



Marantz 2325—More Than a Stereo Receiver

The Equipment: Marantz Model 2325, a stereo receiver with built-in Dolby processor, in walnut-clad metal case. Dimensions: 19 5/16 by 5 3/4 inches (front panel); 15 3/16 inches deep plus allowance for controls and connections. Price: \$799.95. Warranty: three years, parts and labor; shipping paid one way. Manufacturer: Marantz Co., Inc., subsidiary of Superscope, Inc., P.O. Box 99, Sun Valley, Calif. 91352.

Comment: From the standpoints of performance, features, reliability, versatility, adaptability, styling—you name it—the Marantz Model 2325, in providing a superior tuner and amplifier in the receiver format, is very much an audio cake that may be both eaten and had. It is Marantz' most ambitious stereo combination unit to date and easily one of the very best receivers available today. Performance of both tuner and amplifier sections is exemplary if not prodigious for this product format, and the unit boasts an order of applications-ability that rivals or outdoes that of many separate tuners and amplifiers, including separate preamps and power amps.

The tuner section, to begin with, is of advanced design with such circuit features as a five-gang tuning capacitor, phase-compensated ceramic IF filter network, and a phase-locked loop in the multiplex demodulator stages. It has an elaborate and versatile built-in Dolby system for receiving Dolbyized broadcasts with the new 25-microsecond de-emphasis, and it is possible to listen to a decoded broadcast while feeding the encoded signal to a tape recorder. The Dolby circuitry also may be used for decoding in playing or copying any Dolbyized material other than FM and for encoding ordinary material for Dolby noise reduction. Obviously, this is a feature of many uses.

Dolby or no, FM performance is excellent, with a steep quieting curve, low distortion, and very fine figures for the usual test criteria such as signal-to-noise, capture ratio, and selectivity. Audio response is virtually straight to just beyond the 15-kHz mark in both mono and stereo. In the latter mode left and right channels are just about perfectly balanced, and stereo separation, which reaches better than 40 dB across much of the band, generally exceeds standard broadcast requirements. As for AM reception, it is—in terms of the number of stations received and their clarity—distinctly above average.

The amplifier portion of the Marantz 2325 is no less impressive. Power output, as measured at CBS Labs, betters published specifications for both power and distortion. At very low power output distortion remains at least as low as that measured at full rated output. Both THD and IM generally are in hundredths of a per cent, suggesting genuine "state of the art" circuitry. Power bandwidth (for rated output of 125 watts at 0.15% THD) runs from below 10 Hz to 57 kHz. Frequency response is literally a ruler-straight line from 40 to 100,000 Hz and is down only 1/2 dB at 10 Hz. These figures, in sum, suggest the performance one would normally expect of a fine separate power amp. The power amp uses a direct-coupled output circuit, and the

entire section is protected by built-in circuitry that also obviates any annoying noises when the unit is turned on.

Performance of the preamp section is on a par with that of the power amp, exhibiting excellent S/N figures for rated sensitivities on all inputs—including the often critical magnetic phono input, which shows 70 1/2 dB S/N for an input signal of 2.2 mV. This characteristic, combined with the excellent RIAA equalization response, assures flawless disc reproduction.

The tone control system in this receiver is fairly sophisticated and more versatile than that usually found in most receivers or even in some separate amplifiers. It is divided into three segments—bass, midrange, and treble—with a choice of turnover frequency for the bass (500 or 250 Hz) and treble (2 or 4 kHz) ranges. Preamp and power amp sections are bridged internally for normal "through" operation; when signal plugs are inserted into a set of pre-out/main-in pin jacks on the back panel, the internal connections are broken and the signal diverted to, and returned from, the ancillary unit thus inserted.

Up to three tape recorders may be connected to the Marantz 2325, and dubbing from two combinations of one to another is possible. Using the indicated tape-out jacks will provide the usual flat signal but, if one wishes to modify the recorded signal (from any source, including another tape deck) via the receiver's tone controls, filters, and so on, the signal may be taken from the pre-out jacks.

