

Product Review

Music Hall MMF-2.1 and Goldring Cartridge

Reviewed by Charles Hansen

Music Hall Audio, 108 Station Rd., Great Neck, NY 11023, 516-487-3663, www.musichallaudio.com. \$299 US. Supplied by Music Direct, 800-449-8333, www.amusicdirect.com. Dimensions: 16" W × 4" H × 13" D (including dust cover); weight: 17 lbs.

The Music Hall MMF-2.1 is a single-play two-speed turntable equipped with a factory-installed Goldring Elan moving-magnet (MM) cartridge and dust cover. *Photo 1* shows a front view of the MMF-2.1. The 4.5 lb platter is belt-driven by a shielded synchronous-reactance motor that has two step-crowned pulleys, providing speeds of 33⅓ and 45 rpm (a 45 rpm spindle adapter is supplied). The motor is mounted to the plinth by an elastomer isolator.

You can change speeds by removing the platter and shifting the flat rubber drive belt from one pulley step to another. A plastic speed change key is supplied with the unit so you do not have to touch the belt with your hands, thus avoiding oily contamination (MHA also supplies a spare drive belt). The aluminum platter, equipped with a felt record mat, sits on a die molded plastic sub-platter. The tonearm lift/cueing lever has a nice damped action that sets the stylus gently on the record.

FEATURES

The straight tonearm measures 9" from pivot to stylus and has a dual bearing gimbal mount. The cartridge is mounted at a 25° angle in the headshell. Two opposing hex-key screws on the counterweight shaft allow for vertical tracking alignment (VTA) adjustment, and a hex-key wrench is supplied.

The counterweight has an elastomer isolation insert and threads onto the counterweight shaft for tracking force (TF) adjustments. The TF range is 1.25 to 5.25 grams, with a cartridge



PHOTO 1:
MMF-2.1 front view.

weight of 3gm. Music Hall supplies a slotted ½ × ¾" sheet-brass weight that can be installed under very lightweight cartridges.

Anti-skating is implemented by means of a small cylindrical weight. You place its thin monofilament line in one of three notches in the anti-skating rod attached to the rear of the tonearm. I found that this is best done with tweezers. The weight then loops through an anti-skating lever that directs the monofilament line away from the tonearm and allows the weight to hang vertically above the plinth. Notch 2 is used for the Elan.

The tonearm wiring is hard-wired to a pair of shielded interconnects with gold-plated RCA phono connectors. An integral turntable ground wire is included with this cable pair to allow you to ground the MMF-2.1 to your phono preamp chassis.

The standard Goldring Elan cartridge is premounted to the tonearm, with VTA preadjusted at the factory. The Elan has a 15-micron spherical dia-

mond stylus. No performance curve was supplied, as it is with the more expensive cartridges. My Shure V15 Type V came with a 20-page booklet, with curves for frequency response and trackability versus recording velocity.

If you prefer, you can install a different cartridge. Music Hall supplies a plastic mounting pattern that you set onto the platter spindle. The pattern has three reference points that allow you to adjust the cartridge mounting screws so that the stylus-to-pivot and cartridge/headshell alignment are in accordance with specified dimensions.

I found the tracking force very easy to set up, even without a stylus force gauge. You simply remove the stylus guard and adjust the counterweight so the cartridge just floats at the record-playing level. Then you hold the counterweight in place and turn the force dial ring until the top of the scale reads zero. Finally, turn the counterweight to the recommended TF reading (1.7gm for the Elan). When I checked the TF with my stylus force gauge, it read

1.8gm, so the counterweight scale appears to be sufficiently accurate.

LISTENING TESTS

I used a number of LPs for my listening audition. I enjoy jazz and classical music, but I also played some popular music (well, popular from the '60s-'80s). I used the phono preamp in my Control Preamplifier with HeadRoom™ Module (*AE* 6/97, p. 8), a Parasound HCA-1000A power amp, and NHT SuperOne's and SW2P subwoofer.

