

WARNING TO UNLICENSED LISTENERS

HEAVY PENALTIES TO BE ASKED FOR

A beginning has been made by the Department in rounding up unlicensed listeners, which practice has become, it is believed, particularly common since the opening of 2YA. Heavy penalties were imposed on four offenders in the Magistrate's Court, Wellington, last week, and intimation given that for the future the Department proposed to exercise its power and ask for the forfeiture of the set.

"This offence," said Mr. J. M. Tudhope, Assistant Crown Solicitor, in addressing the Court in respect of charges against four individuals, "is becoming altogether too prevalent, and from now on the Department intends to ask for heavy penalties. It is exceedingly difficult to detect people who have no licenses, because they are all over the place. Although listeners-in may not know it, we have the power to make them forfeit their sets no matter how expensive they may be. In future we intend asking the Court for permission to do this, as the offence is far too common. The trouble is that some people think thirty shillings is too much to pay for a crystal set license, so they decide to have free entertainment. They get just as good a reception, however, and are supposed to pay the same. If this sort of thing continues, it will seriously affect radio in New Zealand." Mr. Tudhope also said that in the present cases he did not ask that the offenders be made to forfeit their sets, but he did ask that they be fined an amount that would act as a warning to those who did not procure licenses.

One man was fined £3, while each of the others was fined £2 and costs.

THE RADIO TREND

INTERESTING INTERVIEW

NO REVOLUTIONARY CHANGES

EQUIPPING HOSPITALS AND SCHOOLS.

Present visitors to Wellington are Mr. William J. Avery, in charge of the foreign sales department of the Atwater Kent Manufacturing Company, Philadelphia, U.S.A., and Mr. S. E. Tatham, representative in Australia of the same company. These gentlemen are now touring New Zealand on a business visit, and in the course of a conversation with a representative of the "Radio Record," had some interesting comments to make concerning the strides that radio is making in different parts of the world.

"No," said Mr. Avery, in response to a question, "I do not think that we can look for any very extraordinary advances in radio from the present standard for at least some time to come. No further revolutionary changes are looming that I can see. I believe it to be correct to say that the Atwater Kent Company maintains the largest research laboratory in the world, and I know that their experts indicate no immediate revolutionary changes in present radio equipment as being likely."

"The general trend, of course, has been towards simplicity, and a notable advance in this direction is the introduction of the batteryless radio set. This avoids the complexity of independent batteries for those who desire it. The whole desire has been to put the radio receiving set into the same category as the gramophone—so far as its being able to provide music on demand is concerned. The general public, taken by and large, are not interested in radio complexities. All that they require is a set which, with a minimum of manipulation, will give them good reproduction of the station programme they desire. That is now available with the standardised one-dial control."

"The advancement that has been made in technical efficiency and standardisation of receiving sets means, it is generally considered, that the tendency will be for the number of manufacturers to decline, and for the production to be concentrated in the hands of the bigger organisations. The period of what may be termed 'wild-cat' development has been passed, and, with the rapid strides of recent years, weak manufacturers are already being eliminated. The standardisation of sets will mean, as in the motor-car industry, the attainment of a greater degree of perfection and reliability."

REPENTING AT LEISURE.

"An outcome of the rapid strides that the industry made has been that heavy losses have been made by those caught carrying stocks of equipment rendered out of date. To minimise loss the tendency has been for this material to be dumped into foreign countries, particularly into virgin territory. The reaction from this has been bad, and will take a period of time to smooth over. Chile and Japan are two countries that were very badly affected. Chile was just flooded with out-of-date stuff, and it will take another year before the disappointed population can be converted back into a radio market. Japan also suffered. At the start of the boom there practically every merchant bought radio, and the whole country was flooded

with radio merchandise, the most of which is now obsolete, and many of the merchants have gone to the wall."

Chatting further, Mr. Avery mentioned that Spain was a very fine radio country, both from the point of view of good service and outstandingly good reception. At Cordova, in the southern part, it was possible to receive with particular clarity the United States any night desired without any trouble whatsoever. Italy, too, had undergone a "radio wave," and was very well equipped indeed. All public schools in Italy had receiving sets, and a movement was now on foot for private schools to be similarly equipped.

