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## Bryston Model T Loudspeakers



Note: Measurements taken in the anechoic chamber at Canada's National Research Council can be found through this link.

As I wandered the myriad high-end exhibits at this year's Consumer Electronics Show, I was delighted to see such a wide assortment of products due to be introduced sometime this year, in particular some promising new speakers from companies such as Sonus Faber, T+A, and Magico. While in one of the larger rooms, shared by Thiel, Torus Power, and Bryston, I saw something even more alluring: Bryston's all-new Model T loudspeakers. The Model T is the first speaker ever to be released by Bryston, a company that, until now, has been known only for its formidable amplifiers, preamplifiers, and digital audio products.

After speaking with James Tanner, Bryston's VP of sales and marketing, I learned that the Model T began life as a personal project of his, and was never intended to be heard by the public. His original goal, Tanner explained, was to design a fully active, no-compromise speaker system with which he could

accurately assess Bryston electronics at home. As neither he nor Bryston had ever designed a speaker

from scratch, Tanner knew he was going to need some help. So, after thoroughly exploring his options, Tanner enlisted speaker engineer Andrew Welker, of Canada's Axiom Audio. Tanner knew Welker, and that Axiom is one of the few Canadian audio companies that had on-site its own anechoic chamber and the required measurement equipment for such an undertaking. Tanner, Welker, and Axiom's founder, Ian Colquhoun, worked together for two years before Tanner was satisfied enough with the results to install a prototype in his home listening room.

After that, it wasn't long before dealers and friends heard this system and convinced Tanner to offer his speaker commercially. But that wasn't going to be as simple as giving the go-ahead for mass production -- Tanner recognized that the complexity and cost of his fully active speaker might deter some. So he went back to Axiom to develop two more versions of his prototype, with simpler crossover designs. The humblest of the three, called simply the Model T (\$6495 USD per pair), has an inboard crossover network configured for only passive use. The next level up, the Model T Signature, offers a choice of passive (\$7495/pair) or active (\$9490/pair) external crossovers. Despite these differences, I'm told that all three versions offer similar levels of power handling and sound-pressure levels (SPLs), and maintain extremely low levels of distortion.



#### From the ground up

Measuring 52.5"H x 10.5"W x 16.5"D and weighing a stout 108 pounds, each version of the Model T is a somewhat imposing speaker. All can be had in your choice of vinyl finishes -- Black Ash, Boston Cherry, or Natural Cherry (Walnut is on the way) -- or, if your tastes are a little more upscale, you can choose from a number of standard real-wood veneers for a surcharge of \$1000/pair. If you'd prefer your own exotic finish, such as the Rosewood my review samples came in, Bryston will do their best to accommodate you for \$2000/pair over the base price. Rounding out the options is a hefty pair of outriggers (\$400/pair), which I highly recommend -- they significantly improve lateral stability.

At first glance, it's clear that the Model T bears a striking resemblance to Axiom's flagship loudspeaker, the M80. The overall cabinet shape, the port design, and the arrangement of the twin tweeters and twin midrange drivers is very similar -- if it weren't for the addition of a third bass driver, the Model T could easily be mistaken for a new Axiom flagship model. Appearance, however, is about all the two speakers have in common. The Model T's cabinet is far more substantial, and has three rear-firing ports positioned near the top, one directly behind the upper tweeter. All versions of the Model T are built of thick, reinforced walls of MDF, tapered to help eliminate resonances and internal standing waves. The drivers are newly designed, and the front baffle is 1.5" thick and connected to a vertical brace placed at the center of the cabinet that runs the entire height of the speaker. This brace connects 12 interlocking horizontal braces, uniquely staggered front and back, in an effort to provide tremendous rigidity to further eliminate resonances.

When I asked Tanner why he uses so many drivers, he said that the main advantage of using multiple drivers is that it increases power handling and the sound-pressure levels achievable before compression occurs. This proves quite important; even at modest levels, dynamic peaks can be very demanding. Tanner said that the reproduction of soundstages can be vastly improved by multiple drivers, assuming careful design. Of course, this has a downside, as the overall design of the speaker is necessarily much

more complex. The interactions among all those drivers means countless measurements must be taken, both on and off the driver axes, to ensure that all drivers are working together properly, and that the resulting response measures as flat as possible.

Bryston makes no effort to conceal the fact that they worked closely with Axiom to develop all of the drivers that the Model T employs. In fact, if you look closely enough, you can see Axiom's name stamped into the flange of each of the 5.5" midrange drivers. These have ceramic-coated composite aluminum cones, die-cast aluminum frames, and FEA-optimized motors. Peeking inside the cabinet, I was surprised to see that each midrange is housed in its own tapered, ribbed plastic enclosure within the cabinet, and that all of the internal wiring is of heavy gauge and high quality. The tweeters bear Bryston's name, and have 1" domes of pure titanium, ferrofluid cooling, temperature-stable ferrite magnets, and motor systems optimized using finite element analysis (FEA).



