9GW, CR7AF, VU2CQ and XE1PJ, show how activity is increasing.

N. C. Smith now has 93C on the band. Excellent going. Norman should be past his century any time at all.

The latest Phone is CE3CZ, CR4AI, EA8AX, HP3FL, M13, OQ5 and Ø, TI2RC, VQ5CB, ZD1SW, ZS6.

A good one on CW was ZS3BC, sending slowly and probably a newcomer.

R. Winters says there is stacks of activity on the band every day, for the digging thereof ! "A kind and truly Dx band," says Richard, after listening to such as ZD9AA, ZD1SW, VQ2DT, ZC4, PY5UG, MD5EB and several VQ4s.

Ron Goodman nicked five new ones, W, SU, 5A1, ZBI and EA9, with FF8CN, VP6, VQ2 for good measure, making him 34C-17Z.

D. L. McLean has checked the skip and finds the present opening time about 0900, with signals from Africa and the Middle East. Later South Americans appear and are replaced by Central Americans. The band often remains open until as late as 2300 GMT.

Don's latest Phone is from CE3CZ, CR4AP, CX1GG, FF8, HC1FG, 1FS, HK4FV, KG4, VQ2, 4, 5CB, W7PKF (a rare one, these days), ZD9AA, ZD1SW, 4X4 and ZP's 5BY, 5DC and 5FI. LU's are active, but not yet permitted the use of Phone.

G3CMH worked one, LU3DAB and KZ5IL. On Phone, some good reports have been received, among others, from CE3CZ, CN2AP, HC1FS, KG4AJ, OD5, PY, VQ5CB, 4 and 5A2CA (Benghazi).

G3AJP netted Phone QSOs with VS1AY, CE3AB and PJ2AD, with some lesser lights hooked on the key. We'd say the Lazy H is doing its job quite well.

The Forty Metre Tale

The hardened types continue to wring lots of interest out of this tantalising welter of queer noises. CW is what really pays dividends on 40. Read on and you'll see what we mean.

G. C. Allen's CW log, including PZ1WX, PJ2AJ, CE7AA, YV5DE, HK7HM, OA4ED, TI2PZ, VP5SC, CR4AG, Y11TR, VP8AJ, 8AP, HH2ME, ST2AR, VS7XG, ZE3JP, ZS9I and FD8CL, ZL and VK, should cause considerable eye-popping.

N. C. Smith, too, was in the thick of it as usual. His pickings include CE3DZ, HRIAT, KG4AU, KZ5BE, M13SL, OA4, UA9CC, VS9AP, VP4LZ, 6AL, VP2SH (2340), VS9AP, W5LP (Texas), YV and ZL.

R. Balister spent a short time on the band and logged EA9AP, Y12AM, VOID and, last but not least, VK9AU, calling VS9AS, then a DL and finally "CQ," all to no avail. The time however—1430—casts acerta in doubt as to his "goodness."

D. E. Nunn heard several Ws on the key and SP5KAG on the mike.

B. J. C. Brown had a good early morning session which gave him five ZLs and VP8AP (1550), plus W4LZF (0400).

R. Goodman is hearing the Dx at last. CR4, CT2, LU, EA8 and FF8 were logged.

P. M. Crawford hears lots of ZLs and singles out ZL's 2OQ, MM, Q1, 4HJ and 4HP as consistent signals. An unusual one who

also has been putting in a fine signal was KL7AFR (0700).

J. A. Stringer's O-V-1 got him CW from LU8EE and CR5AE.

M. E. S. Birch added to his score with UP2KBA, UA9CF, UQ2AW, UB5, UC2KAB (all 0400) and CO7HS, LU and VP8AP (0300).

The Eighty Metre Band

Despite commercials, sundry strange noises and the advent of Summer, Dx is still seeping through in the wee small hours.

N. C. Smith listened to KP4AF, LU5LU, PY5EK, VS9AP, W and ZL, all on key.

G. C. Allen dug deep into the noise and emerged with ZS2A, 2BC and 2HI, VP8AP, LU4ZI (Deception Islands), YV5DE, 5FH, VQ4CW, YN1AA, TI2PZ, FM7WD and sundry ZLs

P. M. Crawford hands a bouquet to DL2PQ who has been doing a terrific job on Phone with a maximum input of just one watt! On occasion, the DL was S9 plus, which shows just what can be done.

H. J. Hill is anxious to fix a sked with any DL station in the town of Oldenburg. Information on any such station will be much appreciated and details of call, frequency, GMT heard, etc., would all help.

P. J. Logan (Stourbridge) is mainly on 80 Phone, using a tiny O-V-O receiver. He finds Dx difficult to pull in, but did manage VO3B and a W1 plus IIADB and lots of PAO and OZ.

One-Sixty Metres

We have some interesting comments on the doings of the past winter and a few reports of Dx which is *still* creeping through.

G. C. Allen remarks that the band just won't lie down. On April 12th, W's 1AW, 2GGL, 2ZUW, 4BZE, 4HQH and 9CZT were there from 0500 to 0535.

Lots of QSLs are in, including one from WØNWX who, for some reason, had been suspected as a "Non-QSL'er," but the most interesting one was from W4TUP (Tenn.), who had been playing about with his Tx, trying various coils. He was using 20 watts to a vertical of unspecified length and thought he was on 40!! As George remarks, "When one thinks of the great pains some people took. . . !

W9FIM passed on the word that he had QSO's with both VP1AJ and XE1A (1877 kcs), so there are two beauties to look for next season. VS9AP says he will be on the band in the next few weeks and it should be possible to contact him, even so late in the year.

G.C.A. learns that ZS3K heard W1BB, but '1BB was unable to hear the ZS, which was very hard luck.

J. L. Hall (Croydon) heard W2GGL and W4HQH on April 12th and on April 19th he heard the W2 again and VE1EA in addition.

Lots of QSLs are rolling in (including one from WØNWX!).

Re P. M. White's queried FK8AA, on 3610 Phone. J.L.H. heard FKS8AA around there on the same date and time, which seems to settle that one.

John mentions VS9AP/VQ6, heard on 14 Mcs CW recently at 0530. Very interesting and quite genuine, we imagine. Sounds like Van of '9AP on a little trip.

N. C. Smith logged VE1EA and W1LYV and is also in receipt of sundry QSLs, including a particularly hot one—WØAPF, heard on Phone. He uses 200 watts to a 268-ft. long wire and when Norman heard him, he was calling W8GDQ and was being QRM'ed by KV4BB, who was also on Phone!

Leaving Top Band for a moment, we must record N.C.S.'s 1953 score, which has soared to the impressive total of 170 countries in 38 zones!

GM3IGW (Alloa), whose Top Band activities are well-known, sends along some interesting "gen" which reached us in the nick of time!

Mike says he writes more as a listener than as a "ticket-holder," having always been an ardent Dx fan and Staunch SWL supporter. Consequently, his reports hereunder refer to stations heard, unless noted to the contrary.

The Top Band score is 78 countries worked, with some 84 heard. GM3BNX, noted last month by Bill Hope as being in Roxburgh, has moved and is now living in Coldstream, Berwickshire!

On the Dx side, '3IGW has heard all W districts except six and seven, plus VE, KP4, KV4 and VP9 and has worked MF2, ZC4, etc. He mentions OH8NV/2 and an unusual one—CTILA, as being active on Top.

Moving to the other bands; 80, OY3PF was worked on A3; On 40, VP8AW (South Shetlands), VQ2GW, UF6 and UG6 were heard on CW, while on 20, Mike singles out star performers HR1KS, PJ2CA, KV4BB and VP2AJ on Phone. It is worth noting that the VP2 (whose QSL we have) uses only nine or ten watts. He lives in Nelson's old Naval Dockyard in Antigua and his long wire aerial is strung between his shack and the top of the mainmast of a yacht moored nearby.

Top Band Changes

As from May 1st, 1953, new regulations governing use of the band came into force.

For amateur operation, the band now comprises 1800 to 2000 kcs only, and this is subject to strict non-interference with other services, including several new stations, using the same band of frequencies. It behoves all of us in these circumstances to take every care, especially at night time. Check that input. Ten watts is the limit.

C. L. Bradbrook (Alton) sends some late "gen," which fortunately just beat the deadline. (Contd. on p. 233)

ON THE HIGHER FREQUENCIES

Monthly Notes and News

by H. E. SMITH, G6UH

Conditions certainly favoured the RSGB Two Metre Contest on the week-end of May 2nd, and 3rd. Activity in general was high, several stations passing the century, and many more approaching it.

G3BEX/P, operating at Devils Dyke, Near Brighton, had worked some 80 stations by early on the afternoon of the 3rd, and although he has not confirmed it to us, he probably worked well over a hundred by the time the Contest had finished. Several of the better-known Midland stations, and of course, G5YV in the North, were audible in the South for most of the day on the Sunday. In Hayes, we heard our usual "Contest QSO" station, G5MR (Hythe, Kent) but this time we were unable to raise him, thus bringing to an end an almost unbroken succession of Contest QSOs with Vernon. Many of the "Big guns" of the South were in action during the Contest and it really was most heartening to hear them on the air again. It shows that the interest is still present anyway, and that is the main thing.

In this issue we present the first batch of QRGs which have been made available to us by G3BLP. When complete, this list will be one of the most comprehensive and accurate QRG lists ever published, and we are sure that transmitters and listeners alike, will find it an invaluable aid in searching for stations. When you have finished reading copy each month, it may be a good idea to cut out the QRG lists and paste them into a folder by the top of the page (in case there is anything interesting on the back), they will then be readily accessible when required.

Notes and News from Ireland

Most of the Irish news this month comes from the latest edition of the *Upper Spectrum*, which has just been received from Ei2W.

