Heil PR 781 Microphone

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The Heil PR 781 microphone is cross-marketed as a professional unit for recording and broadcasting use, as well as a near-top-of-the-line amateur station microphone. While the microphone appears to have ports along the sides, they may be part of the off-axis rejection system. This microphone responds to input directly from the windscreen in the front, not from the sides.

Bottom Line

The PR 781 microphone from Heil brings professional-quality sound to the amateur station. This high-quality mic can sound good as-is, or can easily be tailored to taste using the equalization found in many modern transceivers.

The microphone comes with a sturdy cast-metal SM-3 mic clip. This attaches securely to the approximately 1-inch-long rear barrel of the PR 781 and has ⅝ × 27 threads that fit most standard mic stands and bases made since before World War II. In addition, an easily removable screw-in insert adapts the mic clip to the narrower-sized studs found on some shock mounts. The microphone is finished in an attractive and functional black satin epoxy with matching windscreen and side screen. The PR 781G, offered at the same price, has the same finish except it has a gold-tone windscreen and side screen.

The mic includes Heil's PR dynamic element with a low-mass aluminum diaphragm. It is specified with a frequency response of 50 to 16,000 Hz and an output level of –55 dB into a 600 Ω load. The response is almost flat, but has a rising characteristic at the higher ranges to provide improved articulation for voice use. The pattern is cardioid, with a rear null that can be used to reduce equipment noise pickup.

Hooking It Up

The microphone uses a three-connection male XLR plug at the rear. This is the standard connector used in professional audio systems, delivering a nominal 600 Ω balanced connection, along with a ground lead. To hook this to your transceiver, you will need to either fabricate a cable or order one of the Heil CC-1-XLR series adapter cables. These are available to match the eight-pin round mic connectors used by Kenwood (also Elecraft), Icom, TEN-TEC, Yaesu, and others. A modular-plug version for Yaesu radios is also available. These $40 cables include a break-out cable at the radio end that can accept a ¼-inch mono phone plug from a foot switch, such as the Heil FS-3, or a push-to-talk stand, such as the Heil LB-1 (see Figure 5) or CB-1. The microphone will also be at home on any of the available Heil boom and shock-mount systems.

Figure 5 — The Heil PR 781 mounted on a push-to-talk mic stand (optional) using the included SM-3 mic clip. The SM-3 will fit on any stand, base, or boom system that accepts a typical ⅝ × 27 threaded mount. It also includes an adapter for a smaller stud size found on some boom systems. (The black LB-1 stand shown was packaged with the Heil PR 10 reviewed in the February 2018 issue of *QST*. Currently, the red LB-1R is available.)

How It Plays

I tested the microphone using my Elecraft K3 transceiver, first using the built-in **MONITOR** function and then in on-the-air comparisons. For my monitor testing, I started with the transmit equalizer set to no compensation (flat response), with the transmit bandwidth set to ESSB, so I could hear more of the mic response. I compared the sound to that from my usual SSB desk mic, a Heil HC-5 element in an Astatic D-10 case on a grip stand. I thought that the PR 781 sounded crisper and more natural than my usual mic. When I used my normal equalization settings, I still preferred the sound of the PR 781.

I next set up the K3 transmit equalizer the way I would when using a microphone with a flat response. This configuration has no bass boost, a gradual increase to about 600 Hz, and then a more rapid increase in the higher registers to +10 dB at the high end. I sounded much more natural with more low-end response, but having a lot of transmit power in the low-end speech components uses a lot of transmitter power without adding much to the information content. By reducing the response below 300 Hz significantly, I made it more efficient for communication.

To finalize the comparisons, I called upon a local friend, the late Bruce Moore, N1ZU. Bruce suffered through a blind testing exercise, similar to what I did on my monitor. We picked a frequency high in the apparently dead 10-meter band to avoid interfering with anyone. With medium to high power and Yagi antennas, at 5 miles over flat terrain our signals were strong enough that there was little noise, so Bruce could hear the audio response without external artifacts. He concluded that the PR 781 sounded much clearer and more like my in-person voice, with much more low-end response and less raspiness.

My conclusion is that any mic you use with your transceiver, including this one, will do best with the equalization, if you have it, carefully adjusted. Depending on your voice, if you don't use equalization settings, you will likely be happy with the PR 781. You may like it even more with some added equalization, and can likely make it sound just the way you want.

Documentation

The PR 781 comes with a single folded information sheet describing the microphone, including its specifications and particular instruction on talking into the end, not the side. It also shows a number of accessories, including booms, stands, switches, and a Bluetooth adapter.

Manufacturer: Heil Sound, Ltd., 5800 N. Illinois St., Fairview Heights, IL 62208; **www.heilsound.com**. Price: PR 781 (or 781G) with SM-3 mic clip, $200. CC-1-XLR series adapter cable, $40; CB-1 stand, $77; LB-1R stand, $100.