Wireless and Weather

IN a paper on the subject of "Weather and Wireless," read before the Royal Meteorological Society by Mr. R. A. Watson Watt, B.Sc., F.Inst.P., A.M.I.E.E., there is a section dealing with the always-present problem of reception of the "indirect" ray compared with the reception of the "direct" ray.

Within the "service area" of a broadcasting station, the "direct" ray is not very strongly affected by conditions of light or dark along its path. By "service area" is meant that area of a broadcasting station within which the direct ray retains an energy level sufficiently high to give good signals in an average receiver.

Beyond this area the "indirect" ray operates and is a much more fickle and therefore a much more interesting element.

In his lecture, Mr. Watt refers to the question in the following manner:

"The service area is characterised by the relative constancy of signal strength given by the direct ray. It might, at first glance, appear that it could be indefinitely extended by improvement in sensitivity of the 'average receiver.'

"But, in fact, irrespective of a wide range of variations in receiver sensitivity, it is found that outside a very limited service area lies a wide region in which signals may be received during daylight hours, but in which, once night has fallen, signals are sometimes very strong indeed; sometimes, on the other hand, they weaken to complete inaudibility, and violent alternations in strength may occur within a few minutes.

"Still further from the transmitter the signals may actually be less variable than within this zone of acute fading. The whole group of phenomena may be satisfactorily explained by postulating interference effects between the direct ray and one or more indirect rays; when the direct and indirect rays arrive by paths of such length as to reinforce one another at the receiver (the crest of a wave in the direct ray coinciding with a crest in the indirect ray) abnormally strong signals are heard; at times they will so completely neutralise one another (the crest of a wave in one ray filling the trough of a wave in the other) that the signal vanishes.

"The service area is that in which the direct ray is overwhelmingly stronger than the indirect; the zone of bad fading is that in which the direct and indirect rays are of comparable strength, so that opposition of phase can give almost complete neutralisation. In the outer area the direct ray is much weaker than the indirect, so that the residual fading phenomena are due to modifications and interactions among the indirect rays themselves.

"The fluctuations of the indirect ray are to be ascribed to irregularities in the upper conducting layer, to varying ionic cloudiness, if we maintain our meteorological language. In view of the limitation of effective service area for the direct ray it will be seen that the greater part of the world's wireless communications is effected by indirect ray.

"In fact, we signal not by directing a wireless searchlight at the receiver, but by lighting up the electrical cloud layer with the searchlight and letting the receiver read the lighting-up signals. This searchlight analogy is strictly accurate for a 'beam' transmission, for 'broadcast' transmissions the process is like that by which we in Slough infer the existence of London by night, from the diffuse illumination of a cloud layer by the broadcast lighting of the streets."

"House of Disappearance"

Radio Play from 2YA

ON June 23 station 2YA will broadcast a radio thriller bearing the intriguing title of "The House of Disappearance."

This play was the first to be specially written for radio production in New Zealand, and aroused much interest on its initial production about a year ago. Many requests for a repetition have since been received. It is a play in seven scenes, and was written by Mr. Victor S. Lloyd, the well-known producer of many highly-successful microphone dramas.

THE plot, which is based to a limited extent on the novel of the same name by J. Jefferson Farjeon, depends largely for its effectiveness on atmosphere.

It would spoil the enjoyment of listeners to divulge the plot, which is full of surprises and unexpected twists. We may say, however, that there will be few "amateur detectives" who will anticipate the solution of the mysterious disappearances of several people from the house of Mr. John Elderly.

There are thrills in plenty, leavened with typical cockney humour by Geary the labourer, who is literally dragged into the House of Disappearance by a high-handed inspector of police.

One scene takes place in the heroine's apartments, with a gang of criminals battering their way in through door and window, leaving the hero and heroine no apparent means of escape. Another scene takes place inside a safe in which the hero and heroine are locked—and a third scene is in a secret underground passage.

THE characters include a Cockney labourer, a suave, mysterious doctor, a sinister chauffeur, a hectoring inspector, and a Member of Parliament.

Altogether, the entertainment will supply many exciting moments, and listeners may rest assured of a first-class evening's enjoyment.

Picture Transmission

PICTURE transmission and reception apparatus is en route to South Africa for installation at Kodak House, the headquarters of the South African Wireless Telegraph Company, Cape Town. It is intended to utilise the beam system for the exchange of newspaper photographs and other illustrations. When the installation is completed, tests will begin between Cape Town and Radio House, London, the wireless headquarters of Imperial and International Communications, Ltd.