

objections to the present disc records. Frequently cuts or repeats have to be made in music (particularly dance music) in order to comply with the time limits. The tempo of playing, too, has to be varied in order to make up for slight deficiencies.

This work often occupies a deal of time, and the Metropole folk—in common with all other gramophone companies—employ several "tame" musicians to arrange scores where vitally necessary, to comply with the commercial time limits!

Repeats and Cuts.

KNOWING this, play one or two records over on your gramo-radio outfit, and see if you can detect in what way repeats or cuts have been made to get the piece into the allotted time. Ten to one you won't be able to detect any snags, for the work has to be done skilfully. Records are not elastic.

The outside diameter is standard, for ten and twelve inch, the width of groove is standard, and the inner diameter is reasonably standard. In one make of record the inner diameter is always constant, too, in order that the self-stop mechanism shall function automatically without the need for separating setting for each record.

Well, to cut a long story short, the time test of my little playings was completed and then the engineers appeared on the scene, carrying the microphone, a complicated-looking microphone stand, and a bank of dry batteries for the microphone excitation.

The "mike" was hung up in situ, the batteries were connected up, and a length of cable was taken to a plug outside the door of the "holy of holies"—the room containing the recording apparatus.

Entrance "Verboten."

ENTRANCE to this room is absolutely verboten while a recording is in progress. And, incidentally, it is entirely sound-insulated from the studio, so that no direct sound can enter which might upset the delicate "wax."

A "wax"—the master blank record about to be engraved—was placed on to the "stone," the "cutter" was held ready, and the "juice" turned on. Here we seem to be delving into technicalities; let me explain.

The "wax" is a soft, round composition cake, about an inch thick in most cases, and the stone is the rigidly-supported turntable which drives

it, similar in appearance to an ordinary electric gramophone.

The sole difference is that the stone turns at an absolutely constant rate, and the whole mounting is rigid—in some instances supported on concrete blocks and iron frames—so that no vibration can alter the speed of rotation or upset the setting of the wax.

The cutter is a kind of pick-up working backwards! It is operated by the microphone current, after amplification, and the armature supports a stylus which engraves the wave form in the wax. Usually the cutter armature does not vibrate freely, but is very heavily damped with rubber—much more so than the most heavily-damped pick-ups on the market.

Rugby Broadcast From Masterton

MR. W. D. ANSELL, of Masterton, advises that his station **2ZD**, working on **254 metres**, will broadcast the match, **Britain versus Wairarapa and Bush**, from Masterton on Saturday afternoon next, **May 31**. The station will go on the air from **2 o'clock with music**. The description of the match will be undertaken by **Mr. R. J. MacKenzie**.

Station 2AX, Palmerston North, worked by **Mr. Kyle**, will attempt to pick up the broadcast by **2ZD** and rebroadcast on **80 metres**.

Generally the stylus is mechanically connected to a long rubber "buffer" which it has to twist slightly as it vibrates. This damping can be accurately measured, and, what is more important, can be adjusted for each recording to be made.

The amplifier used, in the case of the Metropole apparatus which I saw, never includes more than three R.C. stages. With all three in use it is possible to pick-up and record a whisper at the far end of the studio! Two stages are usually ample, and a most efficient volume control is fitted at which an operator sits all the time a record is being made.

Resistance coupling is used between the valves, although iron is present in the microphone and stylus coupling.

Indicating Light.

FOR my part, I sat ready to play, heard the bell indicating silence, and watched for the indicating light which is the signal to start.

Simultaneous with the appearance of this light, as I found out afterward, other lights come on in the building, and particularly outside the studio door. A careless person barging into the studio with an ill-chosen remark would spoil a recording, and "waxes"—and engineers' time—are expensive! But more of this anon.

Recording for the Gramophone

(Continued from previous page.)

I completed my session. More I will not say, except to emphasise the fact that, in my opinion, once one gets accustomed to the stillness of the studio, the effect is beneficial.

It is just the same with broadcasting. I think any artist who has a real art in his work will learn to appreciate the absolute privacy and "aloneness" of the draped studio. It is uncanny at first, but a great help when one gets used to it.

A well-known dance band was next to make a few records, and, anxious to see how other folk underwent the ordeal, I waited through the next session.

Making Comparisons.

