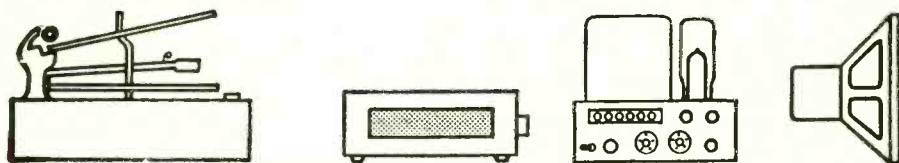


EQUIPMENT



PROFILE

MARANTZ SLT-12 INTEGRATED TURNTABLE



Fig. 1. Marantz SLT-12 Integrated Turntable.

There have been arm designs before that used the principle of straight-line tracking. None of them worked particularly well. After all, the problems of moving a playback cartridge across a record are radically changed when you shift from the usual lever arm to a linearly travelling arm. There are, to be sure, all sorts of theoretical advantages to straight-line tracking and no (theoretical) disadvantages. Still, there is the history of the thing. So, it can be understandable that we approached this SLT-12 with a sort of prejudice.

We can forget it. It works.

And that means a lot, for when you say a Marantz works, you say something meaningful.

Not that Marantz has any secret spells to help him, but it seems to us that this company has had a distinguished history of turning out fine products.

So what have we here?

The SLT-12 is a two-speed (33-45) belt-driven turntable and base with a

built-on arm and cartridge system. The cartridge itself is a modification (specially made) of the excellent Shure V-15. It is permanently mounted. The arm is like no other we have ever seen.

It comes out in a line from the box seen on the right in Fig. 1. Straight out. The knob below controls it. Press down on the knob and the cartridge lifts. Turn it and the cartridge head moves in or out. Release it and the stylus gently lowers into the groove.

There is always the question, when speaking of an integrated arm/cartridge of the problem of future obsolescence. After all, cartridge design is moving ahead at a breakneck pace. On the other hand consider the obvious design advantages of arm and cartridge as one piece. Each is made to extract the best from the other. There is no need to compromise cartridge compliance or arm mass to accommodate a variety. This marriage is certainly more

than one of convenience. The Marantz system produces a quality of sound that is simply not excelled by any other. Will that soon become obsolete? We think not.

The turntable itself is a 12-pound platter of non-ferrous metal that is belt driven from an hysteresis-synchronous motor. This is not the usual type of inside-out synchronous motor. Rather, it is somewhat larger than is seen on most tables. More important though is the fact that it has excellent torque and nearly complete immunity from voltage variation effects. The sample we had would not change from its better-than-0.5 per cent speed accuracy at any test voltage from 130 down to 35 volts. Yes, 35 volts. At that voltage, (actually below about 50 volts) the table will not start, but if already spinning it will hold accurate speed and sufficient torque down to that 35-volt figure. Below that voltage, the motor simply stalls out.

Rumble is totally inaudible. Measurements showed unweighted rumble to be 35 dB below 3.54 cm/sec recorded velocity. Most of this rumble is at 30 Hz and below; hence the inaudibility.

Total flutter was measured at 0.05 per cent. This figure represents the lower limit of our meter; we suspect this Marantz is even better.

One of the prejudices we had regarding straight-line arms is that resonance has to be high because of low mass. After all, the moving arm is only about six-inches long, although it is connected via a double partial-arc gear to the counterbalancing system below decks. The connection is not overtight.

Frequency sweeps down to 5 Hz did indeed reveal a resonant frequency. At 7-8 Hz. That is right where it ought to be for a first-rate arm so we have one more preconceived opinion shot down.

In fact, this Marantz has destroyed all of our prejudices. It is a lovely item. At \$295 complete it can hardly be called expensive. Still, we feel that it is worth every penny. Sound is clean and completely without any fudgy qualities. The cartridge tracks most discs well. It has an 0.2- x 0.9-mil elliptical diamond. This is

ideal for all stereo records but will not properly play all early monos. (There is no universal stylus.)

To sum up then, the Marantz SLT-12 is a truly fine product. It has been designed to be representative of state-of-the-art performance. It does not fall short of that goal.

CIRCLE 1



Fig. 2. The JBL SA 600 Integrated Amplifier.