The VHF Research Society of Ireland has now been re-named. The new title is "The International VHF Society" and Ei2W tells us that by the end of the year, the membership will have passed the 300 mark! It is most cheering to hear of the magnificent support being given to this Society and to know that

the efforts of Harry Wilson Ei2W are being so well rewarded. Under his editorship, the *Upper Spectrum* is rapidly going from strength to strength. Exclusively for the VHF operator, it is crammed full of highly interesting "gen" and we urge everyone to make an effort to join the International VHF Society without delay. Membership dues are 10/-, per year, and remittances should be sent to The International VHF Society, 97 St. Stephens Green, Dublin, stating your full name and address, Call sign (if any), and indicating whether you belong to any other societies.

Transatlantic Tests in July

Arrangements have now been completed between the International VHF Society and the ARRL for two metre tests to take place from July 4th, to 12th, next. Ei2W has obtained sanction from the Department of Posts and Telegraphs to operate a 300 watt station at Kilkee, Co. Clare, during the period. Many American stations are expected to take part, and bulletins will be issued by the official ARRL station W1AW.

Full details will appear in the June and July issues of QST. The frequency of the Irish station will be 144200 Mcs. It is an exciting thought, that if contact with a W station is established, the World two metre distance record will be broken by over 1,000 miles!

We ask all VHF operators and listeners to make a special effort of concentrated listening during these tests. There is no doubt that some of the American stations will be using very high power for the occasion, and should conditions be right, there is a good chance that signals may be heard in this country.

Recent Activity

Ei2W commenced operations at the new location 760 ft. above sea level on May 3rd. Conditions were good for North/South working, and several new Gi stations were contacted including Gi5AJ (Bangor,) Gi31JM (Lisbum) and Gi3HNM (Belfast). Activity in Northern Ireland was the best heard so far, with eight stations on the air.

Ei6A (Wicklow) has secured the inter-Irish record by working Gi5AJ (140 miles).

Ei2W passes us the exclusive information that Ei2A (Navan, Co. Meath) will be on the band as from the second week in May, operating on 145899 Mcs with a three-element Yagi and an SCR522. Situated some 30 miles

**SPECIAL NOTE REGARDING REPORTS
COVERING JUNE ACTIVITY**
OWING TO HOLIDAYS WE SHOULD
LIKE ALL REPORTS INTENDED FOR
THE AUGUST ISSUE TO REACH US BY
JUNE 30TH, AT THE LATEST.
WOULD ALL CONTRIBUTORS PLEASE
MAKE A NOTE OF THIS AND TRY TO
GET YOUR REPORT IN THE POST BY
JUNE 29TH—Thanks a lot.

North-east of Dublin, Ei2A is a new Irish county for G stations to look for.

(As we are rather pushed for space in this issue we shall leave other Irish notes over till next month, but before going on to the activity in G-land we should like to point out to Gi and Ei stations who may not be members of the International VHF Society that copies of the *Upper Spectrum* may be obtained at 2/- each, through Eason & Son, Dublin and Belfast. For the benefit of G readers, it is also on sale in London shops of W. H. Smith & Son Ltd.)

Transmitter Reports

G5YV (Leeds) sent his report just too late to be published in the May issue. It is worth recording however, that Harold did some great work during March. Apart from the big opening early in the month, G5YV worked eight DL stations, six PAs and five ONs on the 17th, and between the 21st and 23rd, 13 Fs, eight DLs, seven ONs, three PAs, and SM7BE. On 70 cms, G5YV has had reports of 559 from G2FKZ and 569 from G3APY, but as his converter is not yet 100 per cent, no QSO has yet been made. The input at the time of receiving the above reports was 5.7 watts. Harold says that G6NB is the most reliable signal from the South now that he has moved to the new QTH.

G8LN (Plumstead, London) also just missed the boat last time. G8LN makes some interesting comments on the 832 valve. While this valve is an easy one to handle, says Bill, no two appear to be alike in characteristics, and the amount of drive employed is a critical feature of their behaviour. Cutting down the screen volts to a minimum seems to be an advantage when using 15 watts input, and the screen resistor can be as high as 150k ohms. Grid bias for 250 volts anode operation can be as low as 10 to 20 volts, i.e. 5k to 20k ohms resistor. G8LN makes another plea for the more frequent use of CW by phone stations. Many weak carriers are heard which cannot be resolved, particularly during poor conditions.

G3DIV (Eastbourne, Sussex) has been having a spot of trouble with the beam again. The salt air plays havoc with the dural elements and the copper phasing wires. A new six-element stack is under construction, and this time, all copper, and suitably treated to withstand the atmospheric conditions. The outstanding signal during the late March opening was DL3VJ/P who was a steady S9 phone signal every time the receiver was switched on, and a QSO was made with him for six days running. Some of the best QSOs were with SM6ANR and SM6QP, both at Gothenburg (approximately 680 miles). SM6BSW was also contacted at 559 but was lost before a report was obtained from him. Other stations worked during the period were SM7BE, OZ2FR, 2IZ, 5AA and 5HV.

A new QTH is being tried out at G3DIV with a much better clearance to the North. Already several stations have been worked who had never even been heard before.

G6NB (Brill, Bucks) is now in full swing from the new QTH. Although most reports on his signals speak of increases in QRK. Bill is having a little trouble with the London direction. He thinks this will be improved when he is able to increase the height of the beam.

The 4 × 4 × 4 beam is still in use and much DX has been worked, including eight PAs, six DLs, and many more as detailed in the Calls heard and worked section.

G3HBW (Wembley, Middx.) has not been too active lately as he is re-building the aerial system. It is hoped to increase the height from 35 to 50 ft. and thus, overcome some of the local screening to the North-west and North-east. While the new beam is under construction, G3HBW has been using a dipole at 50 ft., and has worked F8AA, F8NW and G5YV. Several PAs have been heard, and on April 20th, ON4BZ was heard at 569 on a dipole at 20 ft.

G3GBO (Denham, Bucks.) reports that in spite of the somewhat lower activity after the good spells, he has managed to work six more new stations, G2CN (Welwyn, Herts) 144780 Mcs, G3EOH (Enfield, Middx.), G8SK, also of Enfield and G3DBM (South Croydon), G3FUM (Kingsclere) and G3FIJ (Colchester, Essex) 145050 Mcs, thus, making the all-time score of 370 different stations worked on two metres, with a QSL return of over 250 (of the order of 70 per cent). The new converter using a 6AK5/12AT7 in cascade is out-performing the old one, and Don finds that "spot on" neutralising of the first stage makes an improvement of one or two in the noise figure. His early morning schedule with G3YH (145320) and G5LK (144810) has been fruitful on several occasions. Don has been making a study of the barometer/temperature/humidity theory over a long period and finds that the temperature/humidity figures are by far the most important. We hope to include some further observations on this in an early issue.

G3WW (Wimblington, Cambs.) sends his usual detailed report. Over 100 stations were worked in the RSGB Contest, and many others were called without result. Among those taking the Contest seriously and always "there," were G2XV, G3BLP, G5YV, Gw5MA/P and G6NB. G3WW speaks of certain stations operating outside of their correct Zone during the Contest and thus obtaining the benefit of a contact with stations calling CQ-QLF, and at the same time, causing bad QRM on some of the Northern stations.

(With the terrific QRM that can be present during Contests, especially if conditions are good, we suggest that future Contests should contain rules to prohibit entrants operating

outside of their correct zone. A contest only lasts for one week-end as a rule, and it is a great pity that the few stations who operate outside of their correct zone, because they do not agree with the Band Plan, do not realise that they are spoiling the fun for many fellow operators. Its not so important outside of contest times, but is hardly playing the game when there is a contest on). G3WW includes more details of his April activity, but our limited space this month forces us to omit much of it. (We shall be glad when the Editor allows us another two pages or so ! Hi.)

G3AJP (Fritton, Nr. Gt. Yarmouth) has not been very active of late, but sends us news of 70 cms activity in Norwich. **G4KO** of Norwich is working regularly on the band, and running schedules with **G4PV** of Lowestoft. Other Norwich stations are getting gear together for 70 cms, and some are already working over short distances. **G3CFK** of Yarmouth is now active once again on 144 Mcs, and is building a converter for 70 cms.

G3INU (Clacton, Essex) has been doing a lot of listening, as he has not yet completed the Tx for 144. Using a six-element stack, fixed in a NW/SE position, Reg has heard a considerable amount of Dx. (Calls appear in appropriate section). His first DL was heard on May 3rd, and on this same day several PAs and F stations were heard. **G5YV** and **G3WW** are consistent signals. (We hope it will not be long before Reg gets his transmitter working. Judging by the calls he is hearing, he should have no trouble in raising the Dx stations).

G2DDD (Littlehampton, Sussex) has worked the following new stations, **G2XV**, **G3ANB**, **FUH**, **GVF**, **G4JJ/P**, **G4RO**, **G5DS** and **G5MA/P** (at Kithurst Hill, Sussex and at Walbury Hill, Berks.) **G2DDD** who is at sea level behind the South Downs reports that the most consistent signals from the North are **G2HDZ**, **G3GBO**, **G5NF** and **G8DV/A**. Most of these stations are using stacked arrays, and Eric is planning to erect a stack in the very near future in an attempt to improve his signal strength in the London area. **G2DDD** in co-operation with **G2DSP** have constructed an 832 tripler for 420 Mcs, plus a converter, and tests between Littlehampton and Bognor Regis are now being made. It would appear from remarks overheard on the air, that some building or re-building for 420 Mcs is going on in the Portsmouth and Southampton area. During April the two metre conditions on the South coast were rather flat.