THE band was one well known to listeners, and it is not long since I saw a very similar combination performing at Savoy Hill. Therefore I was able to make comparisons regarding recording conditions.

Let me say here, that the "high-browness" of the B.B.C. must extend to its artists, for very often they turn up in full evening dress! But this band at the studio consisted of gentlemen in lounge suits, gentlemen in plus-fours, and—later, when work became strenuous, gentlemen in shirt sleeves!

This may sound irrelevant, but surely a man can give of his best when he is most comfortable. The B.B.C. might note this.

Recording Formation.

AN accompanying sketch shows how the combination was arranged, and those who know something of ordinary dance band formation (and who does not nowadays?) will see how the microphone has to be pandered to. Note the harp, which was used chiefly for accompanying vocalists. It gives a brilliant tone well suited to microphone recording.

Before electrical recording came into vogue it was even more difficult to ensure an even recording from all instruments. A large trumpet projected from one side of the studio and the folk at the outer ring of the orchestra had to sit on high stools—sometimes facing away from the trumpet!

The "mike" places the greatest reliance on distance. For instance, at a given cue, the vocalist stood up and almost cuddled the microphone, and sang his chorus. From where I was sitting, just outside the orchestra circle, he was almost inaudible, and yet, when we heard a "play-back" his voice came out with the accompaniment in the proper proportion.

Use of "Play-backs."

A "PLAY-BACK," as you will gather from the name, is simply a rapid reproduction of the recording. The Metropole people have a system whereby a play-back can be made almost instantaneously, and this is a great advantage, because if for any reason there is doubt as to a recording being done satisfactorily, it can be played over, through an amplifier and a cone-type speaker, and a check made.

This is always done in a first recording, though when a band has been "balanced up" properly the play-back is sometimes considered to take up too much time. Also, the members of the

band fidget uneasily on their chairs while listening to the ghosts of their former selves!

The play-back is really rather a poor reproduction, and it is used only as a guide, and not as an accurate criterion of quality! Artists always have to be told, in diplomatic fashion, that they "really don't sound like the play-back!"

What a pity that the B.B.C. cannot offer artists a "play-back" of their broadcast!

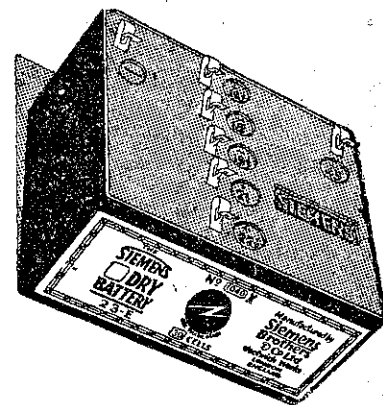
Knowing the artifices which have to be employed in order to get the best effect from a band when recording, it is really very fortunate that things do not go wrong in broadcasting, where, of course, one can't "do it again!"

In this connection, as I have not told you the name of the band, I can tell of the following rather amusing little incident.

One of the pieces played needed a fair amount of playing and re-playing to get the right effect. And when all the members of the orchestra were itching to get on to the next piece a final recording was made. Just at the end—in the last bar, in fact, one of the players sitting close to the microphone accidentally touched a wrong string.

THE last chord sounded, and with a sigh of relief the unlucky player said—well, just what you might have said! The warning light was still on, and his little piece of blasphemy was faithfully recorded at the end of the piece.

So they had to do it again!



Are You Satisfied?

Choose a British Battery to give you complete satisfaction. Siemens Batteries ensure perfect reception, giving you an evenness and clarity of tone that no other will do.

SIEMENS
45-VOLT STANDARD
B BATTERIES
Are All-British
"A Necessary Adjunct to Good Radio."

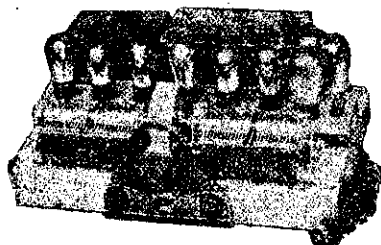
From all Dealers, or Sole N.Z. Distributors:

Cory-Wright & Salmon

P.O. Box 1230,
WELLINGTON.

P.O. Box 1650,
AUCKLAND.

METRODYNE



The Year's Greatest Radio Value!

ROYDS-HOWARD CO.
333 COLOMBO ST. CHRISTCHURCH