The MMF and Goldring combination has a nice, warm midrange, with a slightly rolled-off treble that complements jazz very well. I don't believe it has a really extended deep-bass response when compared to the Shure

V15 type V, but it is no slouch either. It acquits itself quite nicely for a \$60 cartridge.

The table and cartridge had no trouble with the Shure Audio Obstacle Course test LP, or the high velocity tracks on the Stereo Review SR12 Stereo Test Record. The massed strings and choral voices were clear and well-defined—much more so than CDs of the same label and title. The Nutcracker Suite is one of my favorite classical recordings, and I have yet to find a CD that comes close to the Fritz Reiner/Chicago Symphony Orchestra LP (RCA Red Seal VCS-7100).

The MMF-2.1 brought out all the fine details in instruments such as the brushed cymbals, triangles, acoustic

guitar, strings, and the woody tone of the acoustic bass. I think it is a real price/performance bargain.

MEASUREMENTS

Ed Dell asked me to take as many objective measurements as I could. I have two records with test-tone tracks: Stereo Review's SR12 Stereo Test Record (1969) and *Hi-Fi News & Record Review's* Test Record (HFN-001, 1996). Many of these test tracks are designed for subjective listening evaluation, but I selected those I believed were best suited for measurement.

I measured the frequency response for the MMF-2.1 (*Fig. 1*) at the phono preamp output jacks. I established 0dB as 400mV using the 1kHz reference track on the SR12 test record. The overall response was determined by measuring the output voltage for the 19 warble tracks covering 20kHz down to 20Hz.

HF response rolled off gradually at each end of the audio spectrum, but remained within the ± 3 dB specification for the Elan. Music Hall recommends a cartridge loading of 150–400pF, 47k Ω . My preamp load is 100pF and 47k Ω .

Channel separation for the six test tracks is shown in *Table 1*. The results were essentially the same for the R-L and L-R tests. Goldring specifies -20 dB for the Elan at 1kHz, and I think that is probably within my measurement error range.

THD+N measurements proved difficult, since the test tones all have over 5% THD+N on the test records I used. One low-distortion 3kHz test tone for use with a wow-flutter meter measured 0.8% THD. Since there is no indication of the recorded THD+N of this test signal, it may or may not represent the actual performance of the phono cartridge.

My LED strobe showed the platter speed to be very slightly on the fast side, with one of the test bars on the strobe disk moving one bar width

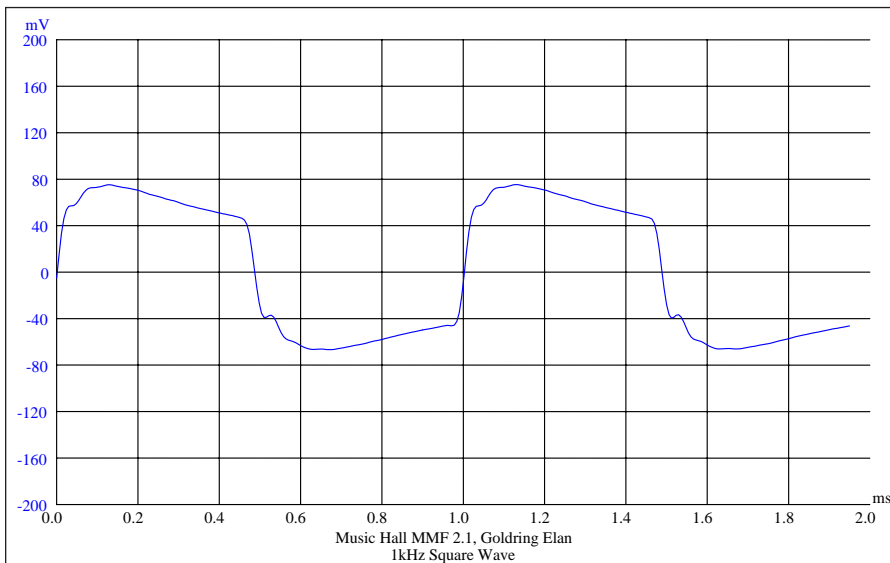


FIGURE 1: Frequency response.