G3ANB (Brightlingsea, Essex) sends us another detailed extract from his Log. The most prominent call sign appearing in the Log seems to be **PE-I-PL**. No less than 11 QSOs on sked, over a four-week period ! Bill sends a few interesting facts regarding this Dutch station. **PE-I-PL** operates on exactly 144 Mcs, and seems to be on the air regularly from 1300

to 1400 GMT daily. The station belongs to a scientific laboratory at the Hague and is operated by **PAØBL**, **PAØCW**, and the chief, also an amateur and an old timer.

(**PE-I-PL** on 70 cms). (A "stop press" from **G3ANB** states that **PE-I-PL** is now operating on 70 cms daily, beamed on England from 0830 till 0845 BST. **QRG** is 435 Mcs, and his receiver covers from 430 to 436. He will be glad to arrange schedules with any G station.)

We only wish we had the space to print the whole of the extract from **G3ANB's** Log, for it shows just what can be done from a QTH only 50 ft. above sea level, situated in a comparatively remote part of the country. One final comment which we simply must print. **G3ANB** says it is amusing to hear some stations complaining, usually on phone, that the "band is dead," when he has just completed a QSO of 150 miles or so, using the "much-despised morse key" (being an absolute diehard key-thumper, your conductor could not agree more. Dozens of Dx QSOs are missed or lost because of stations failing to resort to CW. Still more Dx phone stations are audible only as a carrier, and they just *will not* sign on the key !)

G5ML (Coventry, Warks.) took a very active part in the RSGB Contest during the week-end of May 2nd, and 3rd, and a total of 83 stations were worked, most of them over 75 miles. The bag of new contacts included, **G2CZS**, **DUV**, **FCL**, **HCIJ/P**, **HQ/P**, **G3AB**, **APP,BEX/P**, **CNY**, **DIV**, **DVK**, **EJO**, **EPW**, **FMO**, **GOP/P**, **HWJ**, **IRA**, **ISA**, **G4JJ/P**, **G6LI**, **G8VN**, **VR**. Fred has now worked 44 countries on two metres. The latest additions being Durham (**G2FO**), Northumberland (**G310E**) Monmouth and Pembroke (**Gw5MA/P**). (How that man **G5MA** gets around ! !)

G5ML has a **G2DD C/C** converter going on 70 cms and has heard **G3BKQ** at 21 miles and **G3HAZ** at 19 miles, using the two metre stack as a receiving aerial. A 32 element stack for 70 cms will be constructed in the near future, and Fred then hopes for some more distant contacts.

We do apologise for cutting down some of the very interesting reports this month, but we are sure that our reporters will understand that our space is so limited that to deal with them all in full, has now become virtually impossible. **Would all transmitting reporters please remember that June 30th is the final date for the next report. Thanks a million for all the support OMs.**

VHF Listener Section

We should like to open this section this Month by expressing our thanks to all listeners who have rallied round so well with their reports. It is most satisfactory to receive such splendid support, and you may rest assured that your reports and Calls Heard lists are highly appreciated, both by us, and by the transmitting

fraternity in general. Our Listener Award Scheme will be continued till further notice, and we have pleasure in making two further awards this month.

A 6J6 valve, complete with holder and screen, goes to **Jim Symes** of 62 Manor Road, Streetly, Staffs, who sends in an extremely-detailed report and a specimen copy of the report form which he sends to stations heard. As Jim uses a 6J6 mixer/oscillator, we are sure that he will find the award useful.

Another 6J6 is awarded to **A. W. Blandford** of 1 Biggin Avenue, Mitcham, Surrey, who, apart from sending an excellently-detailed Calls heard list, makes interesting observations on the weather and barometer relative to Dx reception (G3GBO would perhaps like to know that most of A. W. Blandford's comments tie up exactly with his own).

Several other listeners sent in reports of very great interest, and we only wish we could give them all something in return. One of these months we shall get really rash and shake everybody !! So watch this space !

Jim Symes (Streetly, Staffs) is shortly hoping to move to the London area from his QTH at 520 ft. above sea level ! We can only hope that he can find a really comparable QTH down here, and not experience that frustration of hearing no signals from the Midlands or the North, which occurs all too frequently in this area. Jim makes a regular study of temperature and barometer in relation to conditions, and says that the barometer dropped swiftly after the period of good Dx around April 16th from 29.7 to 29.3 and rose again to 29.6 heralding the good conditions on the 21st, and 22nd. As his tit-bit of the month, Jim presents an extract from a letter received from ON4UV, "I am now testing on 2350 Mcs—have three oscillators working well, and two 3-ft. Parabolic reflectors—I am possessed by Radio " Hi. (He must be !).

A. W. Blandford (Mitcham, Surrey) is now using a 6BQ7/6J6 combination in a cascade circuit and reports that results are very satisfactory. Eighty-nine stations in 25 counties were heard during the Contest week-end. An interesting point noticed recently is that when the conditions have been good, the barometer has been low and the weather bad. This fact is also noted by other stations, and seems quite contrary to the generally-accepted theory of a high barometer being synonymous with good conditions. The total of two metre stations heard now stands at 509, with counties still standing at 39. The aerial is a four-element Yagi at 30 ft. above ground, and the QTH is 35 ft. above sea level.

R. L. Bastin (Coventry, Warks), the well-known 2nd Op. and scribe at G5ML, has built the "Low noise High Gain Pre-amp," details of which were given by your conductor in a recent issue of this journal. Ray reports a

very low noise level and excellent results. Evidence of the performance is to be found in the Calls heard section, and over 100 calls were heard during the week-end of May 2nd and 3rd. An ON4BZ converter is being built, and Ray is going to compare the results with the present one. The new beam, a 24-element stack, is providing about an S point increase in all signals over the 4×4 Yagi.

M. McBrayne (Westcliffe-on-Sea, Essex) notes the openings to the Continent during April, with PAØFC as the star performer. By some odd chance ON4BZ does not appear in his Log, the first time for some eight months, although he was active and several G stations were heard in QSO with him. M. Mc.B. says that G3DAH is about to depart overseas and expects to be away for two years. He also sends a few more QRGs and we shall work these in when we get to the appropriate list. One to add to this month's list is G2CZS (Chelmsford, Essex) 144912 Mcs.

R. W. Russell (Southampton) found the conditions during April to be consistently bad. Reg also sends some observations on the weather, relative to conditions, and notes that the high pressure ridges during April did not bring the calm warm days when one could expect good conditions, but cold unstable air with high winds. With this weather, some Dx could be heard, but was subject to erratic fading, and stations appeared for a few minutes only, then vanished. Since there was no possibility of ducting or inversion, these signals must have been reflected from the turbulent air masses. Reg has also constructed the "G6UH Pre-amp" and says there is no doubt about its excellent performance. Tested against a 6J6 pre-amp by tuning in a weak signal and rotating the beam until the signal became unreadable, the new pre-amp was switched in, and it was possible to resolve the signal at S5. Reg is prepared to run listening schedules with London stations, in an effort to solve the "London effect" (when stations such as G3ANB are audible but nothing is heard from the London area).

Len Whitmill (Harrow Weald) found April conditions "not too good," except for the 21st and 22nd, when signals from the East and North were received at good strength. Several new stations have been logged recently, including G3GVL (Derby), G3MY/P (Sheffield) and G3EPW (Bury, Lancs). On 70 cms the activity has been practically nil, G2DD and a few locals have been on most evenings but there is nothing outstanding to report.

Don Hayter (Worthing, Sussex) is second Op. at G3IBY/A. During April the conditions seemed quite fair at times with practically no activity. On April 18th, and 25th, G5MA/P was heard from his locations in Sussex and Berks, and on May 2nd, from his Monmouth

THE RADIO AMATEUR

QTH. Notable calls heard during April include G3WW, G3AUS, G2BMZ, G4SA and G3DKZ. Don tells us that G3FEX will be operating as Gw3FEX/P in Caernarvon and Anglesey for two weeks from the last week in June. In a listening schedule with G3HWF (Yatesbury, Wilts), Don has only missed hearing him twice during the month (sked, Wed, Thur, Sat.).

QRG Section

This month we start from scratch again with our QRG lists. Due to the extreme kindness and co-operation of John Haydon G3BLP, who has given us access to his most complete frequency records, we are now able to publish the QRGs of some hundreds of VHF stations. Readers will realise that this list has been compiled by G3BLP over a very long period. Some stations therefore, will no longer be heard on the band, and others may have changed frequency since they were last logged. In general however, the lists will be as up to date as possible and should make the task of searching for any particular station a much easier one, especially for the newcomer and the listener. It should be noted that the frequencies are quoted to the nearest 5 kcs in most cases, but where the measurement is only to one decimal place, we are giving three places of decimals in order to avoid confusion. (i.e., Where say, 145255 is quoted, it can be taken that the frequency is accurate to within 5 kcs. Where 145400 is quoted, it is better to assume that the error may be somewhat greater than 5kcs.) Starting with the G2s, we shall proceed in alphabetical order right through. Here then, is the first batch.

