

pick-up is now being designed so that the wear is being taken more from the base of the groove, therefore greatly increasing record life, and improving the purity of tone.

These experiments and photographs prove without doubt that there is nothing in the idea that the pick-up "ruins" records. On the contrary, as also shown by many other tests which

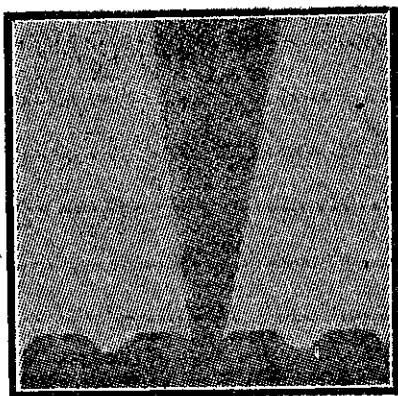


Fig 4.—A fine needle standing erect the wear is on the bottom of the in the grooves of a record. Note that groove.

are not illustrated here, the fact is that the average pick-up is far "lighter" on records than the average sound-box.

Celebrities

Heifetz

HEIFETZ first recorded for His Master's Voice in 1917, and of his H.M.V. records, which number over thirty, the "Finale" of the well-known "Violin Concerto" of Mendelssohn is one of the finest. Perhaps the full beauty of this famous concerto is not fully displayed without an orchestral accompaniment, but Heifetz's impeccable mastery over the violin, his brilliant execution and remarkable purity of tone, together with the flawless piano accompaniment, combine to produce a record of such perfection that the lack of orchestral accompaniment becomes of less consequence.

The lovely "Andante" of the "Goldmark Concerto," most beautifully interpreted, and the "Scherzo Tarentelle" of Wieniawski, are fine examples of his clean, eloquent style: while Schubert's "Ave Maria," backed by Mendelssohn's "On Wings of Song," forms a particularly fine record in which his lovely tone and phrasing are displayed to the utmost advantage.

Works by Tschaiikowsky, Beethoven, Paganini, Achron, Wieniawski, Mozart and Sarasate are also included in the list of Heifetz's recordings. They form a particularly attractive group, but there must be many people who would welcome his recording of a whole concerto with orchestral accompaniment. It is in the classic and modern violin concertos of Bach, Beethoven, Brahms, Bruch, Lalo, Mendelssohn, Paganini, Saint-Saens, Tschaiikowsky and Wieniawski that Heifetz is at his best.

"N.Z. Radio Listener's Guide?"

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New Recordings

A Cheaper and Better "Lohengrin."

TWO world-popular tunes in the Introduction to Act 3 of Wagner's "Lohengrin" and an orchestral version of the famous Prelude in C Sharp Minor by Rachmaninoff, will be found on a disc by Sir Henry Wood and the New Queen's Hall Orchestra. This record has now been transferred to the popular-priced section. The economist will be pleased to compare the old pre-electric disc of 10/- with the much better version at 6/-. Sir Henry makes the most in the Lohengrin of one of the few really great melodies that Wagner wrote, and arranged the Rachmaninoff to invest it with a rich overplus of effort. (Columbia 2967.)

An Organ Solo.

LOVERS of good organ solos—and these are numerous among our readers who use the versatile pick-up and electric amplifier—will derive great pleasure from this fine pairing of two favourite tunes. On one side

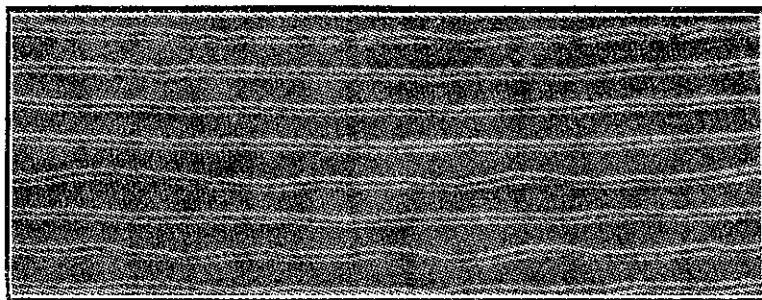


Figure 3.—The same portion of record as in Fig. 1, after 50 times with a first quality pick-up and a fine needle. The grooves show no trace of wear.

is Rubinstein's Melody in F, and on the other the simple and melodious "Narcissus," by the American, Nevins. Pattman, who for all that he plays on the Compton Kinema Organ, is a really fine musician and organist, plays them with admirable restraint and feeling, and makes a fresh delight of what might easily sound hackneyed.

