

## RACE RESULTS BROADCAST PROMPTLY BY 3YA

OWING to the ban which the trotting and racing authorities have imposed on broadcasting, the Broadcasting Company was compelled to make arrangements off the course for the broadcasting of results.

Prior to the commencement of the racing the following announcement was published in the Christchurch Press and broadcast from 3YA.

"As is now well known to the public, the racing and trotting authorities offered the Broadcasting Company free admission to the course, a privilege which is always enjoyed by the newspapers, but the stipulation was made that in our case we should then not broadcast any results during the afternoon. The racing authorities, therefore, in addition to prohibiting broadcasting from the course, attempted further to restrict our service until the evening news session. As we could not agree to such a proposition, and cannot broadcast from the course, the Company made other arrangements for securing the results of the races. These results are public property, and the information necessary for broadcasting will be secured by the Company in a perfectly legitimate manner. Listeners will, of course, realise that the company's officers will be working under difficulties. However, every effort will be made to secure and broadcast at the earliest moment all the race information which listeners desire to know."

NO difficulties attended the broadcasting of the results. In the case of the trotting a temporary studio was arranged in a nearby house—the nearest of several that were offered the Company for the purpose—and the information concerning each race was brought from the course. Admission tickets were bought for all the Broadcasting Company's employees, even for those who did not need to enter the grounds.

IT was quite possible for a running description to have been given, but in consideration of the wishes of the trotting authorities the Broadcasting Company did not do it.

## CRYSTAL CONTROL AT 2YA

### MARKED IMPROVEMENT IN TRANSMISSION

A FEW weeks ago, when the announcement was made that 2YA had been changed to crystal control, the statement that frequency modulation of the carrier wave was detrimental to quality was questioned by a writer in a Wellington paper. He stated: "The accuracy of this argument is open to question. Frequency modulation, if it occurs, certainly cannot be detected where the signal strength is considerable, and at great distances where the wave is very weak its effect on the receiver will not be appreciably, if at all, different from that of amplitude modulation."

IT will be interesting, therefore, to read what other writers say on the subject. The following is by Mr. Carl Dreher, staff engineer to the National Broadcasting Company:—"It was found by Bown Martin and Potter, as well as by some investigations in England, that a certain type of distortion could be traced to a slight frequency wobble, inherent in the usual method of modulating broadcast transmitters. This rapid variation within the cycle of the modulating frequency manifests itself in wave form distortion at the receiver, sounding somewhat like tube overloading, only worse. Stabilisation of the radio frequency of the carrier and sidebands helps to eliminate this "night distortion," as the British call it. The method employed is to use a master oscillator with a 50-watt tube

which may be crystal controlled. The result is that the transmitter holds a constant frequency during modulation, and that distortion is reduced to selective fading which does not hash up the quality as badly as the frequency wobble aforementioned.

This is what Messrs. Bown Martin and Potter say on the subject. "It was suggested that present-day radio telephone transmitters leave something to be desired in regard to what we may



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Chief Engineer Radio Broadcasting Co.

call, for lack of a better term, their 'dynamic frequency stability.' A very large percentage of the transmitters in use throughout the world to-day produce amplitude modulation of the carrier by the action of modulating tubes directly upon an oscillating circuit.

## BOXING AUTHORITIES APPRECIATE VALUE OF BROADCASTING

THE Otago Boxing Association writes to Station 4YA as follows:—

"Boxing fans throughout New Zealand and listeners-in generally have had a boon conferred upon them by the action of 4YA, Dunedin, in co-operating with the Otago Boxing Association, in broadcasting the series of professional boxing contests which have been held in Dunedin recently.

"To Mr. Webb, of 4YA, the thanks are due of the Otago Boxing Association for the willingness with which he has placed material at its disposal for the broadcast of the fights, and thus radio fans have had the pleasure of participating in what has been a veritable feast of boxing during the past few months.

"Thousands of listeners-in have taken advantage of the opportunity and many appreciative letters have been received by the O.B.A. in regard to the broadcast which has not in any way affected the contest attendances, but on the contrary has not only created an increased interest in the sport throughout New Zealand but has brought into the ranks of boxing followers many who had previously never taken any interest in the game."

