

The Month's "DX."

Recorded by HUGH N. RYAN (5BV).

The increasing efficiency of amateur transmitters and receivers is resulting in the creation of many new long-distance records which are undoubtedly worthy of mention. It is proposed to record month by month work in this direction, and the Editor will be pleased to receive details for inclusion in these pages.

THE latter half of December and the first half of January is always the most interesting part of the year from the "DX" point of view, and this year has been no exception. At the beginning of December no British station had succeeded in sending signals across the Atlantic. We all hoped that the coming trans-Atlantic tests would result, at any rate, in a few of our best stations "getting over," and the more sanguine among us hoped that two-way working on fairly high power might be accomplished before the winter was over. But few even considered the possibility of two-way working before the tests commenced.

Events have moved very fast since the beginning of December, and it is now ancient history that 2KF established two-way working with 1MO on December 8, though the news only got into the tail end of these notes. This success was quickly followed by those of 2SH, 2OD and 5BV, all of whom established two-way communication across the Atlantic before the end of 1923.

The total numbers of American and Canadian stations worked by these four stations, and the approximate powers used, are as follows:—2KF, five Americans, one Canadian, 90 watts; 2SH, two Americans, one Canadian; 2OD, one American, one Canadian, 40 watts; 5BV, two Americans, two Canadians, 45 watts.

The most remarkable performances are those of 2KF and 2OD, the former because of the large number of stations worked, the latter because of the low power and also because 2OD has worked Canadian 1BQ so very often and consistently.

Since the end of 1923 we understand that a number of other British stations have established communication with America, but full details are not yet available. These stations include 2SZ, 2NM and 2FU.

That is a fairly complete account of the results obtained apart from the official

trans-Atlantic tests. These tests extended from December 22, 1923, to January 10, 1924, and during that time the stations who had entered for the tests sent ten-minute schedule transmission every night, and each station had a different five-letter code word for each night. This code word he sent with the schedule transmission each night, and reception on the other side could thus be verified.

At midnight every night during the tests American 1XW (Hartford, Conn.) sent, on 100 metres, a report of the previous day's reception results in America and Canada. These transmissions were received in Europe by 8AB, PCII, 2KF, 5KO, 2KW, 5BV and others during the first part of the tests, but towards the latter part it is to be feared that most of these stations found that keeping up during the test periods of each night was quite a sufficient tax on the constitution, without listening for American reports as well!

At 12.45 each night R.S.G.B. station, 6XX, broadcast the results of the tests up to date. Up to the time of writing the following stations have been recognised by the R.S.G.B. as having been received, with code words verified, in America:—2FQ, 2KF, 2SZ, 5LC, 5PU, 6NI, 5BV, 2KW, 2NM and 2OD.

These are all ordinary amateur stations, and in addition to these 6XX, the special R.S.G.B. station, and 6YA, which, we understand, is being run by the members of a radio society, have been successful.

5KO does not yet appear in the R.S.G.B. lists, but 1XW has reported this station as having been received, with code word, and 1BQ gave me a message for him recently, giving his code word, which has been verified.

In addition to these British stations, six French stations (8AB, 8AE, 8BF, 8CT and 8LD) and three Dutch (PA9, PCII, oDV) have been received in the United States.

The tests have been very interesting from

several points of view. Firstly, they have shown very clearly the differences between the two classes of transmitting men. We have those who are keen experimenters, who design and make their own apparatus, and who operate it themselves. Also we have those who never perform any experimental work, who buy their sets ready made, who usually know no Morse whatever, and who are usually best known for the great number of gramophone records which they send.

Both classes of station took part in the tests (the latter employing operators), and success was, fortunately, almost entirely with the experimenters.

It was to be noticed, however, that while the stations of the former type transmitted only during their schedule periods, as was requested, and gave other people a clear field at other times, those of the latter type transmitted nearly the whole of every night, with a fine disregard for anybody else. But for this it is probable that more of the better type of stations would have been successful and none of the others.

Now that the tests are over we hear of an extraordinary trans-Atlantic success obtained by a station whom we usually associated with excellent short-distance telephony in and around London rather than with DX.

On the evening of December 27 2XZ was working on his usual 10-watt set, with another station only about $1\frac{1}{2}$ miles away, and experimenting with pianoforte transmission. His transmission was received, on a nine-valve super-hetrodyne set, at Kansas City, Mo., 5,000 miles away. The speech and music are accurately reported, and there appears to be no doubt about the authenticity of the reception. There is no doubt that that night was an exceptionally fine one for long-distance work, and this result is in the nature of a "freak reception." But, nevertheless, it speaks highly of the transmission, and we congratulate 2XZ.