Charming Violin Disc.

MISCHA ELMAN'S recording of Drda's "Souvenir" and Cui's "Orientale" (Op. 50), recalls that his wonderful tone is still as rich and expressive as in the past. The new electrical recording brings it out to great advantage. Cui's "Orientale" is particularly fascinating in its atmosphere of dreamy yearning and mystery. (H.M.V.)

Power Output

(Concluded from last week.)

IN coming to the question of determining the magnitude of the load imposed on the output valve by a speaker, we are faced with the difficulty that manufacturers of commercial speakers are singularly reticent regarding this important information, while measurement of the reactance and resistance of a speaker is a task of some little difficulty, complicated by

the fact that both the reactance and the effective resistance vary with frequency. It so happens that the writer has chanced upon curves relating to the Amplion "Lion" speaker, and no doubt these are fairly typical of speakers as a class. They are reproduced in figures 3 and 4. The impedance of the speaker may be determined by taking the figures for both reactance and effective resistance at a particular frequency and adding them vectorially (i.e., adding their squares and extracting the square root of the result).

The increasing impedance of this type of speaker (a reed-driven cone) at the higher frequencies leads one to wonder what frequency should be chosen for "matching" purposes. It will usually be found that the only "matching" which can be done may be accomplished aurally, since the effect of lowering the impedance of the power valve in comparison with the speaker is to produce a preponderance of low tones, whilst the opposite process brings up the high tones. The conditions for maximum valve output are usually satisfied somewhere in the

low frequencies appreciably higher than at the shriller portion of the scale (by reason of the high impedance of the pentode as compared with any normal speaker). Thus, the current being appreciably constant throughout the audible frequencies, the speaker resonance takes its full effect and we have the characteristic shrillness of a pentode-driven reed speaker. A step-down transformer is of some assistance in eliminating this.

The moving coil speaker requires separate consideration. Here the requirements for successful operation is that the coil current shall be substantially constant throughout the audible register. This requirement can readily be satisfied with a triode power-valve if the moving coil is not made too large. But the pentode is also very much at home under these conditions, and excellent results can be had from a single

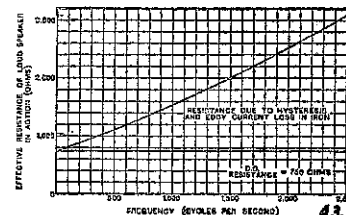
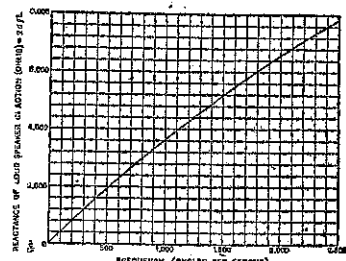
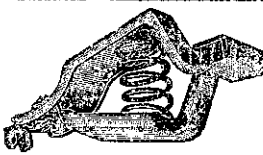


Fig. 3 (upper).—Curve showing reactance (2mFL) of Lion loudspeaker at various frequencies.

Fig. 4 (lower).—Curve showing effective resistance of a typical loudspeaker at various frequencies.

pentode feeding a moving coil speaker having somewhat more turns on the coil than is usual. As regards the impedance of a coil-driven speaker, this is a matter demanding a somewhat lengthy explanation. The average home-constructed instrument, however, with no step-down transformer and a coil of about 1000 turns, has an impedance of about 4000 ohms at 50 cycles, and at 4000 cycles and rather less than that at intermediate frequencies.

GENERALLY speaking a high impedance valve makes a good detector for short-wave work.



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