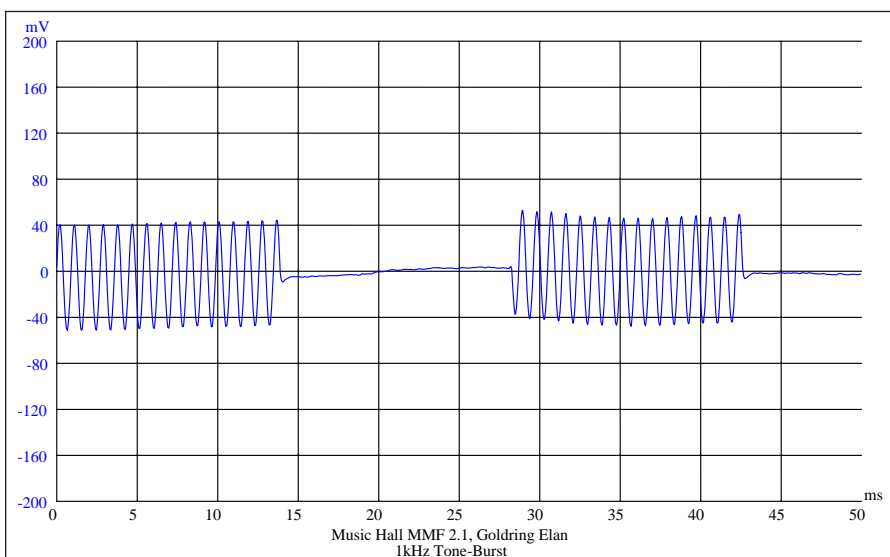


FIGURE 2: 1kHz square-wave response.

TABLE 1 CHANNEL SEPARATION	
FREQUENCY	SEPARATION dB
6.4kHz	-13.6
3.2kHz	-16.7
1.3kHz	-18.4
800Hz	-19.2
400Hz	-21.0

clockwise in 30 seconds. This is of no real-world consequence. There was no flutter or wow that I could observe with the strobe, which is synchronized to the 60Hz power line.

Figure 2 shows the cartridge re-

sponse to a 1kHz square-wave test track. The illustration in the test booklet shows a slight tilt and cupping in the "ideal" as-recorded waveform, so it does not represent a perfect square wave shape (I wonder whether any cut-

ter stylus can make an instantaneous 90° turn). The Elan shows a more rolled-off wave-shape, with a slight oscillation at the leading edges.

Figure 3 shows the response to a 1kHz tone burst. The Elan achieved very accurate results here, with no evidence of response dips, resonance, or spurious response for any tone burst in the sweep from 500Hz to 10kHz.

Figure 4 shows the MMF-2.1/Goldring Elan output spectrum reproducing a combined 300Hz + 4kHz intermodulation distortion (IMD) signal. The 4kHz signal is recorded at 7.5cm/s (-50dB rel), and the 300Hz signal is recorded at 9cm/s (-25dB rel). The 4.3kHz IMD product is -67dBr, and the 3.7kHz product is -61dBr. There are additional response peaks at or below -70dBr.

Interestingly, the SR12 test booklet states that the IMD tones are 400Hz and 4kHz. The spectrum analyzer and my comparison with a 300Hz oscillator tone show the lower frequency to be 300Hz.