Call sign	QTH	QRG (normal)	QRG when last heard
G2AAN/A	Wembley, Mx.	145060	same
G2ABN	Clapham, Lond.	145020	"
G2ADR	York.	144385	"
G2AJ	Biggin Hill, Kt.	145130	144975
G2AKM	Guildford, Sy.	145100	same
G2ANL	Leicester.	145045	"
G2ANT	Godalming, Sy.	145120	145235
G2AOK/A	Stow-on-Wold, Glos.	145250	same
G2AOL	Oxford, Kt.	145055	"
G2ATK	Birmingham	144640	"
G2AHP	Perivale, Middx.	145445	144820
G2AIQ	Cambridge.	144770	same
G2AFB	Elstree, Herts.	144730	"
G2APW	Oswestry, Salop.	145400	"
G2AIW	Twicken'm, Mx.	144985	"
G2ALN/A	Manchester.	144320	"
G2ASF	Coventry.	144020	"
G2AVQ	Handsworth, War.	144880	144375
G2AVR	Bexhill, Sx.	145530	145275
G2BFT	Solihull, War.	145310	same
G2BHW	Falmouth.	145505	"
G2BMZ	Torquay, Devon.	145485	{145170 145355}

G2BRH	Ilford, Essex.	145100	same
G2BTO/P	Nr. Bolton, Lan.	144350	"
G2BUJ	Swindon, Wilts.	145275	"
G2BVW	Rearsby, Leics.	145080	144210
G2BCB	Colchester (?)	145065	same
G2BAT	Falmouth.	145540	"
G2BM	Stevenage, Herts.	145330	"
G2BTY	Reading, Berks.	145000	"
G2CIW	Romford, Essex.	145200	"
G2COP	Lichfield, Staffs.	144410	144890
G2CPL	Lowestoft, Suff.	145650	144800
G2CPT	Goole, Yorks.	144275	same
G2CRD	Sunbury, Mx.	145085	"
G2CNT	Cambridge.	144165	"
G2CYN	Birkenhead, Ches.	144515	"
G2CBR	Ormskirk, Lancs. (?)	144570	"
G2CN	Welwyn, Herts.	144790	"
G2DCI	Speke, Lancs.	144300	"
G2DD	Stanmore, Mx.	145925	145405
G2DGB	Weymouth, Do't.	145445	same
G2DGO	Thames Ditton, Surrey.	144780	"
G2DJB	Torquay, Devon.	145485	"
G2DKH	Stanley, Co. Dur.	144210	"
G2DLJ	Derby.	144405	144380

(to be continued)

VHF ACTIVITY. (Calls Heard)

R. W. Russell (Southampton). (G6UH pre-amp) 100-150 miles :— G3ANB, WW, G5JO, ML, G6XY, Gc3EBK.

150-200 miles :— G8MW.

G3INU (Clacton, Essex). (6J6 RF, 9002 Mixer, 955 Osc.)

G2BCB, CZS, FNW, FQP, FZU, HOP, UQ, WJ, XV, G3ANB, AEP, BKQ, CC, DUK, EDD, FIJ, FJR, GDR, GMW, MY/P, WS, WW, G4AC, JJ/P, OT, G5BD, JO, ML, MR, RW, YV, G6LI, NB, G8AO/MM, MW, SY, Gw2ADZ. DLILB, 3QA. F3LQ, 8AA, 8NW. ON4BZ, HC, HN, LN, YB. PAØFC, HA, RK.

M. Mc.Brayne (Westcliffe-on-Sea. 6J6 Mixer 6J6 Osc.)

50-100 miles :— G2CN, HCG, XV, G3BEX/P, CGQ, DIV, DJX, IIR, WW, G5JO, NF, G6NB.

Over 100 miles :— G2HQ/P, G3BXQ, DO, FQP, MY/P, G5BD, YV, G6CI, G8MW. ON4HN, PAØFC, FP, LDG, PN, VLM, WO. L. A. Whitmill (Harrow Weald)

G2AHP, BMI, BMS, BTY, DUV, FNW, HDZ, HOP, UQ, WA, G3BKQ, BNC, CGQ, CVO, DO, EPW, FD, FSD, GBO, GHI, GVL, IIR, MI, MY/P, WW, G4AU, GT, KD, G5LK, NF, QL, G6AG, CH, RH, XH, G8DV/A, TB, ON4HN.

R. L. Bastin (Coventry). (G6UH pre-amp)

G2ACV, AIH, AIW, AOK/A, ATK, BTF, CZS, BMZ, DSP, DSW, DUV, DCI, FCL, FJR, FKZ, FNW, FQP, FTS, FZU, HCG, HCJ/P, HIF, HDZ, HOP, HQ/P, MV, OI,

WQ, UJ, WA, XV, YB, ABA, G3AOO, APP, ABH, AVO, BEX/P, BI, BKQ, BLP, BNC, CC, CGQ, CFR, CHY, CNY, CWV, DIV, DKZ, DO, DVK, EDD, EHY, EJO, EPW, FAN, FD, FMO, FOU, FSD, FUM, FZL, GBO, GHI, GNJ, GOP/P, GZM, HAK, HAZ, HCU, HSD, HTY, HVO, HWJ, HZK, IER, IOO, IRA, ISA, MA, MY/P, SM, WW, YH, AU, G4GR, JJ/P, RO, SA, G5BD, BM, DF, DS, HB, IG, JU, LK, NF, RW, SK, UM, YV, G6AG, CI, LI, NB, RH, TA, XX, XY, YP, G8DA, DM, DV/A, IL, MW, OU, QY/P, VN, VR, Gw2ADZ, 3FYR, 5MA/P, 8UH.

DL3FM, QA, VJ/P, 6EP, ON4BZ, HN, UV, XB, PAØALO, FC, SM7BE.

J. Symes (Streetly, Staffs). (Cascode converter)

G2FCL, FZU, HCJ/P, HGR, MV, WA, G3AOO, BLP, CVK, EHY, EPW, FAN, FMI, FUL, FUM, GHO, HSC, IAI, IER, IOO, NL, WW, G4SA, G5BM, MA/P, YV, G6AG, NB, YP, G8DV/A, SC, Gw2ADZ, 3GWA. DL1LB, ON4BZ, HN, PAØVLM.

A. W. Blandford (Mitcham, Surrey). (6BQ7/6J6 Cascode)

G2AHP, AUR, BFT, BTY, CD, CNF, DUV, DTO, FKZ, FNW, FTS, FSU, GOP, HCG, HQ/P, MQ, MV, RD, UJ, UN, WA, WJ, YB, XV, G3AGR, BEX/P, BI, CGQ, CVO, DAH, DBM, DJ, DQY, DJX, FO, FIT, FQS, FZL, FUM, GBO, GHI, GSE, GVO, HAK, HVO, HWJ, HZK, IAI, IER, IIR, IIT, IOO, IWA, ISA, MY/P, MI, IR, SM, WW, G4AU, CI, GT, HT, KD, MW, RO, SA, G5AA, DF, DS, LK, MA/P, ML, RW, YK, YV, G6AG, FO, GR, JK, JP, LN, NB, QN, RH, SG, TA, XH, XXYP, G8CK, DM, DV/A, MW, QY/P, TB, VR.

G3DIV (Eastbourne)

Recent Dx worked:— G2WJ, G3AGA, AVO, DSW, EHQ, EOH, FUL, GVL, HVO, ISA, Gc3EBK, G5YV, G6CW, G8AO/MM, PAØBN, DSW, FB, FC, FP, HAK, MU, OP, PF, PR, PAX, WI, WO, PEIPL, F3CJ, JN, FZ, F8GH, F9CK, LD, ON4CI, HC, HN, PA, UD, WW, DJIDC, DLICK, JM, LB, MI, DL3FM, FO, MH, VJ/P, DL6SV, DL9LT, MK, QV, SX, SM6ANR, QP, SM7BE, OZ2FR, IZ, OZ5AA, HV.

LISTENERS PLEASE NOTE. ALL REPORTS BY JUNE 30th, PLEASE.

(Direct to your conductor at 176 Station Road, Hayes, Middx.)

We seem to have run over our allotted space again this month due to the mass of interesting material received. It was intended to include twice the number of QRGs that we have actually done, but we will try and make up for this next month. A sincere thank you to everyone for the fine support. Don't forget June 30th is the zero date for next reports.

Good luck and 73 to all. G6UH.

Amateur Band Commentary.

(Contd. from p. 227)

On 20 Phone, Larry was delighted with ZK2AA (0700-14282) and KB6AQ (0750-14282), both brand new ones. Other good Dx was CR4AE, F18AC (1840-14139), OA5P, PX1C (?), ST2NW (1740-14190), VE8MD and 3A2AH (1200-14286). The CW bands produced a KX4DH, working MD5DO and being called by several of the usual optimistic types. The signal was strong and C.L.B. suspected a badly sent "YU," although the "KX" was quite distinctly sent. We have no doubt at all that it was in fact a YU. We've heard quite a few of 'em ourselves!

Dx Expeditions

W5ENE tells us that the Easter Island trip is now scheduled to sail at the end of May. Listen for CEØAA early in June.

Keep an ear open too for ZC3AA on Christmas Island. Should be audible in Europe from mid-day until the early evening, on good days.

Dx QTHs

- DU1CE. 202 Requesens St., Manila, Philippines.
- KF3AA. Via W6HIK.
- PJ2AJ. Don Kurz, Lago Colony, Aruba, N.W.I.
- VS2DL. C/O Posts and Communications, Kota Bharu, Kelantan, Malaya.
- VS2 QSL Bureau. P.O. Box 600, Penang, Malaya.
- ZC5VS. P.O. Box 136 Sandakan, Br. North Borneo.

Please send your next reports to reach us by June 8th, and for the following issue, first post July 8th, to : Roker House, South Cliff, Roker, Sunderland.

Good Dxing and 73.

G3ATU

New Report Pads are now available from us price 3/9 post paid. These are very nicely printed on good quality thick paper in pads of 50, with cardboard backs. Very convenient to use and will insure that your reports are really comprehensive. A report sent on one of these forms looks "professional" and will be more likely to receive the attention you wish for it, than one made up on an odd piece of paper. All SWLs are strongly advised to use these forms both for amateur and broadcast station reporting.

