

* TESTED: for performance by Audio Instrument Company, Inc., an independent laboratory.

RESULTS: Garrard Model 301 tested even better than most professional disc recording turntables...sets a new standard for transcription machines!

Read Mr. LeBel's report below

Signal to Rumble Ratio,
Using Reference Velocity of 7 cm/sec at 500 cps

This reference velocity corresponds to the NARTB value of 1.4 cm/sec at 100 cps.

Garrard Serial No.	DB
867	52
937	49
3019	49

The results shown are all better than the 35 db broadcast reproducing turntable minimum set by NARTB section 1.12. In fact they are better than most professional disc recording turntables.

Signal to Rumble Ratio,
Using Reference Velocity of 20 cm/sec at 500 cps

Garrard Serial No.	DB
867	61
937	58
3019	58

We include this second table to facilitate comparison because some turntable manufacturers have used their own non-standard reference velocity of 20 cm/sec, at an unstated frequency. If this 20 cm/sec were taken at 100 cps instead, we would add an additional 23.1 db to the figures just above. This would then show serial number 867 to be 84.1 db.

It will be seen from the above that no rumble figures are meaningful unless related to the reference velocity and the reference frequency. Furthermore, as stated in NARTB specification 1.12.01, results depend on the equalizer and pickup characteristics, as well as on the turntable itself. Thus, it is further necessary to indicate, as we have done, the components used in making the test. For example, a preamplifier with extremely poor low frequency response would appear to wipe out all rumble and lead to the erroneous conclusion that the turntable is better than it actually is. One other factor to consider is the method by which the turntable is mounted when the test is made. That is why our tests were made on an ordinary mounting base available to the consumer.

Very truly yours,

AUDIO INSTRUMENT COMPANY, INC.

C. J. LeBel

C. J. LeBel

CJL:ds

Rumble: checked by official NARTB standard method (-35 db. min.)
-52 db.!

Rumble: checked by Manufacturer A's methods - **-61 db.!**

Rumble: checked by Manufacturer B's methods - **-84.1 db.!**

Of greatest importance!
Always consider these vital factors to evaluate any manufacturer's claim.

Now there's a Garrard for every high fidelity system



301
Turntable
•89⁰⁰



RC 98
Paper Changer
•67⁵⁰



RC 88
Deluxe Changer
•54⁵⁰



RC 121
Mixes Changer
•42⁵⁰



Model T
Manual Player
•32⁵⁰

Write for your complimentary copy "B.I.C. High Fidelity Plan Book," a useful aid in setting up any home music system.

Address U.S.A. Inquiries to Dept. GF-26:

BRITISH INDUSTRIES CORPORATION
Port Washington, N. Y.

Inquiries regarding other territories to:
Garrard Engineering & Mfg. Co., Ltd.,
Swindon, Wiltshire, England



TEST RESULTS...

important



GARRARD

World's Finest

MODEL 301

"the Professional"

transcription turntable



AUDIO INSTRUMENT COMPANY, Inc.

MEASURING INSTRUMENTS & APPARATUS
FOR AUDIO & VIDEO APPLICATIONS



133 WEST 14TH STREET
NEW YORK 11, N. Y. • ORIGIN 5-7820

Gentlemen:

January 16, 1956

3 Stock machines
selected at random!

We have tested the three Garrard Model 301 Turntables which the undersigned selected at random from sealed unopened cartons in your warehouse stock. These three bore the following serial numbers: 867, 937, 3019. We used a standard Model WB-301 mounting base without modification, a Leak tone arm fitted with their LP cartridge, and a complete Leak preamplifier and power amplifier, model TL/10.

Pickup and amplifier system conformed in response to the RIAA-new AES-new NARTB curve within ± 1 db.

Standards referred to below are sections of the latest edition, National Association of Radio & Television Broadcasters Recording and Reproducing Standards.

Our conclusions are as follows:

Turntable Speed

Measurements were made in accordance with NARTB specification 1.05.01, using a stroboscope disc. In every case, speed could be adjusted to be in compliance with section 1.05, i.e. within 0.3%. In fact, it could easily be adjusted to be exactly correct.

Wow

Measurements were made at 33-1/3 rpm in accordance with NARTB specification 1.11, which calls for not over 0.20% deviation.

<u>Garrard Serial No.</u>	<u>%</u>
867	.17
937	.13
3019	.12

These values substantially agreed with those given on Garrard's individual test sheets which are included with each motor.

Rumble

Measurements were made in accordance with sections 1.12 and 1.12.01, using a 10 to 250 cps band pass filter, and a VU meter for indication. Attenuation was the specified 12 db per octave above 500 cps and 6 db per octave below 10 cps. Speed was 33-1/3 rpm.