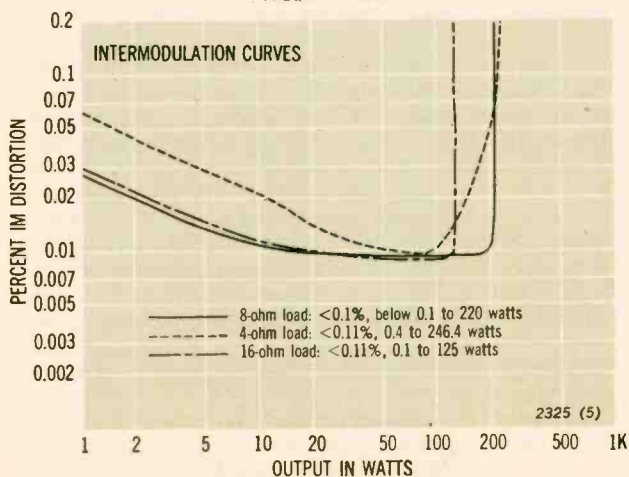
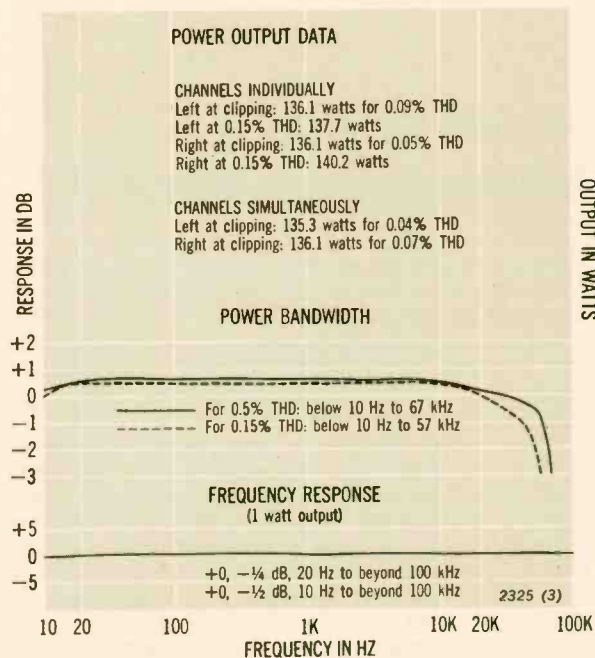
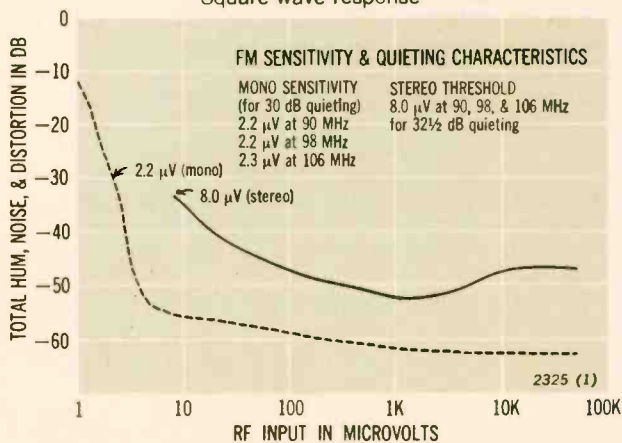
All of this is packaged into a sturdy, good-looking format that has a busy but well-organized front panel. The upper section is dominated by the station tuning dials for FM and AM, both amply proportioned and with a logging scale between them. These scales light up in blue. Above them is a row of boxes with printed legends that respond to control settings: Dolby, AM, FM, phono, aux, tape 1, tape 2, and stereo. The Dolby and stereo legends are lighted in red, the others in white.

To the left of the dials are two tuning meters. One is a signal-strength indicator for both FM and AM; it also is used to calibrate Dolby levels when playing or recording tapes via the built-in Dolby processor. The owner's manual contains detailed instructions for this application. The other meter is a combined center-tuning multipath indicator for FM reception. When a springloaded multipath button below the tuning dial is pressed, this meter can be "tuned" for minimum deflection in orienting the FM antenna. To the right of the tuning dials is the tuning "knob," Marantz' unique horizontal control, the rim of which projects through the panel and provides ultrasmooth, precise station tuning.

Below the tuning dials but sharing their plastic cover are no fewer than seventeen controls. They all look alike, although some are knobs, some are pushbuttons, and one is a slider. From the left, the first six controls handle the Dolby system in conjunction with the main Dolby control, a larger knob below. This knob has positions for Dolby FM (to listen to Dolby FM broadcasts), play (for playing any Dolby-encoded source other than FM), off, record I (for



Square-wave response



making a Dolby recording of an incoming non-Dolby signal), and record II (for making a non-Dolby recording of an incoming signal that has been Dolby-encoded). In all positions except off, the Dolby switch converts the FM signal-strength meter to an audio level meter. For calibrating the Dolby system with this meter, the first six controls previously mentioned are used. These include: a pushbutton to show left- and right-channel readings on the meter, play-calibration knobs for each channel, recording-level knobs for each channel, and a pushbutton to activate a built-in 400-Hz tone that serves as a reference signal.