RADIO'S GROWING SERVICE.

Asked as to striking features in radio development encountered by him, Mr. Avery said that he was impressed wherever he went by the attention being devoted to equipping hospitals and schools with radio. This had been most marked in the United States, where in Chicago alone his firm had recently received an order for 500 receiving sets and 30,000 loudspeakers. It was, therefore, now possible for the school children of Chicago to be addressed as a unit, and instructed along uniform lines, or put in touch with such events as an address by the President of the United States. In the case of hospitals, it has been most striking how effective the installation of radio has been in lightening the pain of sufferers and facilitating recovery. His own wife, unfortunately, had been frequently an inmate of hospitals, and on all such occasions he had installed a radio set, with a wonderful effect of lightening the hours of sickness. The manner in which patients nearby had also benefited had been the subject of much comment. Speaking generally, the desire was for all modern hospitals to be fully equipped with receiving sets and 'phones for the different classes of patients.

QUALITY PROGRAMMES TELL.

Mr. Avery was able to give much interesting information regarding the operation of the broadcasting chain stations in the United States. These stations were privately owned, and were maintained by either the company operating them as an indirect advertising service, or were supported by the fees paid by large firms, which provided programmes for the public as a means of advertising. The outcome of this service was that the public received a wonderful variety of selection. "While jazz," said Mr. Avery, "has exercised a big sway in the States, the crazy stage is now fairly well passing, although, of course, it still has a big hold. Experience shows, however, that there is a big public longing for better class material. This is shown by the experience of the Atwater Kent Company. Every Sunday evening this station broadcasts from 9.15 to 10.15 a programme embodying the services of the highest class operatic stars available, and costing, on the average, 10,000 dollars (£2000) for the hour. The quality of this programme has become so widely known that it is remarkable how people make a special point of being at home for that hour on Sunday evening and inviting their friends to come and "listen-in." This shows how, by entertainment, broadcasting is steadily appealing to the public and widening appreciation of good music."

IMPRESSED BY DISTANT RECEPTIONS.

Mr. Avery confessed that he had been astounded, since being in New Zealand, at the long-distance reception recorded in this country on standard sets. In the States, owing to the number of broadcasting stations and their closeness to centres of population, distance was not a material fac-

FADING

TRIALS OF SEPTEMBER

26 & 27

WHAT WILL BE THE OUTCOME?

We await with much interest the outcome of the fading investigation staged on September 26 and 27. Throughout the hours from 8 to ten on those evenings we asked our readers who were interested to record minute by minute any fading experienced so that an effort could be made to determine whether the cause lay in the transmission from 2YA, in the nature of the intervening land, or in any other factor associated with reception.

A brief explanation of the vagaries of fading was given on the evening of the 26th, and an article on our front page in this issue explains the cause of natural fading so that listeners may be able to form an opinion as to whether they are in good or bad areas for reception.

We trust it will be possible to compile an interesting map from the data to be sent in by listeners. We will be glad to receive these reports as soon as possible. Address: Fading, P.O. Box 1032, Wellington.

RADIO WAVES AND NATURAL FADING

(Continued from Cover.)

using no reaction; then slowly turn the condenser of the trap till a point is found where the volume of the local is reduced to a minimum. This point will be quite sharp and should be carefully found. Then, leaving the wave trap thus set, proceed to tune in distant stations. This will now become comparatively easy, and little or no interference should result.

FADING AND ITS CAUSE.

When radio waves travel over long distances, they, unfortunately, do not always reach the receiver with uniform intensity, but rise to full volume after a period of weakness and vice versa, sometimes accompanied by a peculiar mushiness at times of greatest fading.

These effects are due primarily to the fact that the waves, from the transmitter reach the distant receiver after having travelled to the upper atmosphere, where disturbed electrical conditions exist, instead of following the surface of the earth. (See bottom figure of block. This represents diagrammatically conditions existing at night time and shows waves travelling from a broadcasting station B, to two receivers, R, situated from 50 to 150 miles away, and R2 (up to 2000 miles distant).

