

Round the World on Short Wave

Notes of special value to short-wave enthusiasts are contributed weekly to the "Radio Record" by Mr. F. W. Sellens, Northland, Wellington. Observations from others are welcomed.

MR. F. W. SELLENS, our short-wave correspondent, sends the following observations for the week:—

7LO, Nairobi, is now reported to be transmitting on 42.5 metres between 3.30 a.m. and 6.30 a.m. (N.Z. time), and relays G5SW occasionally from 6.30 a.m. till 7.30 a.m.

The Bandoeng (Java) broadcasting station has, according to "World Radio," discontinued their Wednesday midday (midnight N.Z.) concerts. This station now broadcasts two or three gramophone records, generally from 12.10 to 12.30 a.m. each day before the telegraphic messages to Holland begin.

During 1928 the Chelmsford short-wave station, G5SW, transmitted for 1386 hours 18 minutes, with a total break down period of 0.91 per cent.

I was out of town for Easter, therefore my log does not cover the holidays.

Wednesday, April 3.

G5SW was R8—9 with a talk at 6.35 a.m., but spoilt by Morse QRM. KGO was tuned in at 6 p.m., very clear and steady at R9. Cliff Moore's Rhythmic Band and the Melodett's entertained listeners till 6.43 p.m., the station signing off at 11.13 Pacific standard time.

2ME, Sydney, were playing records at 10 p.m. while waiting for PLG, Java. Strength at best was R9, but fading was bad. PLG was heard at R8—9 very unsteady.

Thursday, April 4.

Q5SW opens at 6.25 a.m. with tuning note, giving their call, wavelength, etc. Big Ben strikes, followed by a "Health Talk" by Dr. —. Strength R8, 90 per cent. readable.

RFM at 10 p.m. was R8 with talk. 10.15 music at R4 on about 16.5 metres, also on about 15.5 metres at R5, increasing to R8. Calls were not heard, but probably Java stations.

Friday, April 5.

G5SW at 5.20 a.m. were playing records, R3—4, very unsteady. Talk to America was heard, but readability very poor. The American could not be heard. At 6.30 a.m. strength had increased to R7, the announcement from 5SW being then 100 per cent. readable. A debate between a lady and gentleman relayed from London was badly received. By 7 a.m. volume was R8, and another talk perfectly audible.

PCJ commenced at 5.34 a.m. at R6, increasing to R8 at 6.30, going off a little by 7.30 a.m. A mushy background spoilt reception. RFM at 9.30 p.m. was R8, when a man and woman were talking. Singing followed, but static was bad. ZL2BE, Hastings, and

ZL2AX, Palmerston North, at 10.30 p.m., were R9.

Saturday, April 6.

PCJ were heard from 6 a.m. till 7.30 a.m., strength varying from R7 to R8. Mushy at first, but better after 7 a.m.

KGO at R4 with musical items was not as good as usual.

G5SW: 6.30 a.m., Big Ben, R8. Talk following, not readable except odd words. Orchestra at 7.20 a.m. was much more clear, but weaker volume.

The stranger on 31 metres, after relaying London, was heard again. This time it was certainly not the London programme, as a lecturer could be faintly heard, while music was being transmitted through 5SW. PCJ was R1-2 at 2 p.m., increasing to R6 at 3.37 p.m., when they announced that they were signing off till 6 GMT, when a special programme would be transmitted for Australia and New Zealand until 8 GMT. They were on the air again at 5.30 p.m. at R8, decreasing to R4 by 7.30 p.m.

KDKA put over their usual talk by a Senator, the Secretary of War being the speaker heard this time. From 3.30 till 4.30 p.m., the "slumber hour" programme by the National Broadcasting Co. was enjoyed. 2XAD was the clearest station on the air during the afternoon.

On the Other Side

AFTER many months' discussion there now seems to be some possibility that the Ontario Government (Canada) will follow the lead of the Province of Manitoba and establish a broadcasting station. Suggestion that the operation of a Government radio station could be used for political purposes has, it is stated, been one of the chief factors in preventing the Government from taking this step. If such a station is constructed, it will be used entirely for educational purposes.

