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HP's WORKSHOP

One Thousand Watts of Transparent Power

Bryston 28B Monoblock Power Amplifier

Harry Pearson



For about 30 years, the Canadian electronics firm Bryston has been the darling of the professional sound set. Its electronics are unconditionally stable—you never heard of a Bryston blowing up, did you, even when heavily punished? And who else dares guarantee its products for t-w-e-n-t-y years?

Yes, it's all solid-state, all the time. And (each) of its older amps sounds just like its brothers sonically, excepting perhaps the fringe benefits from higher and lower power outputs. Adored by the Flat Earth crowd (all amps sound alike) mainly because of its exceptionally linear frequency response, Bryston hasn't been the darling of the high falutin' high-

end crowd (though it has been of the professional crowd). And, falutin' or not, that certainly includes me, yr. Humble Reviewer.

But, last January during the Las Vegas audio orgies, and amidst the esoterica on display at T.H.E. Show, I went in to hear what Magnepan was up to at the Alexis Park. Therein, the company had assembled an unusual arrangement of its smaller single-panel speakers, the MMC-2 and DW-1 woofers. A brief recap:

There were two center channel panels (that canted out from a flat position on the wall), left/right matching panels—all of planar design and in this application, motorized for the canting—as well as planar woofer panels, under what looked like, and were for all practical purposes,

end tables... You had to hear it to believe it: a terrific spread, and for once, quite wide dynamic contrasts, and from a Maggie no less, plus a midrange and high end lower in distortion than any of the company's smaller speakers I've heard.

Little did I know, at the time, what was driving this system and what accounted for the extra transparency, dynamic quickness, and low distortion. Given Magnepan's long-time association with Audio Research, I assumed I was hearing its tubed gear. But, oh no, said Wendell Diller, Maggie's front man and marketing manager, I had been hearing Bryston solid-state electronics! Boggle, boggle went the brain.

One thing led to another, and, some

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SPECS/PRICING

Output power: 1000W @ 8 ohms, 1800W

@ 4 ohms

Inputs: Balanced on XLR jacks (x2),

unbalanced on RCA jacks (x2)

Dimensions: 17" x 8" x 21"

Weight: 100 lbs. each

Price: \$8000 each

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months later, I received, from James Tanner of Bryston, a pair of the 1000-watt 28B amps, its cutting-edge design, and the forerunner of future Bryston amps to come. Out of the box and with no warm-up at all, they sounded impressive. A solid-state first. Little did I know what heights they were going to attain.

What first struck me were the two top octaves, which were sweet (unusual for solid-state), and when I say "sweet" here, I mean in the sense that music is at its best. Tubed gear can achieve such naturalness, but not usually this cleanly and purely. It was an extension into the ionosphere (further out than the best tubed units), yet, with no added harmonic fatness, of either the liquid or dry varieties.

I expected, given the thousand-watt rating (into eight ohms) slam-bang bass, but hardly an extended bass as articulated as those highs without any special "character" for my ear to hang onto. Almost always, when the two bottom octaves are reproduced, there is an audible coloration, not necessarily, mind you, a bad or untruthful one, but a "character," not unlike that exhibited by low frequencies in different concert halls. To wit, it can be "fat," "dark," "lean," "boomy"—or even boxy.

The 28B lets you in. That is to say, you can and do hear past the little cues by which other amplifiers notify you of their

presence in the listening experience. Put another way: it doesn't give you a peg to hang your aural cap on. Or, let me say, not one I can yet identify. Indeed at first I thought it a little bland because of the lack of those tiny colorations the ear, at the deepest level, pegs onto.

When you come across a component that is better in some significant ways than what you've heard before, the experience tends to derail the train of acute insights, critical or otherwise. For those, you sometimes have to wait until you've heard its better.

The noise floor is lower than any other amplifier in my experience. And the power output pretty much makes ridiculous the idea that this amp will clip at any less than a deadly listening level. What that means is that you will (and do) get a sense of increased dynamic range. This means you will be able to hear gradations at the soft end of the dynamic spectrum, the discrete differences between the *piano* and the *pianissimos*. The same is true at the other end of the spectrum because of its refusal to clip and thus distort the gradations between the distinct stages of loudness; you can hear the dynamic shadings, *sans* distortion, between a simple *forte* and the several gradations between that and the *fortissimo*. Without amplifier clipping, even electrostatics can sound comfortable at more intense levels (clipping is a horror on an electrostatic). You might analogize between the amp's power and a huge engine in a sports car: There is greater ease at every output level, and especially those when both car and amp might normally be coasting. (It's more like sailing, actually, than coasting.)

Is there an overall "character" or slight cast of tonal color? Well, the 28B certainly isn't dark (or yin) sounding, nor is it awash in a kind of dry whiteness. Or dry anything. There are no textures. I know this because we exposed it, in listening sessions, to the big Scaena system, the new Nola Viper Reference II speakers, and the wondrous (and utterly revealing) JansZen One Hybrid electrostatic and mated it with front-end components of all sorts, from the Conrad-Johnson ART III linestage to the McIntosh 2301 linestage, and sources LP and CD. In the

case of the JansZen, there was a purity to the sound I am not sure I've heard from reproduced music before, and I don't mean "purity" in the sense of something added, but rather in the sense of much subtracted. The JansZen, like the Bryston 28, gives you no obvious hook for your ear to latch onto. You find yourself almost forced, that is, left to listen to the music per se. Understand that most components have little tics and quirks, usually all but inaudible, that the ear, that supreme scanning device, attaches itself to and lets the brain think, "Aha, that isn't real; it's unreal, that is, reproduced." And understand that I'm not saying that I find myself in the presence of the real thing here, but free to focus on the music itself, which still means you'll hear the upstream currents and eddies of coloration. Oddly enough, your first impression might be that the amp sounds a bit "bland," but then, as the transients, the dynamics, the harmonics suspend themselves *there* in space, the amazement begins.