TALKS ABOUT VHF

A NEW SERIES

by H. E. SMITH, G6UH.

For the newcomer to the VHF bands and the listener.

Last month we attempted to show how the Yagi type of aerial "sees" only a small portion of the signal arriving from a distant point, and how relatively ineffective this type of aerial is, when the QTH is in a "shadow area" produced by nearby buildings. By using an aerial of the stacked array type we know that we can "scan" a larger portion of the wave-front because our collecting area is larger. This increase in area is of greater importance than is generally realised. Apart from the fact that we obtained an obvious increase in area, we have, in the stacked array, an aerial which is "broadly resonant." High Q circuits are not advantageous on VHF, because, being sharply resonant, they tend to prevent optimum results being obtained

This means that vertical aerials will pick up more of this interference than horizontal aerials.

Details of the tests carried out are as follows :—

A four-element Yagi, and a six element stack were adjusted to have as near as possible the same forward gain. Checks on local and semi-local signals were made, and there was very little to choose between the two in actual signal strength. The two aerials were then tested against a *vertically* polarised transmission on 146 Mcs. Comparative signal strengths showed that the Yagi was responsive to over twice the signal being received on the stack. Carried a stage further, the two aerials were placed exactly end on to the main road, and

peak noise tests were made on each for long periods. The average peak noise as registered on an output power meter was considerably more than eight db greater on the Yagi than the stack. Finally we made tests on the noise level emitted by a local factory. With a Yagi aerial "looking" due north, the average noise level, as registered by a sensitive S metre, was S3.

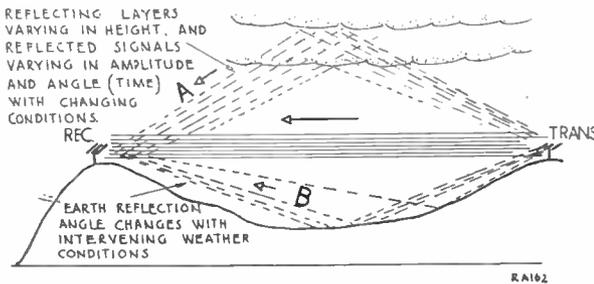


FIGURE I

over the whole band. Any aerial is of course, a tuned circuit, and it is extremely difficult to design an aerial of the Yagi type which will operate over the whole two meter band with equal efficiency, because it is naturally a High Q aerial. Another point worth noting is that at the frequency for which a Yagi is designed to resonate (say 144.500 Mcs) there will be a tendency for the aerial noise to rise, and spoil the signal to noise ratio of the receiver at this point. The higher the aerial gain, the greater will be the noise at resonance. This factor is not in evidence with the stacked array used without directors or reflectors, because of its lower Q. (Note : If directors and reflectors are used with a stack, each section becomes a Yagi, and one must expect an increase in aerial noise.)

Local Noise

Car ignition is the chief cause of interference on VHF, as is well known by those who live near to main roads. Tests have revealed that most forms of ignition interference have a definite tendency towards vertical polarisation.

With a six-element stack the noise level dropped to less than S1. While this test was being made, a station in the Cambridge area was being used as a check on signal strength between the two aerials. When the aerials were changed over, there was no measureable change in the signal level, in fact, signals appeared to be much louder on the stack because of the considerable decrease in noise level.

Fading

Much of the fading on Dx signals is due to a reflected portion of the signal arriving on the aerial 180 degrees out of phase with the main signal. When this reflected portion is near enough of the same amplitude as the main signal, complete cancellation takes place and nothing is heard on the receiver. Fig. 1 shows how reflections take place on VHF, and it will be seen that there is a focal point where cancellation takes place. In our sketch we have shown a three-element Yagi "looking" at a completely cancelled signal, and nothing

THE BEST OF ALL HOBBIES

by Miss Frances M. Spafford,
26 Orange Street,
Fitchburg,
Mass., U.S.A.

Between two and three years of age, I contracted Polio, which left me partially crippled and unable to this day to leave the house alone. Father died in 1937; being an only child this left just Mother and I.

My Mother's work, as a clerk in a department store, requires her absence from home on an average of nine hours a day, leaving me without much to occupy my mind.

This brings me to the reason for this article why should I, a crippled YL, become interested in Amateur Radio?

It might be well to point out that just the one fact of my aloneness and condition would be enough incentive for obtaining a licence.

But here in the United States we have a large number of women amateur operators, so there must be an additional attraction to this Amateur Radio.

These licensed YL "hams" have a world-wide organisation called the YLRL, (Young Ladies Radio League), and they keep in touch with one another over and above their radio contacts through their publication *Harmonics*.

In talking with the men and women on the amateur bands you get to know them and their families and it's as though you were travelling without ever having to leave your own house.

Often these new found friends drop in to visit when possible.

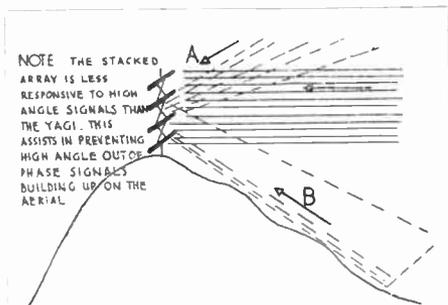
An amateur radio operator is always ready to lend a helping hand, not only to his brother operator, but in any national or local emergency. We could cite many instances where all other forms of communication were down and amateurs came forward to work night and day, without recompense, just because it is part of his amateur's code—just one big family.

There are many crippled operators, completely bedridden, some wheelchair cases, some on crutches, as well as many blind amateurs.

There are any number of professions found in the amateur ranks, amongst them, doctors, priests, ministers, lawyers, engineers, as well as the ever-present housewife and even school-children. Ages range anywhere from 9 to 90.

Any time, day or night, on some short wave band, you will find a "Ham," someone with whom you can spend a few minutes, or several hours, someone to share your cares or lonely days, to share also your joys and good luck.

The most democratic international being in all the world—the Short Wave Amateur Radio Operator.



is being heard on the receiver connected to it. If, however, a stacked array was in use, we see in Fig. 2 that there would be far less likelihood of the signal being lost altogether. Provided our stack is a deep one (eight elements or more, in other words, two wavelengths high) there will be very few occasions on which phase cancellation type QSB will cause signals to entirely disappear. The reader will appreciate we hope, that we are *not* claiming that the stacked array is the cure-all for fading on VHF, but it certainly will minimise one of the most prevalent causes of fading.

(We do not want to fill this section with long discussions on various forms of VHF aeriels, constructional details, etc., as we know that this ground is already covered by the various handbooks, but if required we will give some details of Stacked Arrays. Just drop a line and say what you want. In further issues we hope to deal with some problems relating to converters of the simpler type. From the letters already received, it seems that many potential listeners are still troubled by the fact that special valves seem to be necessary for good results. Up to a point, this is true, but one can at least "get going" on the band with some of the more easily obtainable types of valves, and having obtained some operating experience, it will be much easier to rebuild at a later date. Many experienced operators are still using valves such as the EF54 in their converters, and obtaining excellent results. So do not for one moment become discouraged because you cannot afford any of the more expensive Grounded Grid types of valve, because there are still some types obtainable on the surplus market which will perform quite well on 144 Mcs.)

HELP US TO HELP YOU. Read the "Radio Amateur" regularly and introduce us to your friends. A larger circulation will mean more pages for you.

CLUB NEWS

Club Secretaries are invited to submit notes for this feature by 15th June, for inclusion in next month's issue.

TOPS CW Club. Hon. Sec. : J. P. Evans, GW8WJ, 2 Ffordd Ty Newydd, Meliden, Flintshire.

The Midlands Topsfest on April 11th, was certainly successful and over 50 Hams and SWLs attended, some of whom had travelled long distances in order to attend. Amongst the Dx G's were : 2DHV (London); 3CUG (Dagenham); 3ESY; 3EYH and 3INR (Hereford); 8PG (Birkenhead); and 8WJ (N. Wales).

Apart from the above calls the following were noted in the Visitors' Book :— G2FPR, 2JZ, 2YM, 3ABG, APZ, CNY, COI, CST, CVB, CVX, ECH, EHG, FOP, FWD, GBQ, HRR, IGK, IOB, 5PP and XYL, 6FK, 8KL.

Bob Palmer, 5PP, very kindly gave an account of his experiences as GW5PPP during the Easter vacation. He hopes to be /P again early in August . . . in Cumberland/Westmorland.

John Worthington, 3COI, kindly filmed a couple of R5GB films. NFD and D/F 1947. 3ABG is to be complimented on handling all the arrangements at Wolverhampton. It is hoped to make this Midlands Topsfest an annual event.

The next Topsfest will be the North-Western at Chester on September 12th, when it is hoped that DL7AH will attend and possibly OH2MA. There will also be a small meeting at Chester on July 11th, when plans will be made for the September Fest. Any readers interested in attending either, or both of these meetings, should write to the Hon. Sec. enclosing SAE.

The following stations have joined TOPS recently :— OH2MA, OH2NB, GM3HXT, G2FT and G3US.

There have been no objections so far from the membership, regarding the scheme to inaugurate an associate branch of TOPS for CW-minded SWLs. Main outline of this scheme should be available shortly and will cover the chief problem of "qualification." Anyone writing H/Q, re this subject, should enclose SAE.

Coventry Amateur Radio Society. Hon. Sec. : K. Lines, 142 Shorncliffe Road, Coventry.

The MARS/CARS Annual Inter-Club Transmitting Contest took place on April 19th, and results are now being studied by the respective committees.

Mr. T. R. Theakston, B.Sc., gave one of his ever-popular talks on mathematics on March 30th, when he guided members through the rocky path of Calculus, with charm and humour.