ONE of the most eventful careers in the United States radio world was brought to a close when Mr. Charles Broadwell Popenoe, treasurer of the National Broadcasting Company, died on January 10. A pioneer in broadcasting, Mr. Popenoe was the manager of the second broadcasting station in the United States, established in 1921, by the Westinghouse Electric and Manufacturing Company. He piloted it through the early experimental stages, and in 1923 was appointed manager of the Broadcast Division of the Radio Corporation of America.

The Transmission of Pictures

New Wireless Triumph

"THE day when the transmission and reception of telegraph messages in facsimile instead of by the Morse system will become the normal procedure has been brought appreciably nearer," states the "Morning Post," England.

Recently a number of pictures and hand-written messages were flashed across the Atlantic on a short-wave beam circuit, in operation between New York and Somerset. The pictures, which included cartoons and views of American buildings, reached England almost simultaneously with their transmission from America. They were received with astonishing ease and quickness.

The system is remarkable for its clarity. A "facsimile" service is in preparation which may in time make it the normal procedure for telegrams to be received in the actual handwriting of the sender—an advantage evident in the transmission of elaborate columns of figures, where absolute accuracy is assured.

The system at present employed enables two images, each eight inches by ten inches, to be received from America in less than 20 minutes, and may actually reduce costs as compared with present methods. In commercial operations, one of the channels could be used for ordinary telegrams, and the other reserved for urgent messages.

The Method.

THE telegram or drawing to be transmitted is placed over a cylinder and is traversed by a point of light. This light is provided by a motor headlamp bulb which is focussed into a spot, and this is rotated so that the light passes through a slot in the metal cylinder over which the message is slowly drawn.

Every part of the image is, therefore, illuminated by the spot of light at a speed which is very accurately controlled. A photo-electric cell is so arranged that the reflection of the light, which varies in intensity with the degree of whiteness or darkness of the image, falls upon it, and electric currents are therefore produced. These are magnified and radiated by the "beam" transmitter.

The receiving gear comprises the usual receiver and apparatus for reversing the process carried out at the transmitter. A sheet of photographic paper is placed over the receiving cylinder and is held down by a cover of celluloid through which the spot of light may be observed. As at the transmitter, this spot of light rotates and passes through a slot in the cylinder over which the sensitised paper is drawn, and it is controlled by a Lerr cell.

This operates as a light shutter, which allows a spot of light to fall on the paper only when a current is passed through the cell, and is therefore one of the vital parts of the apparatus.

The light is normally cut off from the paper, but when a current is received the cell operates and allows the light to fall on the paper, with the result that the light and dark portions of the message are reproduced at the receiver.

As the image at the transmitter is traversed by the light, so the light at the receiver is tracing out a copy with complete accuracy, and except for bad atmospherics or other disturbances the copy will be as clear as the original.

The copy may be in the form of a photographic positive or negative, and is quickly fixed.

An advantage of the system is that the receiving machine may be located many miles from the receiving station, and this is equally true of the transmitter, although at the moment sufficiently good telephone lines are not normally available at the American end. Errors through mistakes on the part of operators are avoided by this system, and when greater speeds are possible there may be a great saving in the cost of telegraphic transmissions.

Years of Experiment.

ALMOST ever since the inception of the telegraph, the problem of picture transmission has fascinated electrical engineers. As early as 1842 Alexander Bain invented a highly ingenious system, and many others have followed more or less in his footsteps with widely varying results.

The first telegraphic picture service opened to the public, however, was that which has been in commercial operation between Radio House, the Marconi main telegraph office in London, and New York since May, 1926. Some hundreds of news pictures, cartoons, fashion plates, signatures, cheques, and plans have been transmitted commercially across the Atlantic by this system.

During the recent facsimile tests, Bryan Davis, the young son of the English engineer in charge of the American end of the experiments, was able to send a picture of himself in a new hat, with a New Year message, to his grandparents at Chelmsford.

He also persuaded the engineers to transmit favourite pages of his picture-books and adventure stories across the Atlantic for test transmissions, and the engineers say that, with their simple pictures and clear type, these make ideal facsimilegrams.

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