As the amp came into its own, it revealed as many gradations in the recreation of a soundstage and hall as it did in the dynamic domain. The 28Bs can and do delineate different "depths" on the stage and so with, what is for me, a unique precision. Not all stages and halls are shaped the same way. On the stage, if an amplifier reproduces front-to-back depth, it either reproduces a great deal or a sense of space without dimensional images on that stage, hence a kind of flattening effect takes place. Because the images are flat, the depth, with some units, sounds "enhanced" or slightly artificial, as in doctored. With this Bryston, you can hear the teardrop shape of Orchestra Hall (pre-renovation), the deep boxy shape of Symphony Hall in Boston, but with a real sense of the structural character of the stage. I am not saying that other amps don't give you a general feel for the sounds of these halls; they do. But the Bryston goes a step further, and lets you hear the side walls (an amazement if you listen to the Mercury recordings made with the Eastman Rochester group), and even the positioning, in height and in distance from the back wall of the risers upon which some of the players sit. And

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a better sense of the ambient space in front of the stage. (To wit, Carnegie is shaped like a bowl; Symphony Hall like a shoebox.) And it does this in a perfectly natural fashion, so natural you may not at first be aware of it. It is not an HD enhancement, it is the very opposite, a lack of that, a cutting away of another scrim between the mikes and the musicians.

These observations—and I add an important “so far”—are the result of several months of intensive listening, under virtually every circumstance and condition I could summon. And I don't think I know all there is to know about the 28B's sound. And so you can be assured it is a subject to which I shall, perhaps in bits and pieces, return.

The Man Behind the 28B

I asked James Tanner, who is both a part owner of Bryston and the company's national sales manager, how came the auditory revelations that led to the SST series of amps, and its crowning glory, the 28B. And asked him if there were technical reasons for some of the things I was hearing. In his own words:

“Most people in our industry typically sit on only one side of the fence and never experience the other. Bryston has been involved in audio at the professional as well as the consumer level for over 35 years now. It has been my good fortune over 30 years to be able to sit in both professional and domestic camps and experience first hand the recording and the playback end of this business.

“My first experience was many years ago when Jack Renner of Telarc records came to Canada to do a jazz recording with Oscar Peterson at Manta Sound Studio in Toronto. He called me and asked if I would bring down some Bryston amplifiers to the studio so they could use them in the recording (he did not like what the studio was using). Anyway, I gladly volunteered but only if I could come down and sit through the three-day session. My pleading worked and I was able to go out into the recording hall and listen, first hand, to Oscar and Ray Brown, then back into the control room and listen

to the playback. Three days later I took the CD home and listened to it on my home audio system. I have to say I was shocked at how bad the CD sounded on my home system compared to the live event or even the studio experience. I decided then and there getting the translation from the live event to a playback system as accurately as possible would be my on-going goal at Bryston.

A Technical Word or So

“From the technical side, Motorola released a newly developed output transistor that allowed us to make a number of significant circuit changes in our SST amplifiers. More, Bryston developed a new input stage that very significantly reduced the noise floor and various types and kinds of distortion. We were looking to make the amps easier to listen to and closer to the live sound. Since live sound is the original absolute, that only made sense. Some of this had to do with power supply design (to reduce talk-through from other channels, and a lot of it had to do with making sure the distortion was less at lower power levels than at high power levels. This is not typical of solid-state products, but it is of tube electronics.

And Even More Technical

“When the transistor was first invented, it functioned only in one polarity. That meant that there was asymmetry in amplification circuits, resulting in distortion of the signal. Later the other polarity of transistor was developed, making it possible to make a symmetrical “complementary” circuit, thus reducing distortion.

“Unfortunately, these opposite polarity transistors are not exact matches to each other. They have differences in bandwidth, differences in threshold voltage, and differences in the way their respective gains track both voltage and current change. Thus, there continued to be small variations in symmetry, revealing subtle but audible amounts of distortion. These

distortions were worse with increasing frequency, giving a characteristic haze or graininess to transistor amplifier sound.

“In most of the amplifier circuitry, the above asymmetries can be compensated for with proper design, but the output stage of a power amplifier is in direct contact with the speaker load, and thus experiences large variations in both voltage and current with the signal. It is thus subject to ‘worst case’ conditions for those asymmetrical distortions remaining. This is why Bryston developed the Quad-Complementary output stage. The name stems partly from the fact that it requires at least four transistors to assemble the final section of the output stage, one of each polarity on both sides of the push-pull output section.

“In this way, it became possible to eliminate almost all of the remaining asymmetry in the output stage of an amplifier, because each transistor is paired with another of its opposite number. This creates what amounts to a compound device, displaying the mixed characteristics of both. Thus the upper and lower halves of the output stage match each other's dynamic characteristic exactly and at both high and low levels. Signal distortion is virtually eliminated.

“This circuit also displays advantages in some other areas, like faster response and lower input drive current for the same output power. Those characteristics give the amplifier lower distortion in all areas, but especially in the important high frequencies. Thus a Bryston amplifier does not display the characteristic high frequency haze or grain often heard in other transistor amps.”

One more thing I asked, and found out: There are 32 matched bipolar transistors in the amp, a 2000 watt power transformer, as well as metal film resistors and polypropylene caps.

I have asked for this information in order to understand the whys behind what I heard, and fortunately, Tanner was able to correlate with my initial observations how Bryston had achieved the results I heard. **TAS**

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