With GRAMOPHONE and RADIO

BY "B NATURAL"

A Speed Indicator

HOW many know when their gramophone motor is going at the right speed? And yet this is one of the few tasks that remain to the gramophone enthusiast to do. A motor that revolves too slow or too fast, not only spoils the tone, but especially in the latter case ruins the records. On previous occasions the writer has emphasised this point. The speed indicators on most machines are not entirely reliable. Although they may have been correct when the instrument left the manufacturer the regulator soon loses its true significance and some type of indicator is needed to keep the machine up to scratch.

Some commercial makes are obtainable though many listeners will not wish to go to this expense. The simplest method of determining speed is by the stroboscope—a disc of alternating bars or lines. This disc is placed on the gramophone turntable over a record. The machine is set playing and the speed adjusted until when viewed under electric light the bar or lines appear stationary. The light must be provided by alternating current (the usual) and the number of bars determined by the frequency.

In the "Listeners' Guide" there is a stroboscope—just ready to be cut out and pasted on cardboard to perform its useful mission. It is designed for the usual 50-cycle alternating current. For those interested the writer follows out the principle involved.

WHEN a regular body, such as a wheel, is in rotation, it will appear to be stationary if it be intermittently illuminated, the instants of illumination being such that the wheel turns through an angle equal to that between two consecutive spokes between successive illuminations. The same effect would, of course, be produced if the wheel were viewed intermittently.

An example of this effect, familiar to most of us, is furnished by the kinematograph. Sometimes, in the film of a moving car, or other vehicle, the wheel appear not to rotate. This phenomenon is due to the fact that the wheels turned through the angle between the spokes in the interval between the taking of each successive picture. (Intermittent viewing.)

If the wheels turn through two or three (or any other whole number) times the angle between the spokes, the same effect is produced. Should the wheel turn, in the time between the taking of two consecutive pictures, through an angle slightly greater than that between the spokes, they will appear to move round slowly in the direction of rotation, and in the opposite direction if the angle turned through be less than that between the spokes.

The method of arriving at the number of bars in the indicator is best shown by an example. Suppose the frequency of the mains is 50, the usual for New Zealand, and the speed of the machine is 78, now generally regarded as standard. According to the nature of alternating current the light will be dimmed 100 times a second as in a complete cycle the current passes the zero lines twice on the upward swing and once on the downward.

If the number of lines on the disc were such that it turned through the angle between two consecutive lines in 1/100th of a second the disc would appear stationary. The same would take place if any complete number of the bars were traversed in one internal of full illumination—in our case 1/100th of a second or for any frequency 1/2f. where f. is the frequency of the mains in seconds.

Now where R = revs. per minute of the gramophone disc (78), N = the number of lines on the disc, and R = R/60 revs per second.

$$= \frac{R \times 360 \text{ degrees a second.}}{60}$$

In 1/2f. seconds the lines has moved through.

$$\frac{R \times 360 \text{ degrees}}{60 \times 2f.}$$

Therefore, the full 360 degrees of the disc must be split into 60 × 2f. ÷ R spaces.

= 120f. ÷ R sectors or lines which in a circle are equal in our example = 120 × 50 ÷ 78 = 77.

But any multiple of this number can be taken, so by doubling the number of lines and filling in between each alternate pair, the lines can be converted into bars. For those with a great deal of patience and draughtman's ability making a stroboscope is not a particularly difficult task. For others it is not so simple.

A group of performers frequently heard from 2YA—the Rag-a-Jazz Revellers. The personnel is as follows:—:—E. O. Stokes, piano; J. Anderson, violin; D. Jauncey, C. Minifie (absent), saxophone; F. Ormrod, trumpet; R. Innes, banjo; C. Thomas, drums, effects, xylophone.
—Schaif, photo.

Choosing a Record By 'Phone

AN enterprising Sunderland (England) gramophone dealer has introduced a useful innovation which enables a customer to buy gramophone records without the trouble of visiting the shop. By putting through a telephone call to the dealer he can be switched over to a special booth containing an extension telephone. Here an attendant plays a selection of records over to him and those approved are delivered at once by a messenger.

Is It Sealed?

The Fate of Grand Opera

WIRELESS and sound pictures particularly have come upon us so rapidly that it is difficult to realise just what the outcome will be as far as the musical and operatic world is concerned. Already there has been a rapid decline in the number of "shows" that formerly were almost a weekly feature in every large New Zealand city. Already most of the opera houses and the theatres designed for the legitimate stage have installed talkie plants.

A wave of depression has swept the ranks of the play-producers, and literally hundreds in this part of the world are seeking new avenues to sell their talent. Out here the only chance appears to be the broadcasting stations, which alone tend to benefit from the change.

In sound picture producing countries a new demand has been created, and in time if the present trend is maintained the only outlet for dramatic talent will be here and in the newly-created radio drama. Music talent will, of course, gravitate to the recording studio—for it seems that it will require more than radio and talkie to displace this. If anything, these strengthen the position of the gramophone recorder.

APROPOS of this, an interesting article appeared in the London "Times." It appeared in the form of a leader, and was the outcome of an article elsewhere in the same edition headed "Economic and Artistic Difficulties of Opera in Italy." "It appears," comments Mr. Herman Klein in the "Gramophone," "that the well-known journal, the 'Corriere della Sera,' had sent round a questionnaire to the composers, conductors, critics, singers, impresarios, and music pub-

(Concluded on next page.)