It will be seen that no surface waves reach the distant receiver R2. These are so greatly attenuated by the resistance due to obstacles on the earth's surface that they are lost. The waves which do reach R2 have travelled to great altitudes and have been bent down again, partly by reflection from a more or less gradually defined layer of ionised and semi-conducting gases, known as the Heavyside Layer, and partly by refraction.

The upper atmosphere, being very rarified, is at times subject to extremely rapid changes in ionisation, caused primarily by the sun (although the sun is not shining at the time). The result is that R2 experiences very reception, as the reflection (Continued next Column.)

tor. The tendency was to concentrate upon the favourite local station and stay there. In New Zealand he had been shown lists of reception from stations in the States which were quite remarkable. While interesting, of course, as facts, he thought it was obvious that exceptionally clear conditions would have to obtain before real enjoyment could be guaranteed from such distant reception. When passing through Honolulu, where they were now building a high-powered station, he had heard Wellington quite clearly, and also Sydney and Brisbane very effectively.

2YA COMPARED WITH AUSTRALIA.

Mr. S. E. Tatham had something of interest to say in relation to the studio of 2YA. Neither Sydney, Melbourne, nor Adelaide, he said, had studio that would compare in appointments with 2YA, and he thought New Zealand was to be congratulated upon the standard being set. The New Zealand stations were received satisfactorily in Australia, particularly Wellington, although, of course, the fact that we were quiet after 8.30, Australian time, did not give Australian listeners very much opportunity of enjoying the best.

TESTING WIRELESS FOR BACKBLOCKS SCHOOLS

ARRANGEMENTS FOR TRIAL IN HAND

"In conjunction with the New Zealand Broadcasting Co., the Education Department is instituting a series of tests in schools with the object of ascertaining whether it would be practicable to give instruction by wireless," states Mr. T. B. Strong, Director of Education.

"It is considered that if reception is satisfactory in the schools, specimen lessons in certain suitable subjects could be given," he said, "by leading experts. Such lessons would be of benefit to children and teachers alike. This would apply particularly in remote country schools. Arrangements are being made by the Department, in conjunction with two firms, which are agents for the leading apparatus, to carry out experiments, with the assistance of the inspectorial staff."

"A broadcast of test lessons will be carried out on a date to be fixed," said Mr. Strong, "and selected schools from the North Cape to the Bluff will participate. The educational possibilities of wireless have not yet been ascertained," he added.

TRIO AT 3YA

PARTICULARLY GOOD

MUSIC-LOVERS DELIGHTED.

The Christchurch Broadcasting Trio—Mr. Harold Beck (cello), Miss Irene Morris (violin), and Miss Aileen Warren (piano)—made their first appearance at 3YA on Thursday night, and scored a great triumph. Their concerted and solo items were magnificently played, and established a distinct advance in the musical reputation of 3YA.

The Broadcasting Company next day received letters and telegrams of congratulation, the tone of the communications being that the writers "could not get enough" of such music.

An extract from one letter said: "I cannot refrain from writing to say how I enjoy the good concerts you have been putting on the air lately. Last night's was specially good. The cello playing of Mr. Harold Beck and the violin of Miss Irene Morris were superb. The person who would complain of the quality put on the air lately either wants his head (or is it his ear?) read, or his set overhauled."

It is expected that an announcement will soon be made that a similar trio has been appointed for 2YA.

tion becomes less perfect at certain times than at others. Different conditions exist for the moderately close receiver R1, as waves reach it by two paths, one following the surface of the earth, and the other by reflection as before, but this time at a sharper angle. Owing to this sharper angle, there is greater absorption by the Heavyside Layer, which it should be remembered is not sharply defined, also more energy passes through it than before. Hence less perfect reflection results, also refraction is now non-existent. Here also a change in the distribution of the vertical and horizontal components of the waves, known as polarisation, occurs. The surface waves reaching R are largely attenuated as explained above. These unfavourable conditions combine to produce, at night time, results which are actually poorer at R1, than those to be had by the more distant receiver R2, the waves to which follow a path with fewer obstacles.