"Readers' Digest"—readings of random interest—gave members an entertaining evening on April 13th, and Ray Bastin demonstrated his multipurpose power supply on April 27th.

Club Night-on-the-Air has been suspended for the Summer months, but usual meetings continue fortnightly at the YWCA, Queen's Road, at 7.30 p.m.

The Society were joint winners with Stourbridge and District Amateur Radio Society in the annual R5GB Affiliated Societies' Contest, and thanks are due to Fred Bowman G3FAB for placing his rig at the Society's disposal for the event.

Future programme is as follows :— June 8th : 70 cms by G2BVV. June 21st : VHF Field Day; June 22nd, Visit to Solihull Club.

Southend and District Radio Society. Hon. Sec. : J. H. Barrance, 49 Swanage Road, Southend-on-Sea.

At the last meeting, the exhibits of home-built gear for the Pockock & Hudson Cups were judged by Messrs. Asquith and Webster, Science masters at the Municipal College. Messrs. J. Wallace and D. Whitworth were the respective winners. The judges commented on the excellent workmanship apparent in all the exhibits and said that only a very strict system of marking indicated the piece of apparatus revealing the best workmanship. The Cups were presented at the Annual Hamfest on May 16th. June Programme :— 6th/7th, Exhibition at Chelmsford. 12th, Frequency Measurement by Mr. S. W. F. Asquith, A.M.I.E.E. 13th/14th NFD.

Clifton Amateur Radio Society. Hon. Sec. : W. Woolmer, G3GY2, 7 Neptune House, Neptune Street, S.E.16.

Meetings are held every Friday evening commencing at 7.30 p.m. at 225 New Cross Road, S.E.14.

The Club Rooms are opposite the old Tram Depot. Please do not ring the door bells, but knock on the ground floor window if the front door is not open.

Teas, minerals and cakes may be purchased from the Club canteen.

Club activities include lectures; talks; demonstrations and discussions, together with Morse; Theory and constructional classes.

The Club Station is operational on 1.7 and 3.5 Mcs Phone and CW under the call sign G3GHN.

Rochdale Radio and Television Society. Sec. : J. Riley, 1 Darley Bank, Britannia, Bacup.

The Club should shortly be on the air with the Club Call sign of G3IYD, and it is hoped that this will create an added interest in radio to all members.

The past few meetings have been of the nature of ragchews.

We meet every Thursday at 7.45 p.m. at 1 Law Street, Sudden, Rochdale.

Slade Radio Society. HQ, Church House, High Street, Erdington, Birmingham, 23. Hon. Sec. : Mr. C. N. Smart, 110 Woolmore Road, Erdington, Birmingham, 23.

At our last lecture there was a demonstration of a home-built "Theremin"—an electronic musical instrument. The second part of the evening was devoted to a description of an electric guitar. On May 1st, members made a visit to Elmpot Airport to see the radio installations there.

There will be an evening radio direction finding test on Friday, June 12th. This will commence at 7.45 p.m. at Society HQ. This event is arranged to help beginners at the art of D/F to obtain advice and assistance from the more experienced members. Every effort will be made to provide transport for visitors wishing to compete. On June 13th and 14th, there is a midnight D/F contest, the second event for the Harcourt Trophy.

A technical discussion will be held on Friday, June 26th. This will be at HQ, commencing at 7.45 p.m. Further details required by those wishing to join the Society may be obtained from the Hon. Sec.

Warrington and District Radio Society. (G3CKR). Hon. Sec. : G. S. Leigh, G2FCV, 49 School Road, Orford, Warrington, Lancs.

Meetings continue to be held at the King's Head Hotel, Winwick Street, on the first and third Tuesdays of each month. Lectures by G8TR—Synchronous motors, G3FGI—The CRO and its applications, and Amateur Radio Experiences in the U.S.A., by G5CF have been enjoyed and much appreciated by all members.

Future activities, June 9th, Basic Radar Principles—W7OFU—June 16th, Business and Rag Chew meeting and preparations for NFD are in hand and anyone interested will be welcome to join us on the NFD weekend at Dark Lane, Lower Whitley.

The Radio Society of Harrow. (G3EFX). Hon. Sec. : Mr. S. C. G. Phillips, 131 Belmont Road, Harrow Weald, Middlesex.

Meetings are held every Friday evening from 7.30 to 10 p.m., in the Science Laboratory at Roxeth Manor Secondary School, Eastcoat Lane, South Harrow, where visitors or prospective members are always welcome. Future meetings are arranged as follows :— June 5th, K. W. Cranfield, will give a talk on Selsyns and their uses. June 12th, and 26th, practical and transmitting evenings. On June 19th, a Junk Sale will be held.

Lancaster and District Amateur Radio Society. Hon. Sec. : A. O. Ellefsen, 10 Seymore Avenue, Heysham, Lancashire.

Following the recent Rotary Club Hobbies Exhibition several transmitting amateurs and short wave listeners who were responsible for the amateur radio stand at that exhibition decided to call a preliminary meeting to found some form of club where they could all get together at regular intervals and sponsor activities in connection with amateur radio.

We had a most heartening turn up at this meeting, held on May 6th, and little doubt was left that the Club



AMATEUR RADIO at the MORECAMBE ROTARY CLUB HOBBIES EXHIBITION

The first attempt to put Amateur Radio before the public of Lancaster and Morecambe was a great success. Many contacts took place on 80 metres including QSOs with Rotary Hobbies exhibitions at Leeds and Richmond in Surrey.

The stand itself included amateur as well as commercially-built equipment, a display of QSL cards and the ever-popular tape recorder.

would be able to start off on the right foot. After an informal discussion, committee, officers and members were elected as follows — Chairman, Mr. A. L. Thwaites, G3HHR; Secretary; Mr. A. O. Ellefsen, G3FJO; Treasurer, Mr. C. Bennett; Committee members, Mr. R. Cordingley, G3BAP and Mr. G. Millray.

We have an initial fully paid up membership of 14 but we hope to get in touch with several local newspapers and it is possible that any publicity that we get in this way will attract interested individuals whom it is hoped will increase our members considerably.

Cambridge and District Amateur Radio Society. Hon. Sec.: T. Davies, G2ALL, Meadow Side, Comberton, Cambridge.

The next meeting of the Club takes place on June 19th at the Jolly Waterman, at 8 p.m. No particular programme has been fixed up but it is probable that a large part of the evenings will be devoted to talking about the results of NFD.

Torbay Amateur Radio Society. Hon. Sec.: L. H. Webber, G3GIW, 43 Lime Tree Walk, Newton Abbot, Devon.

At the last meeting, the Chairman, G2GK, and the members welcomed a visitor—G2HAW.

The final details respecting the NFD of the RSGB local members were settled, and it was the feeling that fine weather would accompany their efforts—for a change.

The main item for discussion was the SW "Hamfest" of No.9 District of the RSGB, to which most of the Society members will be supporting.

The Committee, under G2GK, reported that it had been arranged to hold this at the Oswalds Hotel, Babbacombe, Torquay, on Sunday, October 11th, 1953—details as to price of tickets, times, and particulars of the programme will be announced in the "Bulletin" later.

Two Society members showed home-built apparatus

(Contd. foot next page)

BOOK REVIEW

"RECEIVERS, PRE-SELECTORS AND CONVERTERS,"**Data Book No. 7**

The latest addition to our publication list is now available for immediate delivery. We have been asked so many times for circuits and data on receivers, pre-selectors and converters of one sort and another, that we decided to compile a selection of some of the most successful and popular designs. This book accordingly contains such information on the following:— SW Mains Receiver; Portable Superhet; TV Sound Receiver; a TRF Receiver; a 13-31 Mcs Pre-selector; a TV Pre-amplifier; a Regenerative Pre-selector; a High-Gain 10 Metre Converter and finally a good Two Metre converter.

Full constructional details and circuits are given and this book is therefore very good value for 2/6. As expected, it has got off to a quick start and sales are already going well. So if you want one of the first batch, order NOW, and save yourself the disappointment of having to wait for the second printing. Even though you may not be contemplating any constructional work just at present, this book should be to hand in your shack, as it will help greatly in planning your future constructional programme.

It is available from us at 2/8, post paid, so write now for your copy to:— Data Publications, 57 Maida Vale, Paddington, London, W.9.

Xtal Filter for 1155*(Contd. from p. 205)*

560 kcs and a suitable centre-tapped 560 kcs IF coil must be available. The author strongly advises any constructors to try Osamor Radio Co., for a suitable 560 kcs centre tapped coil mentioning "Radio Amateur" as they cater for the home constructor. Firstly, (from Fig. 4) unsolder C85, R33 and C97 (values 300 pF 100 k ohm, 2pF respectively). Resolder the 100 k ohm resistor R33 in series with R10 at point marked AVC (3). Remove all wiring from L19 secondary to control grid of V5 and AVC lines, as shown in Fig. 4. Join two 500 pF condensers in series earthing the centre point. Now connect the "free" ends across L19 secondary. Starting at the "top end" of L19 secondary wire in the 560 kcs crystal/holder placing the crystal "in-out" switch parallel with it. From the "bottom end" of the secondary winding wire in the crystal phasing condenser, 50 pF variable, and connect the "free ends" from the crystal/holder and this condenser to the centre tap of the new 560 kcs IF coil (which has been obtained for the purpose of this modification) via a 50 pF condenser. The free ends of this new IF coil go to the control grid of V5 and the AVC lines Fig. 5 shows the complete modification. C85 (300 pF) is soldered directly across the new 560 kcs coil. The positioning of components is left to the constructor, but it is advisable to build the complete filter into a fully screened compartment.