The two tape-monitor pushbuttons are next; then comes the channel-balance slider control, which has a detent at its midway position. The eight additional controls to the right are all pushbuttons. The first is for multipath indication on the second tuning meter; next is a high-blend switch for reducing noise on weak stereo FM signals. The third and fourth buttons handle the low- and high-frequency filters, respectively. Then there's a loudness contour switch, followed by an FM muting switch and the two controls for turning on or off either or both stereo pairs of speakers.

Below this array are eight larger knobs. From the left, the first is the Dolby control already described. Then comes the signal selector with positions for AM, FM, phono, aux, tape 1, and tape 2. A mode control is next with settings for left, right, stereo, reverse stereo, and (left-plus-right) mono. The next four knobs handle the versatile tone control system. First in this group is a tone mode con-

Marantz 2325 Receiver Additional Data

Tuner Section			
Capture ratio	2 dB		
Alternate-channel selectivity	80 dB		
S/N ratio	67 dB		
THD	Mono	L ch	R ch
80 Hz	0.07%	0.44%	0.39%
1 kHz	0.07%	0.17%	0.18%
10 kHz	0.28%	0.96%	0.88%
IM distortion	0.09%		
19-kHz pilot	-61 dB		
38-kHz subcarrier	-78 dB		
Frequency response	+0, -½ dB, 20 Hz to 15 kHz		
mono	± ¼ dB, 20 Hz to 15 kHz		
L ch	± ½ dB, 20 Hz to 15 kHz		
R ch	± ½ dB, 20 Hz to 15 kHz		
Channel separation	>40 dB, 75 Hz to 2.8 kHz		
	>30 dB, 23 Hz to 8.2 kHz		
Amplifier Section			
Damping factor	69		
Input characteristics (for 125 watts output)	Sensitivity		
phono	2.2 mV	S/N ratio	
aux	225 mV	70½ dB	
tape 1	225 mV	91 dB	
tape 2	225 mV	85½ dB	
Total harmonic distortion	125 watts output <0.065%, 20 Hz to 20 kHz		
	62.5 watts output <0.058%, 20 Hz to 20 kHz		
	1.25 watts output <0.048%, 20 Hz to 20 kHz		
RIAA equalization accuracy	+ ¼, -1 dB, 20 Hz to 20 kHz		

trol with five positions: out (which defeats all tone adjustments), in (which inserts the tone controls with bass turnover at 500 Hz and treble turnover at 2 kHz), 250-Hz (which changes the bass turnover), 4-kHz (which modifies the treble turnover), and 250-Hz/4-kHz (which alters both treble and bass turnovers). The three controls for bass, midrange, and treble follow; each is a dual-concentric, friction-coupled type that permits individual or simultaneous channel adjustment and has detents at eleven positions. The last knob is the volume control.

To the left of this group are the front-panel input and output stereo phone jacks for tape dubbing. To the right is the AC power switch, below which is a stereo headphone jack that is live with any setting of the speaker selectors.

The rear panel of the receiver contains the speaker main and remote terminal pairs—press-to-connect types that accept stripped leads. The antenna inputs are similar connectors and include 75- and 300-ohm terminals for FM, plus a long-wire terminal for AM. There also is a built-on

AM loopstick for normal local reception. The rear contains an FM muting threshold adjustment and a Dolby-FM level-preset adjustment for each channel. Pin jacks are provided for magnetic phono and auxiliary inputs, the two pairs of tape monitors (in and out), and pre-out and main-in connections. Other features are an FM "quadradiial" output jack (for a discrete four-channel decoder, should a broadcast method come into use), two AC outlets (one switched), and a chassis ground terminal.

It is obvious that the Marantz 2325—in terms of its options and features as well as basic audio performance—is something more than just another stereo receiver. It offers the sophisticated audio fan, especially the recordist, a range of facilities not normally found on an all-in-one combination chassis. Aside from this, its listening quality is superb on all sources. It drives speaker systems, including those with very low efficiency, to full, clear sound even in large rooms.