

Authorized reprint of:
The Inner Ear Report magazine
Volume 15, #1, 2002/2003
85 Moorehouse Drive,
Toronto, Ontario,
Canada M1V 2E2
www.innerear.on.ca

Manley Steelhead MM/MC Gramophone Cartridge

Source: Manley Laboratories Inc.

Price: \$11,600.00 Cdn \$7,300.00 US

Rating: 4 musical notes

Written by Blair T. Rogers

TIER has presented several reviews of Manley Labs' hi-fi equipment over the past couple of years. Briefly, the company was founded by David and EveAnna Manley in 1993. In 1996 EveAnna successfully took over as CEO of the multi-million dollar Manley Laboratories Inc. with head office and manufacturing facilities in Chino, CA. EveAnna has been responsible for many new developments and improvements in both the hi-fi and professional recording equipment produced by her company. Audio enthusiasts have benefited greatly from this double-barreled engineering and development mindset.

Appearance:

Designed by Mitch Margolis, the Steelhead is a high performance tube phono preamplifier with a remote, solid-state power supply. I received an early production sample for review and it came with a faceplate finished in brushed gold, matching my Manley 300B linestage (reviewed in 13 #3). After September, 2001 the entire Manley line switched to a somewhat more sober but attractive brushed pewter finish.

The preamp module is full size: 17" x 15.5" x 3.5" and the 3/8 inch thick faceplate, drilled for rack mounting, is 19 inches wide. Cobalt blue LEDs are used to indicate gain and input selections. A diagonal row of four blue push buttons provide for full or partial muting (DIM), mono (SUM) and standby functions.

Three cartridge inputs are provided on the back of the preamp: two for moving-coil; one of which uses RCA jacks, the other a 5 pin connector; and one for moving-magnet cartridges using RCAs. There are two sets of buffered outputs: one variable, the other fixed; and three discrete circuit and chassis ground terminals.

The outboard power supply is housed in a black box about 13.5" x 11" x 4.5" and finished to the standard of the best high-end amplifiers. The thick, brushed black faceplate features the Manley Steelhead name in white script above a single red LED. The thick, shielded umbilical cord is terminated with a huge, sixteen pin connector. The mains cord is a standard IEC detachable type and plugs into the back of the PSU beside the master power switch. Both units can be left on standby or "sleep mode" indefinitely without operating voltages flowing through the tubes or electronics. Together, they weigh about 33 lbs.

Overall fit and finish are excellent. The volume control has a soft, opulent and luxurious feel. The rotary switches function without any mechanical slack. They are firm, positive and completely without electronic pops or resonances when used. The blue push buttons require only the slightest touch and are neatly countersunk into the fascia with bezel surrounds. Like the 300B linestage, the Steelhead feels and looks as if

it is meant to last well into the next century and beyond. On sensory impressions and styling alone, I'd call it the Duesenberg® of phonostages.

Technology:

The Steelhead has been built to industrial strength standards and incorporates a number of unique and carefully implemented technical features that set it apart from the crowd.

The most important of these innovations, in my opinion, is the front-end autoformer, a transformer for moving-coil cartridges with taps at 25, 50, 100, 200 and 400 ohms. Japanese audiophiles have been wise to the benefits of moving-coil step-up transformers for many years. Their use seems to be a fairly rare phenomenon among western audiophiles and more's the pity because they can do some wonderful things. With the Steelhead we have the ultimate in convenience because the input impedance that the cartridge sees can be changed at the twist of a switch on the front panel. This allows the listener to adjust the impedance to suit any MC cartridge in a matter of moments. In the most extreme cases, adjustments can be made from one record to the next.

The Steelhead autoformer was prototyped, tested and manufactured in the Manley Labs' magnetics department and they are rightfully proud of the achievement. It is a complex piece of iron that requires great skill to produce. It functions as a sort of impedance bridge between the cartridge and the first gain stage of the preamplifier by effectively converting the low-level cartridge signals from low-voltage and (relatively) high-current to (relatively) high-voltage and low-current. Have you ever considered how much detail is lost when the low-voltage cartridge signal is terminated by a 47K ohm resistor? You'll never know until you listen to the Steelhead. Another benefit of the autoformer is improved signal-to-noise ratio and even a bit of extra gain: anywhere from 2 to 12 dB additional voltage is available depending on the cartridge source impedance and the selected load setting.

If you prefer to use a moving-magnet cartridge

Now, on to cartridge termination capacitance! This is the other factor that has a significant effect on MC cartridge performance and is probably the most neglected of all. The interconnects between turntable and phonostage are typically recommended to be no more than 3 feet long because most audiophile-grade cables are highly capacitive. A little capacitance is ok, but too much can ruin the sound of even the best cartridge. Check with your cable manufacturer to determine the capacitance per foot they claim for their phono cables. My Purist Audio Colossus interconnects clock in at 17 pico-Farads per foot but your capacitance may differ. Subtract the total cable capacitance per channel from the termination load suggested by the cartridge manufacturer and then dial in the difference on the front panel. The selector switch allows increments in steps of 10 pF from 0 to 100 pF in combination with steps of 100 pF from 0 to 1000 pF. The exact effect of this adjustment eluded me for several months but once I got into the zone I realized I couldn't live without it.