Club News (Contd. from previous page)

which they intend to enter for the Constructor's Cup Competition. Judging for this Cup will be postponed until the June meeting—on June 20th, 1953:— (1) G3AVF showed a CG Two-meter transmitter employing an 832 in the PA. (2) G3GDW showed a harmonic check meter.

Meetings are held on the third Saturday each month—at the YMCA, Torquay, at 7.30 p.m.—visitors welcomed.

British Two Call Club. Hon. Sec.: G. V. Haylock, G2DHF, 63 Lewisham Hill, London, S.E.13.

Membership is increasing. New members include, G3EDW, VQ2W, D2DW, G3EBA, DL2BA, G3IDR, DL2SR, MP4BBH, VP4RG, G3ERF, Y12GQ, Y19FQ, G3ICH, and DL2SU. Quarterly newsletter "QTC" issued to members is going well. Sir E. Y. Neapan, G5YN—VS1YN—AC4YN etc., is a Club member and has recently joined the Six-Call Section. Membership qualifications are a call sign in any two countries and British subject. Application forms from G2DHF.

Ravensbourne Amateur Radio Club. Hon. Sec.: Mr. W. Wilshaw, BRS 18936, 4 Station Road, Bromley, Kent.

The Club meets every Wednesday evening at 8 p.m., at Durham Hill School, Downham. The Club Tx, G3HEV, has contacted 115 stations in 12 countries on three bands A1/3. Morse practice is available for those wishing it. It is proposed to visit places of interest during the summer. New members are welcome. The Club equipment included Tx:— 6v6, CO—6v6, PA: 6AC7—6AC7—TT11 PA. Denco and Eddystone 640 receivers and a 200-

ft. Marconi aerial, SWL reports will be welcomed on the Club's transmissions.

York Amateur Radio Society. Hon. Sec.: G. F. Nottingham, G3DTA, 51 Carr Lane, Acomb, Yorks.

A talk by C. H. Gardner, of Messrs Mullard Ltd., and their film "Its a good Sign," showing complete process of manufacture of valves and CR tubes was given at the last meeting, and was greatly enjoyed.

QPR Research Society. Hon. Sec.: J. Whitehead, 92 Rydens Avenue, Walton-on-Thames.

This Society is anxious to compile a schedule of all amateurs who regularly or occasionally operate their transmitters with an input of five watts or under, and the Hon. Sec. appeals to any amateur conforming with the above to submit details, such as call, QRG, operating times and input power, etc.

It is anticipated that this will be an outstanding year in design and constructional development, and a record entry is expected for the "carter shield," a trophy presented annually to the member submitting the most meritorious developments in QRP technique.

New membership data leaflets have been prepared, and any persons interested in Low Power Radio, whatever aspect, should write to the Hon. Sec., for information about the Society.

Worthing "Bucket and Spade" Party. It is proposed to hold this Annual event on July 26th. The venue will be "The Kiosk," Beach House Grounds, Worthing. Further particulars can be obtained from G3BF, Bracken Cot, Uplands Avenue, Worthing.

SHORT WAVE BROADCAST STATION LIST

(T) denotes Tentative Frequency or Station Under Construction.

(V) denotes Frequency liable to Variation.

(E) denotes Experimental Channel.

(I) denotes Inactive at the time of publication.

Kcs.	M.	Call.	Location.	Kcs.	M.	Call.	Location.
4806	62.42	CR6AA	Lobito, Angola.	4930	60.85	HJAP	Cartagena, Colombia.
4807	62.40	APD	Dacca, Pakistan.			YDP	Medan, Sumatra.
		CR5SC	Sao Tome, Sao Tome and Principe Is.			HC1RC	Quito, Ecuador.
4810	62.37	YVMG	Maracaibo, Venezuela.	4933 (V)	60.82	ZY121	Lagos, Nigeria.
4815	62.31	HJBB	Cucuta, Colombia.	4935	60.80	HJFR	Natal, Brazil.
4820	62.24	YVNB	Coro, Venezuela.			YVMQ	Ibague, Colombia.
			St. Denis, Reunion Isle.	4940	60.73	YVMQ	Barquisimeto, Venezuela.
			Guadalajara, Mexico.			VUD2	New Delhi, India.
4825	62.18	ZYE7	Parnaiba, Brazil.			JKM	Moscow, U.S.S.R.
			Singapore, Malaya.			HJCW	Kawachi, Japan.
4826	62.16	ZQP	Lusaka, Northern Rhodesia.	4945	60.67	HJCW	Bogota, Colombia.
4830	61.11	YVOA	San Cristobal, Venezuela.			YDA3	Johannesburg, South Africa.
(V)		HC6FV	Latacunga, Ecuador.			YVMM	Bandung, Java.
			Benguela, Angola.	4948	60.63	YVMM	Coro, Venezuela.
4835	62.05	HJKE	Bogota, Colombia.	4950	60.60		Dakar, Senegal (F.W.A.).
			Uberaba, Brazil.			ZQ1	Kingston, Jamaica.
4840	61.98	VUB2	Bombay, India.				Belize, British Honduras.
		YVOI	Valera, Venezuela.	4955	60.55	HJCQ	Bogota, Colombia.
		YDU	Denpasar, Bali (Indonesia).	4960	60.48	VUD2	New Delhi, India.
(V)		HC3MI	Ibarra, Ecuador.			YVQA	Cumana, Venezuela.
			Teresina, Brazil.				Saigon, Indochina (Vietnam).
4845	61.92	ZYU8	Bucaramanga, Colombia.			HC5HP	Moscow, U.S.S.R.
4847	61.89	HJGF	Barquisimeto, Venezuela.	4965	60.42	HJAE	Riobamba, Ecuador.
4850	61.86	YVMS	Loja, Ecuador.	4970	60.36	YVLK	Cartagena, Colombia.
(V)		HC3CV	Nairobi, Kenya.	4975	60.30		Caracas, Venezuela.
4855	61.79	VQ7LO	Neiva, Colombia.			ZYY9	Lagos, Nigeria.
		HJFV	Palembang, Sumatra.				Sao Luiz, Brazil.
		YDK	San Felipe, Venezuela.	4980	60.24	HC5JC	Cuenca, Ecuador.
4860	61.73	YVPA	New Delhi, India.			OQ2AC	Elisabethville, Belgian Congo.
		VUD	Srinagar, Kashmir (India).	4985	60.19	ZYZ5	Cuiba, Brazil.
			Yamata, Japan.			DYB2	Bacolod, Philippines.
4865	61.66	CSA93	Ponta Delgada, Azores.	4990	60.12	YVMO	Barquisimeto, Venezuela.
		PRC5	Belem, Brazil.			HC3CD	Loja, Ecuador.
		YDR	Ambon, Molluccas (Indonesia).	(I)			Lagos, Nigeria.
4866	61.65	HJFA	Pereira, Colombia.	4993 (V)	60.09	H11A	Santiago de los Caballeros, Dominican Rep.
4870	61.60	VUD	New Delhi, India.	4995	60.07	ZYY2	Goiania, Brazil.
		HJBG	Cucuta, Colombia.			ZYY2O	Porto Velho, Brazil.
			Colombo, Ceylon.	5000	60.00	WWV	Moscow, U.S.S.R.
4873 (V)	61.57	CR6RA	Luanda, Angola.			WWVH	Beltsville, U.S.A.
4875	61.55	VUD	New Delhi, India.	(T)		MSF	Puunene, Maui, Hawaiian Is.
		CR7BV	Lourenco Marques, Mozambique.				Rugby, England.
			Bangkok, Thailand.				Kuwait, Kuwait.
4878	61.50	ZID	Pietermaritzburg, South Africa.	5010	59.88		Zanzibar, Zanzibar.
4880	61.48	YVKF	Caracas, Venezuela.				Caracas, Venezuela.
		VUC2/3	Calcutta, India.	5017 (I)	59.80	PJC2	Vladivostock, U.S.S.R.
4885	61.42	HC6RT	Ambato, Ecuador.	5020	59.76	HJFV	Willemstad, Curacao.
4890	61.35	H13C	La Romana, Dominican Rep.	5023 (V)	59.72	H18Z	Manizales, Colombia.
4892	61.32	YVKB	Caracas, Venezuela.				Santiago de los Caballeros, Dominican Rep.
4895	61.28		Johannesburg, South Africa.	5024 (V)	59.71	CR6RH	Sa da Bandeira, Angola.
		HJCH	Bogota, Colombia.	5025 (V)	59.70	HC5BL	Cuenca, Ecuador.
		PRF6	Manaus, Brazil.	5030 (V)	59.64	YVKM	Caracas, Venezuela.
		APK	Karachi, Pakistan.			YDM2	Bukittinggi, Sumatra.
4897	61.26	VLX4	Perth, Australia.	5033 (V)	59.61	CR6AA	Lobito, Angola.
4900	61.23	YVQE	Ciudad Bolivar, Venezuela.	5040	59.52	YNMV	Managua, Nicaragua.
			Colombo, Ceylon.	(V)		YVKM	Caracas, Venezuela.
4901	61.21	HJAG	Barranquilla, Colombia.	5042	59.48	CR6RB	Tbilisi, Georgian S.S.R.
4905	61.16	ZYZ2O	Rio de Janeiro, Brazil.	5045	59.46	ZYP23	Benguela, Angola.
(V)		HC11M	Ibarra, Ecuador.	5050	59.41	YVKD	Petropolis, Brazil.
4910	61.10	JK1	Nazaki, Japan.				Caracas, Venezuela.
		YDB2	Djakarta, Java.	5055	59.35	HJDW	Dar-es-Salaam, Tanganyika.
(V)		HC1AR	San Miguel, Ecuador.	5060	59.30		Medellin, Colombia.
4915	61.04	ZOY	Accra, Gold Coast.			HJKH	Leningrad, U.S.S.R.
(V)		HC5LR	Alausi, Ecuador.			YDJ	Frunze, Kirgiz S.S.R.
4916 (V)	61.03	CR7BU	Popayan, Colombia.	5080	59.06		Sutatenza, Colombia.
			Lourenco Marques, Mozambique.	5090 (E)	58.94		Djogjakarta, Java.
4917	61.01	VLM4	Brisbane, Australia.				Salzburg, Austria (U.S. Zone).
		H19B	Santiago de los Caballeros, Dominican Rep.	5265 (V)	56.98		Groznyy, U.S.S.R.
4920	60.99	VUM2	Madras, India.	5360	55.97		Hollandia, Netherlands New Guinea.
4923 (V)	60.94	YVKR	Caracas, Venezuela.	5419	55.36	FNRI	Ulan Bator, Mongolian Republican.
				5470	50.03		Moscow, U.S.S.R.
							Fort-de-France, Martinique.
							Beyreuth, Germany (U.S. Zone).