Still another effect occurs at R1, which seldom exists at R2. We have seen that waves reaching R1 do so by two routes, one of which is longer than the other. It is not difficult to understand that waves which leave the transmitting aerial at the same time and following their two paths will not arrive at the receiving aerial together. This introduces further complications in the receiver which have the effect of producing an apparently slight distortion at R1, noticeably only at night.

These distances from a station where poor results are thus had vary according to the wave length used, as well as to the season of the year, and is also modified according to whether the transmission is over land or sea. They are usually referred to as skip-distances.

Receiving conditions in the day time are entirely different. The Heavyside Layer is then broken up and dispersed by the direct effect of the Sun's rays and little or no reflection occurs, with the result that the distant receiver R2 receives weakly or not at all. R1 on the other hand usually experiences clearer reception by day, with no fading or distortion, as this station now receives surface waves only, these having greater energy than before, and it is unaffected by reflection from above. A very close receiver of course receives direct waves either by day or by night. As a consequence no atmospheric fading can occur at any time from a local station.

POWER LINE LEAKS

CAUGHT AND CURED

GOOD WORK IN LAUNCESTON.

For a considerable time radio listeners in and around Launceston, Tasmania, have had to contend with electrical interference from high-tension supply lines. This interference took on the character of the noise of a waterfall, and it very soon became known far and wide as the "Launceston Roar."

One peculiarity about this electrical roar was that a few minutes' rain would absolutely silence it for a brief period. Actually the only time one could rely on getting good reception was while it was raining.

Mr. George J. McElwee, assistant-electrical engineer, Launceston, writes to Sydney "Radio" of the cause of the roar and the successful means taken to cure it. He explains:

High-tension Cables.

"When the overhead high-tension cables were first erected in the city of Launceston in the early 'nineties, they were put up to comply with the British Board of Trade Regulations at that time; those regulations provided that the cables should have a rubber and braid insulation, and should be suspended from a steel bearer cable by iron or steel clips at six foot intervals. To prevent the clips from chafing the insulation, a strip of tarred felt was wrapped round the cable, which, of course, added to the insulation between the copper and steel cables. Both cables were supported on porcelain insulators, the steel cable terminating at the shackle or anchor insulators, which were about every half-mile on a straight run, and the copper cable, of course, running right through to the point of utilisation."

Insulation Too Good.

"With this arrangement of the two cables, it was thought that the steel cable would have a current induced in it which would be a good deal out of phase with the current in the copper cable; in other words, would be reaching its maximum potential when that in the copper cable was approaching its zero at every alternation. This, it was thought, would probably set up an invisible discharge between the two cables in dry weather, when the insulation was good, and thus cause the interference, and when there was sufficient rain to reduce the insulation resistance, the discharge would cease and a much-appreciated silence be obtained on all receiving sets."

"The obvious thing to do was to adopt some means of preventing a difference of potential building-up between the two cables. To achieve this, the insulation on the copper cable was stripped for a few inches about every quarter of a mile and the bare copper bound up tight to the steel cable with a copper binding wire."

Supply Cut Off.

"This, of course, could not be accomplished without causing some inconvenience to electricity users, and after one of the high-tension distribution circuits was completely bonded in this way, the citizens were further inconvenienced by having the whole electricity supply cut off to put the theory into practical operation."

"It was on a Saturday afternoon when the 'Roar' was particularly bad, and it was found that the bonded circuit introduced no noise whatever into the receiving sets, but immediately any of the other circuits were switched on the trouble started again, and when the whole supply was resumed, reception was impossible."

"All of the circuits were similarly bonded as soon as the work could possibly be undertaken, with the result that vendors of wireless apparatus were once more able to do business."

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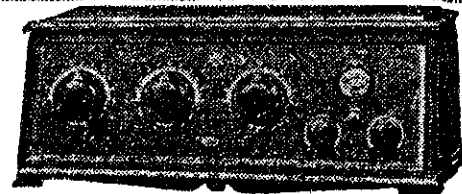
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