The manufacturer's specifications and measured results are shown in Table 2. ❖

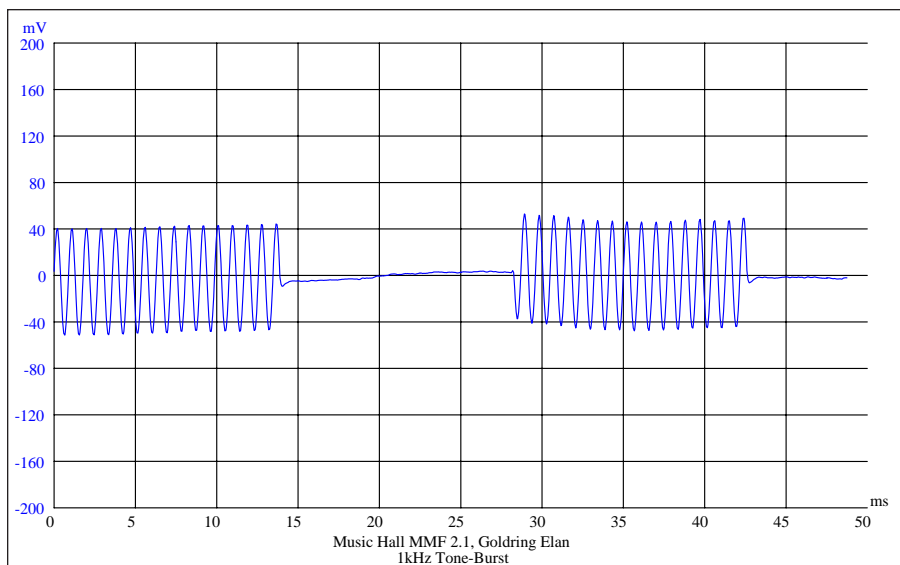


FIGURE 3: 1kHz tone burst.

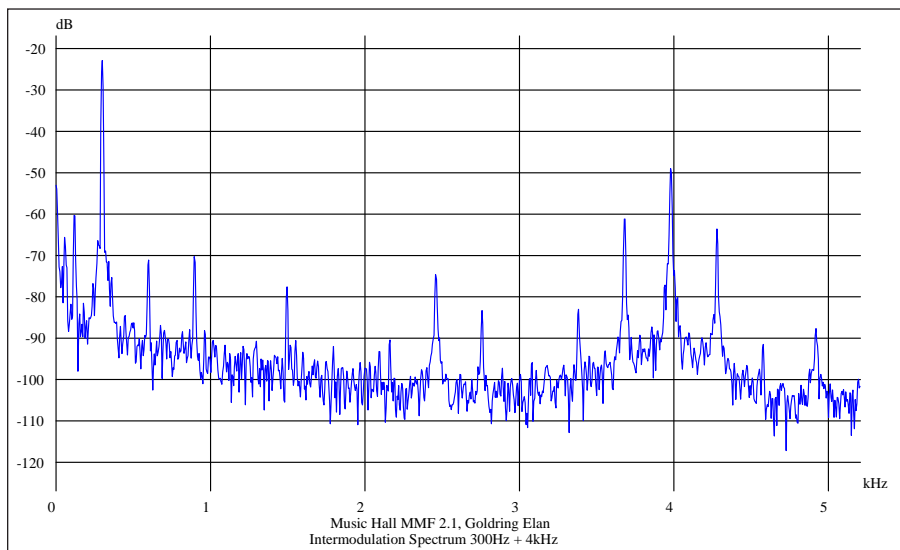


FIGURE 4: Spectrum of 300Hz + 4kHz intermodulation.

**TABLE 2
MEASURED PERFORMANCE**

PARAMETER	MANUFACTURER'S RATING	MEASURED RESULTS
Frequency response	20Hz-20kHz ±3dB	20Hz-20kHz
±2.91dB		
Separation	20dB, 1kHz	18.4dB, 1.3kHz
Tracking force range	1.5-3.0gm, 1.7gm nom.	
Recommended loading	150-400pF, 47kΩ	
Compliance	16µm/mN	
MM output	5mV, 1kHz, 5cm/s	
Wow and flutter	0.15%, 33-1/3, DIN 45-507	
Rumble	-70dB, DIN 45-539-B	
Speed error	±0.9%	
Power requirements	2VA	