Turntable
easily adjusted
to exact speed!

WOW less than
NARTB specifications!

Rumble less than
most professional
recording turntables!

* Mr. C. J. LeBel

President of the Audio Instrument Co., Inc.;
Chairman of one of the groups which prepared the NARTB Standards;
Founding member of the Audio Engineering Society, past president;
Member of the Acoustical Society of America.

Audio Instrument Co., Inc., makers of special high caliber test
equipment for use in laboratory measurements.

Garrard 301 has been designed to provide the professional user and quality enthusiast with a unit supreme in its class—truly the world's finest transcription turntable for home use! At \$89.00, this machine has proven its performance equal to units three to five times the price.



A quality-endorsed product of the B.I.C. Group.



Fig. 6. Garrard 301 Transcription Turntable.

GARRARD MODEL 301 TRANSCRIPTION TURNTABLE

Within the past year or so we have witnessed the introduction of several new turntables built on professional lines and to high standards of quality, which is, in itself, an indication of the interest the serious music lover exhibits in the use of the single-play turntable for optimum reproduction of LP records. While all models can be used to reproduce all three speeds, the trouble involved in changing 78's or 45's every few minutes by hand almost rules out the use of anything but a changer. The principal advantage of the transcription turntable is in its lower rumble content, and as a system is improved in low-frequency reproduction, the rumble begins to show up. Additional advantages which are of some importance are the true-running surface of the platter and the increased constancy of speed.

The Garrard 301 is the newest model to be introduced, and it offers many attractive features. As seen in Fig. 6, the unit is mounted by means of a cast base plate on which are mounted the controls as well as the mechanism. The turntable is an aluminum casting which is accurately machined and dynamically balanced, and bored out to accommodate a phosphor bronze bushing which seats on the main spindle. This spindle remains in its bearing at all times, eliminating the possibility of contamination if it were removed for installation, inspection, or lubrication. The bearing is lubricated by a pressure system using grease and introduced by a conventional grease cup.

The motor is a 4-pole model, well shielded and dynamically balanced. It is suspended within a cast frame by means of six tension springs, each of which is

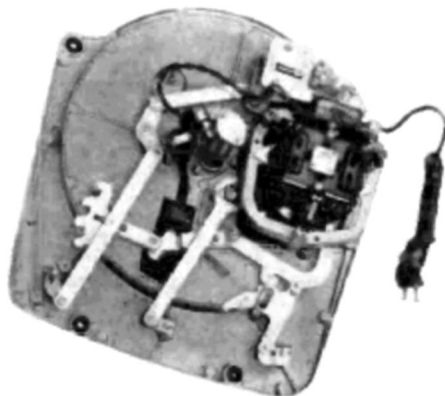


Fig. 7. Underside view of Garrard unit shows interlocking controls and isolation between motor and base plate. Note grease cup on main shaft bearing.

damped by a soft rubber insert. With the turntable removed and the idler held away from the motor shaft, no vibration whatsoever could be felt on the base plate with the motor running. Turntable drive is effected through an idler that bears on stepped motor shaft and against the inside of the turntable rim. The idler itself is mounted on ball bearings, and is lifted away from contact with both motor and turntable when the power is switched off. The speed selector lever, shown in Fig. 7 at the lower left, actuates a cam which raises or lowers the idler so as to make contact with the proper motor-shaft diameter, and is interlocked so it cannot be moved from one speed to another while power is turned on. In the off position of the power switch, a friction brake is applied to the turntable. Absolute speed of the turntable can be varied over a range of about ± 5 per cent. by means of an eddy-current brake; since this brake is located on the motor assembly and the control is on the base plate, an ingenious vibration isolator is provided between the control lever and the brake mechanism to further ensure freedom from vibration.

The effectiveness of this method of construction and the care in manufacture is borne out by the measurement of noise and rumble, which—by the same method used previously and described in *EQUIPMENT REPORT* for March, 1955, with additions in the December issue—comes out to be 50 db below a stylus velocity of 20 cm/sec (the standard used in *AUDIO*'s measurements). Since it is very hard to find records that exceed a signal-to-noise ratio of more than 45 db, this turntable would answer the most critical requirement.

A unique method of mounting is used in the Garrard for optimum results—short of mounting the turntable on a half-inch steel plate. The turntable base plate is solidly mounted on a board, along with the pickup arm; then the entire board is suspended on conical springs. This effectively isolates the record playing mechanism entirely from externally caused vibration.