

Fig. 2. The Marantz Model 7 Stereo Console.

MARANTZ MODEL 7 STEREO CONSOLE

When in the course of events a new product comes out of the Marantz shop, all audiofans, including ourselves, become excited or at least very much interested. Experience with this line has taught us that anything offered under this trademark is well worth looking into. And, completely aside from the performance—about which more later—looking into is a good description, since the equipment is constructed in accordance with the most meticulous precision, and with an engineer's attention to detail throughout. While there are many fine amplifiers on the market, and while the concept and engineering on many makes may possibly equal the Marantz, there can be no question about the over-all quality of Marantz equipment from design, component, or construction standpoints.

The Stereo Console, Model 7, is not very new—it has been on the market for about a year and a half, which is long enough to have been thoroughly proven in the field. And while almost any equipment can be made to work well on the day it leaves the factory, the real proof of the pudding is an evaluation of the performance of the same equipment a year, or two years, or ten years after the unit goes into service. In the nine years (about) since we first put an original Audio Console into service, *not one single thing has been done to it in the nature of repairs or replacement.*

Be that as it may, each new item is just as carefully looked over as though it were a brand new product which had been introduced within the last week. To be sure, the Model 7 Stereo Console is not much more than a two-channel Audio Console—but why change the design radically if the original was so satisfactory in the first place? One or two things have been added, some left off, perhaps slightly less flexibility has been provided in the way of equalization. But the entire design philosophy of the Model 7 derives from the original Console. Since practically all records in use nowadays are LP's, why provide for a wide variety of equalization curves? Since contour controls are frowned upon by the purist, why provide one? And we must certainly add a mode control as well as a balance control if we are going to have stereo. And that practically completes the design of the Model 7.

Circuit Description

Ahead of the preamplifier section, four separate inputs are provided: microphone, two phonos, and tape head. After the preamplifier provision is made for four high-

level inputs: FM on one channel and AM on the other, FM on one channel and multiplex on the other, and TV and Aux duplicated on both channels. Equalization is switched simultaneously with the inputs, with a rear-panel control making it possible to adjust tape-head equalization for a turn-over anywhere from about 4000 cps to about 1300 cps, thus accommodating any curve from $7\frac{1}{2}$ down to $1\frac{1}{4}$ ips. A lever switch offers three degrees of record equalization—RIAA, COL LP, and OLD 78—which is adequate for any record likely to be played on modern equipment. The same switch can be used with tape-head inputs to reduce the equalization below 100 cps as may be required by some machines. In the normal RIAA position of this switch, tape-head equalization follows the NARTB curve accurately, as required by most professional machines. In contrast to the original Console, the equalization is removed when switching to microphone; the older model required a change of both low- and high-frequency compensation in addition to switching the source.

The preamplifier section employs a 12AX7/ECC83 with the two sections cascaded and one other triode section as a cathode follower. This provides a low source impedance for the equalizing feedback networks to the cathode of the first triode section so the feedback is applied to only a small segment of the cathode resistor. Thus most of the cathode resistor is by-passed, resulting in a considerable decrease in noise level in the first stage.

The "front end" is followed by the high-level sections of the selector switch, with the latter offering the five positions of MONO A, MONO B, A + B, STEREO, and STEREO REVERSE. These switches are followed by another 12AX7/ECC83 as a cascaded pair which drives the feedback-type tone-control networks. These are step switches with six boost and four cut positions on the bass controls and five boost and five cut positions on treble. When in the "flat" position, the tone-control networks are out of the circuit altogether, which is a desirable fea-

ture. The tone-control circuits are followed by the low-frequency filter switch which provides cutoffs at 50 and 100 cps in addition to flat, and by rear-panel output-level controls which permit adjustment of the two channels separately. These controls feed two cathode followers which, in turn, feed the high-frequency filter switch with cutoff positions of 9000 and 5000 cps in addition to flat. The filters are LC networks employing toroid coils and suitable capacitors and damping resistors for smooth cutoffs.

Figure 2 shows the external appearance of the Stereo Console. The four large knobs at the left are the basic controls—SELECTOR, VOLUME, MODE, and BALANCE. The lever switches are, from left to right: tape monitor, phono equalization modification, low-frequency filter, and high-frequency filter. At the right are the four tone-control switches, with separate controls for each channel. The slide switch at the extreme right controls a.c. power to the built-in power supply and to five of the six a.c. receptacles—the sixth receptacle is unswitched.

Performance

Testing the Model 7 became quite a chore in the distortion department because our own IM equipment has a residual distortion of 0.2 per cent, and up to a 10-volt output no distortion was readable. Actually, the factory sets a maximum limit on IM distortion of 0.15 per cent at 10 volts out, and since it is not likely that anyone would ever use an output of more than 2 volts with typical modern amplifiers it may be said, practically, that the amplifier is distortionless. With the volume control at maximum, hum and noise measured 55 db below 1 volt on phono; at a volume control setting which resulted in a 1-volt output from a 5-mv input signal, the noise measured 73 db below 1 volt. On the high-level inputs the noise level was more than 90 db below 1 volt—a fantastically low figure for any preamp.

Frequency response was measured in every control position, and phono, and tape curves were within 1 db of the standard values throughout—and within less than 0.5 db from channel to channel. The volume control tracking was within 1.5 db down to 40 db from maximum. In short, the unit could almost be considered as suitable for use as a standard in every particular.

Construction

Figure 3 shows the rear panel, with the tubes being accessible without removing any portion of the housing. The tubes are carried on a flexibly mounted sub-chassis, and all leads to them are very flexible. To reduce microphonics of the low-level cables, caused by variations in capacitance between the internal wire and the shield, the low-level wiring is isolated from the side of the chassis with a sheet of poly foam. This is just one example of the high quality of construction throughout. Its performance is every bit in keeping with its handsome appearance. **D-28**

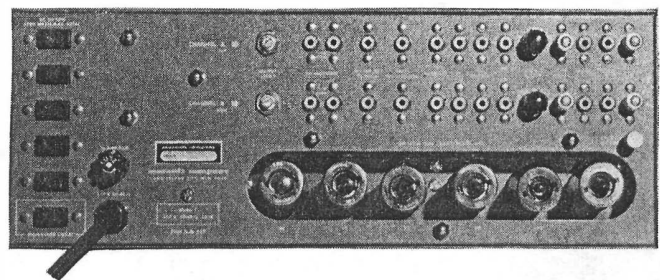


Fig. 3. Rear panel of the Model 7.