It was on this night that I first worked Canadian 1BQ, and his signals were of such great strength on one valve that, bearing in mind having been "had" on previous occasions by humorists with hetrodynes, I did not believe that he was a Canadian, much to his amusement, and that, I believe, of several British stations also! Later the

same night 2OD worked him, and his signals were reported to be very strong, so it seems that it was a very fine night.

The best night since the tests so far was that of January 12—13, when some thirty Americans were heard in England on 100 metres alone.

By this time everybody knows that the 100-metre transmission of KDKA, mentioned in last month's notes, is a separate transmission and not a harmonic, as many thought at first. It is a very good transmission and will often work a loud speaker on two or three valves.

Some confusion was bound to arise in trans-Atlantic work owing to the fact that British and French call signs have their duplicates both in America and Canada. During the tests, of course, where only single-way work was involved, British stations prefixed their call signs with the letter G and French stations with F. This becomes very clumsy in two-way working, and the Americans have adopted the practice of using a distinguishing "break" sign instead of the usual "de." The sign is composed of the letter corresponding to the "called" station's country, followed by that corresponding to the "calling" station's country. The letters used are:—Britain, G; France, F; Holland, N; U.S.A., U; and Canada, C. Thus, American 2AGB calling Dutch PCII would call PCII nu 2AGB, and PCII would reply 2AGB un PCII. This is the most convenient way of avoiding confusion.

European "DX" is now in evidence again, though it was less interesting after the American work. However, much remains to be done in European work, chiefly in designing receivers which are selective enough to receive through the terrible QRM which we get nowadays, and sensitive enough to enable less power to be used by the transmitter, thereby lessening the QRM.

Nearly a year ago we used to read in French radio papers of a Swiss amateur transmitter, known as XY, but I do not think that he was ever heard in this country. He has apparently increased his power recently, as he is now quite strong. He first came in on January 6 at about 4 p.m., and at 5 p.m. 5DN called him, was heard, and worked him for some time. Another record for 5DN. This station seems to favour

Switzerland as the recipient of his record transmissions. He was using 10 watts, but his aerial current is now up to .5, instead of the .4 reported last month. No doubt he will reach the desirable ampère before long. May it travel in proportion to its size!

Mr. Neill, of Belfast, whose work I mentioned last month, has been doing well again this month, chiefly in reception of telephony from England. His best stations are 2ON and 2NM, both of whom he receives very well on telephony, the latter sometimes on one valve. He also receives speech from 2ZK, 2VF and 2IN, all of Liverpool district, the first of whom sometimes only uses 110 volts H.T.

In the West of England 5KO is going strong, having been heard in Algiers. 6RY is a fairly recent station, at Bath, but has already worked 8CT of Bordeaux.

I have just received from 7QF some particulars of amateur work in Denmark. He has sent me an enormous list of British, French, Dutch and Italian amateurs whom he has received. The very size of the list testifies to the excellent reception conditions in Denmark.

There are three active Danish transmitters at present:—7ZM, 200-220 metres, D.C. C.W.; 7EC, 190-210 metres, A.C. C.W.; 7QF, 180-210 metres, rectified A.C. All are near Copenhagen, and all have been heard in England on one valve. 7ZM and 7QF work on Saturday evenings, 7EC nearly every evening.

Yet another European country has entered the field of amateur transmitting work. Italy now has one transmitter—1MT, situated at Venice. He has already made a good start in "DX" work. 7QF has heard him often, and he has worked two British stations—2HF, near Birmingham, on December 9, and 5DN, of Sheffield, on January 13. 5DN was again using an aerial current of only .5 amp. Some of the London stations must look to their laurels. They almost monopolised the success in trans-Atlantic work, but the North look like beating them in European "DX."

By the way, what extraordinary call signs we hear nowadays! PA9 sounded curious at first, but what about PAR14, who is often to be heard now? I believe he is somewhere in Holland. ACD is another mystery station, who often works 1MT (Venice).

TRANS-ATLANTIC TELEGRAPHY.

In view of the recent trans-Atlantic amateur transmissions it is thought that details of the apparatus used by some of the most successful participants will be of value to many experimenters.

British 2OD.

By E. J. SIMMONDS.

THE object of this article is to give the outline of a special transmitter, the construction of which was commenced late in November to participate in the recently closed trans-Atlantic tests. Owing to various delays, however, which will be discussed later, this set was not finished, and ready for test until December 21.

In view of this fact, and also because of the astounding success of 2KF in effecting two-way communication with U.S.A., it was decided to make an initial test with the same

object, using the standard transmitter at the writer's station. From the diagram it will be seen that the circuit is one much used in U.S.A., being the well-known Hartley, employing as oscillator, Marconi AT.40X valve, H.T. from stepped-up A.C., 50 cycles, full wave rectification, and filament lighting from A.C. mains.

At 0315 G.M.T. Sunday, December 16, calls ARRL, etc., were transmitted for fifteen minutes with an input of 900 volts and 35 milli-amperes. At the termination of this