Audio Research Reference 160M monoblock power amplifier

At a recent dealer event in Seattle, after being impressed by the musical rightness of an Audio Research Corp. LS28 preamplifier and VT80SE power amplifier driving a pair of Sonus Faber Guarneri loudspeakers, I spoke with ARC's Dave Gordon about reviewing one of the company's new amplifiers. Less than a month later, two ARC Reference 160M tubed monoblock amplifiers ($30,000/pair) were headed my way.

Soon thereafter I received a huge, pallet-bound stack of boxes as tall as my neck: the two monoblocks, plus one ARC preamp—their hefty, one-piece Reference 6 (REF 6) line preamplifier ($14,000), which Michael Fremer reviewed in December 2016. Standing on tiptoe to disassemble that tower

and get everything into my music room and set up? Loads of fun!

Light of weight, but . . .

When Dave Gordon visited to check out my system and help set up the Reference 160Ms, he removed their top covers and carefully installed the four KT150 output and two 6H30 gain-stage tubes, each tube bearing a label indicating the socket that tube was to be inserted in. He then connected each amp's cooling fan—mounted on the back of the removable tube cage/cover—by plugging its electrical lead into a 12V socket on the amp itself.

One thing that made unpacking the 160Ms relatively easy was that each weighs only 56.2 lb and, for a monoblock, isn't huge: 19" wide by 10" high by 19.25" deep, including the handles on the front. I had no trouble moving them around on my own, either by grabbing the handles or taking hold of their undersides toward the rear, where most of the weight is. But I'm used to heavy amps—my reference Pass Laboratories XA200.8 monoblocks ($42,000/pair) weigh 160 lb each, and the Dan D'Agostino Master Systems Progression monoblocks ($38,000/pair), which I reviewed in October 2017, weigh 125 lb each. I couldn't help wondering if light of weight would mean light of sound.

After his visit, Gordon explained by phone that, because the 160M's design allows heat to dissipate from the tubes, there's no need for the huge, heavy heatsinks that greatly increase the weight of solid-state amplifiers. He also noted that ARC prefers the sound of E-core transformers, using toroidal transformers only in their preamps (along with R- and E-core transformers). All transformers are designed by ARC, and custom-manufactured out of house in North America.

ARC also designs its own critical capacitors and hook-up wire, also outsourced, and their printed circuit boards. The 160M is the first ARC product to include a four-layer PCB; it's assembled by hand using a special solder, and is composed of materials that Gordon said sound better. "We

think a properly laid out circuit board sounds better than point-to-point wiring, because it eliminates connections that act as antennas for noise," he explained. "We've been able to lower the noise floor remarkably with a four-layer board."

The Reference 160M is the first amp in a series that is projected to include at least one bigger mono sibling and two stereo cousins. It's also ARC's first Reference amp with single-ended inputs and fuses for each tube, and one of their first amps to offer an auto-bias system that both compensates for tube aging and allows the use of pentodes other than the supplied KT150s.

Those KT150 tubes are used in many other ARC amplifiers. "Sonically, we like everything that they do," said Gordon. "They're more dynamic, have a finer grain structure, deliver more information, a bigger stage, and a great sense of air. Their authority is pretty spectacular, and there are no downsides except their price. They also last 50% longer. We've gone from 2000 hours with our former 6550 and KT120s to 3000 hours with the KT150." Given that ARC recommends 400–600 hours of break-in for the 160M to achieve its full potential, the longer tube life is significant.

The circuits of ARC products are tuned using various damping devices, and are voiced using, primarily, speakers made by Wilson and Sonus Faber, and sometimes Magnepan. "We started designing with Wilson Grand SLAMMs in the late '90s, when Dave Wilson brought over a pair," Gordon noted. "We've since used the MAXX, MAXX 2, MAXX 3, WATT/Puppy 5, 6, and 8, Sasha 1 and 2, and now the Alexia 2. The cabling we use with them is mainly Transparent Reference XL and Shunyata, but we've also listened to Nordost, Kimber, Cardas, and AudioQuest to ensure no odd interactions."

Gordon insisted that ARC's design philosophy and goals have remained the same since the late William Zane Johnson founded the company in 1970, at a time when no manufacturers of tubed home-audio hi-fi gear remained in the US. "Bill played the piano and didn't think that solid-state equipment sounded like music," Gordon said. "Solid-state was efficient, less expensive to build, and not as hot as tubed gear, but Bill believed that we can hear things with tube equipment we can't measure. He also valued attributes that many people don't associate with tubes. He wasn't interested in sweetening, softening, or making music sound more listenable in a system that's maybe a little on the edge."

Bill Johnson designed all of ARC's earliest products, then brought in other engineers. In 2008, at age 81, Johnson sold ARC to the Italian group Fine Sounds, who, according to Gordon, "understood who we were and said they wouldn't change distribution or sound." Fine Sounds, since renamed the McIntosh Group, also owns McIntosh Laboratory, Sonus Faber, Sumiko, and Wadia. The last ARC engineer who worked with Bill Johnson,

Ward Fiebiger, had some input into the Reference 160M before his death last year.

"We believe that tubes have a character that draws you," Gordon said. "That's the only reason to buy tubed products. We've designed our products so that you can turn them on, not have to worry about anything, and just enjoy the music."

Features

On the Reference 160M's front panel are four buttons, labeled Power, Meter Light, Tube Monitor, and Ultralinear/Triode. When Power is depressed, a green LED blinks for two minutes until the voltage stabilizes and the monoblock is ready to pass signals. (I always allowed a good hour for warm-up after that.) The acrylic "tube window" on the front panel is made with two layers, etched to create an illuminated power meter; the Meter Light button toggles through three levels of illumination plus an off position. I loved seeing the large white watt meters illumined. The Tube Monitor Button, when pushed and held, illuminates an LED on the front panel for each tube; these light up green when a tube is okay. The fourth button switches between Ultralinear (*ca* 150Wpc) and Triode (*ca* 75Wpc) modes. In Triode, the green LED above the button turns a blue/white that's hard to distinguish from green unless you're close to it and looking at it from the right angle. But as you'll read below, once you listen, you'll be able to tell what mode the 160Ms are in.

Given that the 160M's manual is available online, here I confine my description of its features to those I consider most important. First among these is that the 160M requires a 20-amp power cord (a 12-gauge, 20-amp cord is supplied), which may be a consideration for audiophiles who've already dropped considerable sums of money on aftermarket 15-amp power cords.

The 12 bolts that must be removed to lift off the 160M's cover to install the tubes unscrew painlessly with a tool supplied by ARC—nothing like the horror I endured every time I needed to bias my old, considerably heavier Jadis Defy-7 by turning it on its side and removing from its bottom plate 16 frequently jamming screws.

The cooling fan's speed is controlled with one of three small toggle switches on the 160M's rear. With the fan switched to High, I could hear it whirring in quiet musical passages; I stuck with Low. The only problem I encountered was that one fan didn't turn on—its connector cable had developed a kink. This kink master soon managed to bend the connection.

The other toggles enable auto shut-off (which powers-down the amp after 2 hours of no signal, and which I disabled), and the choice of balanced or single-ended inputs. As I quickly learned, if you use balanced cables (XLRs) but forget to flip the switch from single-ended (RCA), you'll hear lots of noise. Otherwise, the 160Ms were remarkably quiet. (Ditto the REF 6 preamp, at the volume levels I used.)