As one would expect, the Steelhead is a low negative-feedback design with a high performance (cascode) front end. But there are more treats in store for those who truly love the sound of vinyl. High fidelity requires accurate RIAA equalization. The Steelhead takes it all the way by including the three main time constants at 3180, 318 and 75 microseconds, as well as the typically ignored 3.2 microsecond pole. This ensures flat response right out to 50 kHz

Preamplifier gain is switch selectable from the front panel in 5 dB steps from 50 to 65dB at 1 kHz. This is a sensible and convenient range for matching cartridges of varying sensitivity and the drive voltage requirements of downstream components. It also makes it easy to switch cartridges for those who have tone arms with interchangeable arm wands or turntables with more than one tone arm.

A powerful buffered volume control permits the use of long interconnects and enables the driving of a

power amplifier directly through the low impedance all-tube buffered output circuit. A separate fixed level buffered output is available for those preferring to by-pass the volume control to drive a linestage directly. Six tubes in total are used: two 6922s and four 7044s. There is no substitute for the 7044 tube but it is an interesting choice and one rarely seen in any configuration. It's a beefy nine-pin dual triode developed for computer applications or other high-stress, On-off¹ control functions. Maximum plate dissipation is 8 watts and in this application it should last for years. And I can't fault...

The Sound:

The overall sound of the Steelhead is neutral and authoritative; neither "tubey" and warm nor analytical and cold. The neutrality was easily established in that the Steelhead makes every record sound completely different. It's what's in the groove that determines what you hear. And you hear everything because the noise floor is incredibly low.

Connecting from the variable outputs to the Manley 300B linestage made the sound fuller and more detailed; more relaxed and natural with the 300Bs in the picture. I think this effect can be attributed to the awesome line driving capability of the linestage overcoming the 20+ foot length of the Nordost SPM interconnects I'm using between the pre-amp and amplifier.

Benjamin Britten's Prince of the Pagodas [STS-15081/82] is one of the most obscurely produced records in my collection. In the past, I had little interest in it because I just couldn't hear enough detail to pull all the musical cues and themes together. A good test for the Steelhead
Another evening, in the mood for jazz, I put the eponymous Sonny Rollins Blue Note mono recording [BST 815-42] on my Garrard 401. Pressing the SUM button for true mono reproduction, I sat back and cued up "How Are Things in Glocca Morra?" The monophonic image was wide, deep and solid; and the lower range of the tenor saxophone was liquid, rich and intoxicating.

Later that night I played The Amazing Bud Powell: The Scene Changes [BN 4009], but I didn't listen to the music: I listened to Bud Powell's genius and realized how much he had been influenced by Charlie Parker and Fats Waller.

On to more classics: the Previn/London Symphony Orchestra recording of Rachmaninov's exquisite Symphonic Dances [ASD 3259]. This is an extraordinarily beautiful reading of this piece. Production and engineering are by the Bishop/Parker team and they capture nuances in the score that I had never heard before the Steelhead. It was this record that helped me realize that the Steelhead is a fine phonostage. Much of the illusion of two-channel stereo depends on phase accuracy; and this is one of the QUAD ESL-63s' strongest cards. The two components conspired to reproduce an unwavering and seamless holographic presence with powerful, solid forte passages and startling climaxes.

At this point I dialed-in the capacitive loading that opened up the dynamics, details and treble extension of my Crown Jewel SE cartridge. Others have remarked on this; but for me, it was the first time I could truthfully say that I felt as if an extra octave had opened up on the top of every record I played. This was particularly noticeable on the British pressings of the stereo EMIs, DECCAs and Lyritas.

Synopsis and Commentary:

The Steelhead is a phonostage capable of extraordinary sound. If you want the best, I'll challenge you to do something very daring: trust your own ears. Audition the Steelhead

A couple of caveats: be sure that your cartridge is set up correctly, and I mean really tweaked. If the

alignment is even slightly off, this phonostage will sound wrong. Absolute alignment of the stylus in the groove is a must-have for high performance stereo because it greatly enhances phase and time accuracy between channels. I tend to favour the venerable, highly developed ET-2 tone arm for this job. There are many excellent pivoted tone arms available in North America: up to twelve inches if you must go to extremes. Just remember that the only true low-distortion configuration is the lateral tracking tone arm. Try one and you will hear a difference in your records that is obvious and clear: the absence of tracing distortion.

If your set-up is correct then the music should breathe, as it does with a good, low negative-feedback design. Listen with above-average quality, wideband loudspeakers: low distortion electrostatics if possible. For most speakers, apart from mini-monitors, deep, tuneful bass will be a given; so concentrate more on high frequency details, an area in which the Steelhead is breathtaking. Experience the solid, firm, unequivocal reproduction of loud, complex passages that lesser designs cannot provide. And the midrange: spin some Sinatra, Mel Torme or your favourite opera: you'll get it!

Is this the finest phonostage I've ever heard playing vinyl? Probably. Will it be the one that got away? Possibly not.

The Inner Ear Report
A magazine worth listening to

www.innerear.on.ca

Go back to the [Steelhead Page](#)

www.manleylabs.com