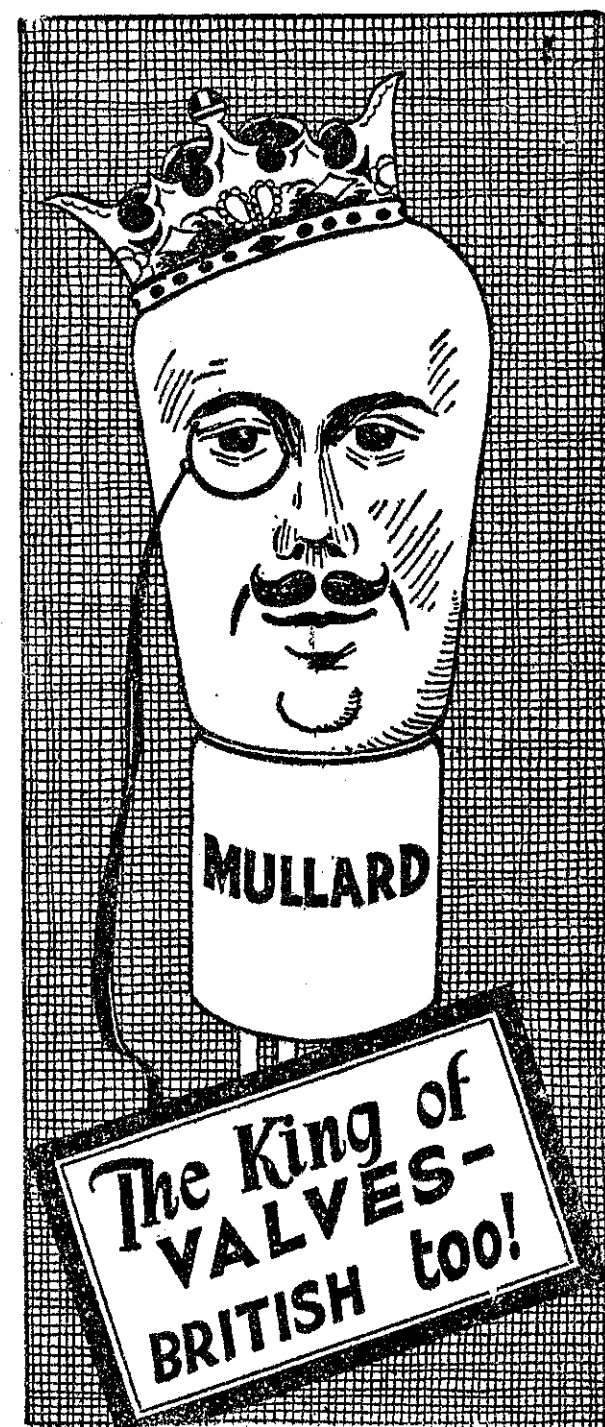
If it is to be expected that cyclic changes in circuit conditions occurring at the modulating frequency will have some cyclic effect on the absolute frequency of the carrier, and that this effect will be in the nature of a wobbling or rapid shifting back and forth in frequency of the amplitude modulated carrier. In other words, the carrier and side-bands, without change in their relative frequencies, would be subjected to "frequency modulation." What we have called "dynamic instability" is so rapid that it is difficult to observe by any aural method.

The same writers mention the effect obtained by stabilising the wave of a transmitter. The transmitter in this case was almost identical with 2YA. "Using the normal transmitter, night-time transmission as received at the test stations was seriously distorted. When the stabilising arrangement was employed; this distortion was apparently eliminated except at the minimum of fading."

IT may well be asked why this frequency modulation, since it produces such marked distortion at night in certain places, does not also give rise to distortion by day or in locations where transmission is steady. A full answer to this question would be far from simple. But in brief it is because the carrier and side-bands shift in absolute frequency, as a unit so that their relative or difference frequencies which determine the audio signal remain unchanged. However, since frequency modulation appreciably broadens the frequency band occupied by the radio signals, it is to be expected that the tuned circuits in the receiver would have some reaction on those louder portions of the signal for which the amplitude modulation, and therefore, the frequency modulation, is large."

So far as 2YA is concerned, change to crystal control has effected a marked improvement in the quality, and reports received from all over New Zealand indicated that the "night distortion" has now been reduced to an absolute minimum.—J.M.P.

ANY amount of beginners are in a quandary when it comes to selecting the wire for their aerials. It would be difficult to beat stranded enamelled 7-22 wire.



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