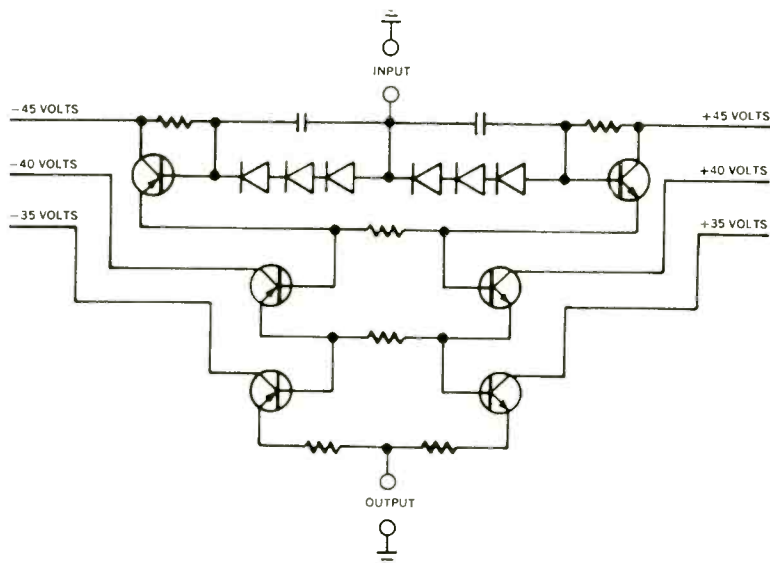


Fig. 3. The SA 600 output circuitry. The derivation of the term "T" circuit can readily be seen in this configuration. Note that coupling is direct. However, there is an extreme-bass attenuation capacitor in the first stage of amplification.

JBL SA 600 INTEGRATED AMPLIFIER

All-transistor stereo amplifiers are coming at us thick and fast. And these days they are pretty good. It is not correct to say that transistor products are inferior (in some respects, at least) to vacuum-tube products. Quite the contrary, we have seen several innovations in solid-state gear that would not have been readily possible an era ago. This JBL SA 600 is a case in point.

It is compact and not too heavy. It is a versatile integrated amplifier of high power output and excellent performance. Yet distortion, particularly IM distortion, was so low that it was straining the lower reaches of our instruments to measure it. To wit:

0.1 watt	0.07 per cent
1 watt	0.05
10 watts	0.05
20 watts	0.08
40 watts	0.23

These figures have been taken with an 8-ohm load and with both channels driven simultaneously. That is good performance by any standard.

The SA600 is not overburdened by a surfeit of knobs and controls. Still, nothing is really missing. Bass and treble control has been combined into two knobs each controlling both channels together. In this day of stereo via identical speaker sets we can not fault this elimination of separate channel control of tone function.

However, when versatility really counts, it is there in abundance. The tape-head input may be used as such, or, via a rear switch, it is convertible into a second RIAA phono input. The primary magnetic phono input offers considerable flexibility. JBL recognizes that many cartridges are not equal in output on the two channels. So they provide a rear-panel balance control just for phono. JBL also recognizes that cartridges of today offer outputs ranging from 2 mV to over ten times that amount. So the rear panel contains a three-position switch labelled LOW, MEDIUM, and HIGH. 4, 8, or 16-mV inputs will result in full output of the amplifiers. Overload is in excess of 250 mV at the HIGH settings; there will be no phono overload problem here.

There is a most interesting feature operated by the second-from-left toggle switch. In its normal position it does nothing. But swing it to TEST with a mono input source and adjust the front-panel balance control for the optimum null. This is electrical balance of the two channels.

But the true virtues of the SA 600 are to be found on the test bench and in the listening room. Power response of the unit is claimed at 40 watts per channel into 8 ohms. We measured 48 watts at mid frequencies, 45 watts at 20 kHz, and 47 watts at 20 Hz. (At 16 ohms the amplifier will deliver 25 watts per channel; at 4 ohms it is over 60 watts.)

All of these measurements have been made with both channels driven.

Frequency response may be drawn with a ruler between the usual 20-20,000 Hz limits. In fact, the ruler may be considerably extended. We found the -2-dB points to be at 8 Hz on the low end and 160 kHz at the upper end. Rise time was a fast 2.5 μ sec. Noise was 81 dB below 40 watts at the high-level inputs. A check of RIAA accuracy showed it to be within a dB of ideal over the 30-15,000 Hz range. Cross talk at 20 kHz was better than -45 dB with the "worst case" measurement.

That we are dealing with an impressive product is proven when the unit is installed into a quality music system and subjected to the test of the ears. If there are any faults to be found, they will show here!

We should expect that this amplifier would sound satisfactory. In point of fact it does not sound satisfactory—it does not create sound at all. That cliché about hearing *through* amplifiers has never been more apt than here. The SA600 can truly be called an "undistinguished" product. And that is what a great amplifier should be.

CIRCLE 2

HEATHKIT LABORATORY OSCILLOSCOPE, MODEL 10-14

Every electronic technician and tinkerer knows (or should know) the value of a good oscilloscope. Most of the ones seen are quite adequate to observe a waveform