

ONLY a few weeks back the advent of the "movie-tone" in New Zealand was heralded, but it was impossible at the time to outline its technical features. Its success has been unique, and it is quite safe to predict that it is essentially the entertainment of the future. Already, several theatres in New Zealand have installed or are installing this new apparatus, and it seems that before very long all large picture theatres will be thus equipped. The technique of the system has been almost perfectly developed through radio. A few years ago, it would have been ridiculous to have suggested that one could see and hear what was enacted, say, six or twelve months ago at a scene thousands of miles away, but now this is an accomplished fact.

The greater number of movie-tone films released here, with the exception of news items, have the actions accompanied by music rather than speech. The result of this is that a special score can be written for the film, and at the critical points, the music can be suspended and the voices of the actors reproduced.

Audibility is perfect when the actors speak perfectly clear, and the language of these contrary to accepted ideas, is of a very high standard. The orchestral music is certainly perfect, and the fact that one of the largest theatres in New Zealand has covered the orches-

tral pit with a decorated lattice is significant of future development.

Systems of Talking Film.

So far, the movie-tone system has been most widely used, but there are two others that will be introduced ere long. The vitaphone and the photophone. The former is a disc-recording system while the latter resembles the movietone in that the sounds are produced through medium of light impressions on the side of the film.

On examining a piece of movie-tone film, series of bands varying in their density can be seen. These resemble film negatives, though not so intricate as far as impression. When the film passes through the projector it is taken to a point lower down, where a strong light is thrown on to the bands at the side. The variations in the intensity of these causes a variation in the intensity of the light passing through. This is recorded by a photo-electric cell. This latter, known usually as the "eye" of television, is a valve which may be likened to microphone. It transforms variations in light into variations of electric current, whereas the microphone transfers variations in the ether

The Technique of the "Movie-Tone"

Possibilities of Great Future Development

into variations of electric current. From this point on, amplification is the same.

The weak currents from the photo-electric cells are taken to an adjacent amplifier, comprising two A.C. amplifying valves of the usual receiver type. The strengthened signals are passed on to a power amplifier, where they are handled by five more valves, the last two being transmitting valves in push-pull. From this point relay lines carry the signals to the points at which the speakers are located.

In the case of the Paramount Theatre, Wellington, the management of which enabled us to get the full technical particulars, eight dynamic cone speakers are situated in two columns at the sides of the screen. From these the signals are thrown perfectly to the rear of the theatre.

In making a movie-tone film, the process is just the opposite. Speech vibrations are carried to a neon lamp, which causes fluctuations in the intensity of light, resulting in bands of different densities corresponding to the differences in the strength of the impressed signal. As it is almost impossible, both from the recording and reproducing standpoint, to have the photo-electric

apparatus and the apparatus concerned with the photography exactly beside one another, the tone process is retarded eleven exposures behind the photograph.

The photophone, working on the same principle, varies only in that the bands vary in size and not in intensity. It is considered that from a point of view of durability, they are more suitable than the movie-tone. Both can be used in the same apparatus without adjustment.

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VIEWING it entirely from the point of view of the concert programmes, without taking into account the many other features of the broadcast service, a dweller in the back country writes: "I installed a set last October. I consider it is one of the best investments I have ever made. We have had a great deal of amusement, and my three girls, who are all learning music, and are very keen on it, have the advantage of hearing the orchestral and other music which, as we live in the country, they would not otherwise have the chance of hearing. We have renewed our license, and there is no danger of us letting it lapse."



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