TO BE CONTINUED

SMALL ADVERTISEMENTS

Readers' small advertisements will be accepted at 2d. per word, minimum charge 2s. Trade advertisements will be accepted at 6d. per word, minimum charge 6s. If a Box number is required, an additional charge of 1/- will be made. Terms: Cash with order. All copy must be in hand by the 12th of the month for insertion in the following month's issue.

PRIVATE

FOR SALE. Receivers R107, R208. UHF Receiver needs alignment. Hunts Bridge, CRB. AVO 7, Radio Magazines, etc. SAE, all letters answered. Box No. : C 125.

FOR SALE. EE Telesor. 9; Magnetic PM Focus, 6 kV EHT. Working order, fitted in spotless commercial console cabinet. Bargain £20. TV Amateurs only. Box No. : C 128 or AMB 3706.

FOR SALE. BC433, 200-1700 kc. £2. BC800, 15 valve IFF, 30/-, Indicator 62A, less VCR97. 35/-. Approx. : 150 surplus valves, metal and GT, cheap. 55 copies "Electronic Engineering" 26/-. 60 copies "Wireless World" 25/-. Carriage extra. Kimber, 61 Gale Lane, Acomb, Yorks.

FOR SALE. Lane Tape Table and MOS Amplifier with oscillator, nearly completed, needs one head, unused, first offer £12. Apply : Headmaster, St. Ignatius College, London, N.15.

FOR SALE. Sectional steel aerial mast, maximum height 50 ft., complete all fittings. Any reasonable offer. Good condition. View London Area. Box No. : C 126.

EXCHANGE. Brand new R1224A for "Globe King" with three or more coils, or would sell R1224A, £5. Box No. : C 127.

FOR QUICK SALE. Any reasonable offer will secure the following, singly or otherwise. BC312N, R1155 Model F, R1355 converted sound, needs power pack and speaker. Readily converted vision with RF24,25 and 26 units. 6D3S, 11½ in. Electrostatic Tune in original crate. All in good condition. Box No. : C115.

FOR SALE. Terman's "Fundamentals of Radio" 25/-, "Measurements" 20/-. Henney's "Radio Engineers' Handbook" 20/-. "ARRL Radio Amateur Hand book" 1951, 18/-. "Principles and Practice of Radio Servicing" by Hicks, 21/-. "Introducing Radio Servicing," 3/6. "Radio Handbook" 12th Edition, 15/-. "Electronic Circuits and Machines," 10/-. Weston 1 mA meter, 12/-. Box No. : B 215.

FOR SALE. SWL selling up has for disposal PCR Rx together with usual "junk" valves and circuit diagram, whole load of magazines and text books. SAE for list. £15 or near offer. Swanson, 83A Downscourt Road, Purley, Surrey.

FOR SALE. Two 813 valves, Sylvania, brand new. One CV 128 valve. Offers to Davey, 6 Station Road, Dunstable, Beds.

FOR SALE. Eddystone S640 with Instruction Book, mint condition, £20, write—Edwards, 40 Butler Estate, London, E.2.

WANTED. Information on converting the ex-RAF TR 1340 receiver. R. Kevern, 72 Nelson Road North, Gt. Yarmouth.

Portable Tx/Rx brand new T48 complete 10 valves, plus 10 spare, mike, key, batteries, generator, etc., £12 or exchange BC 348 SX 24, S640 or similar Rx. 39 Kingsbury Road, Birmingham, 24.

WANTED. Wilcox-Gay VFO : state condition and price 39 Kingsbury Road, Birmingham 24.

TRADE

BLUEPRINTS. High Gain 10 Metre Converter, with a de-luxe circuit comprising EF91 RF stage, ECC91 double triode mixer and oscillator, EF92 IF amplifier, with stabilised voltage supply via a 7475, 1s. 8d. post free with full instructions. A.S.W.P., 57 Maida Vale, London, W.9

JOIN THE ISWL. Free services to members include QSL Bureau, Translation, Technical and Identification depts. Dx certificates, contests and activities for the SWL. Monthly magazine "MONITOR," containing articles of general interest to the SWL and League member. Membership 10s. 6d. per annum. 86 Barengeur Road, London, N.10.

AMATEUR STATION RECORD CARDS. 6 in. by 4 in., best quality card, for recording that QSO and full details of the contact. An invaluable aid to quick reference of stations worked, etc., 3s. per 100 from Data Publications, 57, Maida Vale, London, W.9.

METALWORK. All types cabinets, chassis, racks, etc., to your own specifications. Philpott's Metalworks, Ltd. (Dept. R.A.), Chapman Street, Loughborough. "GLOBE-KING" (Regd.) Miniature Single Valve Receiver gets real DX—Amateur Radio enthusiasts should send for free copy of interesting literature and catalogue (enclose stamp for postage). Write to makers: Johnson (Radio), 46 Friar Street, Worcester.

BOOKBINDING. Volumes of Radio Constructor and Radio Amateur fully bound, imitation leather, gold lettering. 7s. 6d. post free. Prices for other publications on application. Jerome Alcock, CHEADLE, Stoke-on-Trent.

Announcement

New Service for the Amateur and Experimenter
A stamped addressed envelope will bring you details of the new series of blue-prints of aerial tested circuits, from single valve to six and seven valve super-hets. In the near future, kits of parts will be offered, both for the home constructor and the Amateur Transmitter and Receiver. Coming off the drawing board shortly is a simple Communications Receiver circuit. Further announcements will be made shortly concerning equipment for the T/A home constructor, including wide ban pre-amplifiers, etc., at prices which will be right for you pocket. Get your name and address on the files NOW by sending your S.A.E. to J.H.G. Box No. C 107.

Miller's "PANL"—the air drying black crackle enamel. From dealers 3s 6d jar or direct 4s 6d including postage —8 Kenton Park Crescent, Kenton, Middx.

OAK TYPE SWITCH SERVICE. Multi-Way Switches made to specification, approx. cost 2/6 Clicker Plate + 2/- per wafer. Box No. C 117.

240 DC to 230 AC 100W Rotary Converter £8. Ditto 200W £10 10s., 12V DC to 200V 65 MA DC 30 - SAE LAWRENCE, 134 Cranley Gardens, N.10.

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THE EDITOR invites original contributions on short wave radio subjects. All material used will be paid for. Articles should be clearly written, preferably typewritten, and photographs should be clear and sharp. Diagrams need not be large or perfectly drawn, as our draughtsmen will redraw in most cases, but relevant information should be included. All MSS must be accompanied by a stamped addressed envelope for reply or return. Each item must bear the sender's name and address.

Component Review. Manufacturers, publishers, etc., are invited to submit samples or information of new products for review in the section.

CHEQUES and Postal Orders to be made payable to Data Publications.

ALL CORRESPONDENCE should be addressed to "The Radio Amateur," 57 Maida Vale, Paddington, London, W.9. Telephone CUN. 6518.

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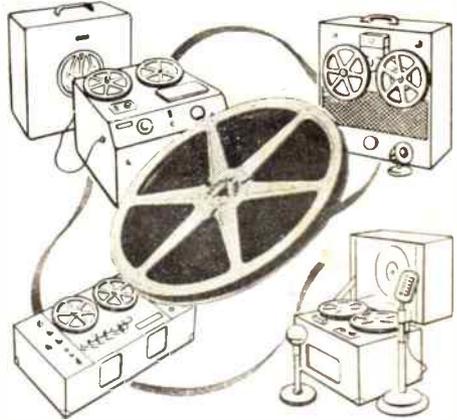
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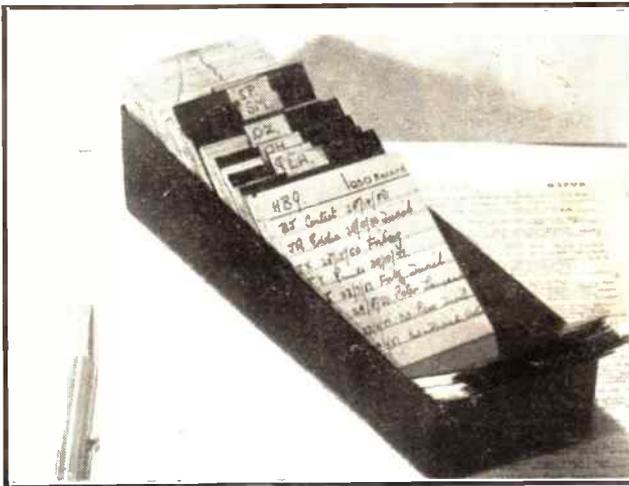


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