Providing the Model T with one of the most impressively accurate, well-textured, and extended bottom ends I have heard from a speaker this side of \$10,000/pair is a trio of 8" bass drivers, each with a ceramic-coated composite aluminum cone, a large-diameter voice coil on a high-temperature fiberglass former, a beefy die-cast aluminum frame, and, of course, an FEA-optimized motor system. Holding each of these heavyweights in place are eight large screws that fit tightly into brass inserts pressed into the cabinet -- a quality measure I've rarely seen used in a speaker of this price. My review samples did have some fit'n'finish issues, however: gaps around the bass drivers wide enough in some areas to reveal the raw MDF under the veneer. The lightweight five-way binding post terminals are mostly made of molded plastic, with limited brass traces and thin brass jumpers. Considering the \$2000 surcharge for the optional veneer, and the high-quality internal crossovers, wiring, and other components used in the Model T, I'm not sure which of these issues I find more disconcerting.

Before replacing the sizable bass driver I'd removed to peek inside the cabinet, I checked out the crossover network used in the base Model T and found it substantial. Said to be built using high-quality, carefully selected components, the network was designed for ultralow distortion and high power handling. The passive version of the Model T Signature significantly ups the ante with an external network housed in its own metal chassis and upgraded with a number of higher-quality components. Though the Model T Signature will lighten your wallet by another \$1000, it's still somewhat of a bargain

when you consider that each of these external networks is built using mil-spec-quality circuit boards, thick copper traces, air-core inductors, premium silver solder for all connections, proprietary Bryston capacitors, and improved heat dissipation. Additionally, the Signature's passive network allows for triwiring or triamping, and can be replaced altogether should you opt for the active version, which substitutes the passive outboard crossover with Bryston's custom electronic crossover, the AX-1. The active version requires three channels of amplification per speaker, and costs \$2995 more than the base Model T, but will provide you with the best performance this speaker can offer. The crossover frequencies for all three Model Ts are the same: everything below 160Hz is sent to the bass drivers, and everything above 2.3kHz is sent to the tweeters. Bryston specifies the passive Model T as having a frequency response of 25Hz-22kHz, +/-3dB, an impedance of 4 ohms, and a sensitivity of 91dB/W/m. The ten-year warranty is double the industry standard.

#### Setup

To get the best performance out of the Model Ts, I discovered that I had to position them carefully. A little too much toe-in and I was greeted with a fiercely focused yet somewhat flat soundstage. Not enough toe-in and voices were vague, hollow, and too diffuse. But when I got it right, I was ushered into a wide, deep, well-focused soundstage that seemed to ignore the confines of the room, and portrayed images with solidity and easily perceptible dimensionality. Almost regardless of the speaker positions, the Ts' bass was always exemplary, even class leading. However, I did struggle to hear the kind of topend sparkle I'd expected, considering that each speaker has two tweeters and measures remarkably flat.

I reevaluated my setup. After much experimentation, the Model Ts ended up about 4' from the front wall, 2' from the sidewalls, and toed in so that a direct line drawn from the tweeters would intersect about 16" behind my head. Almost accidentally, I discovered while walking around the room that the Model Ts seemed to struggle in the nearfield. This wasn't something I could measure with any confidence, but it's a problem that I suspect is due to the speakers' midrange drivers being right at ear level, and the tweeters so far *above* my ears. I changed my listening position several times; the issue I heard when I sat 9' from the speakers became a nonissue at 11', and I found the optimal tonal balance and resolution of detail when I sat 13' away.

#### Sound

With proper speaker *and* listener positions established, it was time to dig into some serious listening. Beginning with some "Red Book" CDs, I cued up "Lovers in a Dangerous Time," from Bruce Cockburn's *Anything Anytime Anywhere: Singles 1979-2002* (Rounder 11661-3180-2). The first thing I noticed was the depth and solidity of the bass. Rarely have I heard this track with so tactile a bottom end. The Model T conveyed a very controlled yet forceful bass line that got my foot tapping within seconds, and Michel Pouliot's drums sounded so dynamic and punchy that I found myself relishing the impact of the sticks. Cockburn's voice imaged very well at center stage and was presented with appropriate scale, but lacked a little vividness at casual listening levels. But when I gave the Model Ts some juice, they really came into their own. Their bass performance was just as controlled, yet more potent -- exactly as it should be. Cockburn's voice now sounded well balanced, natural, and again, very controlled. Cymbals had more shimmer, but were still not as detailed as I've heard from speakers such as Monitor Audio's GX300 or my own KEF XQ40s.

I thought about what I was hearing, and it made sense. One of James Tanner's key requirements for the Model T was that it play at high SPLs with very low distortion. For all intents and purposes, he has succeeded -- the Model Ts sounded clean and at ease, regardless of how loud I played them. Both the GX300s and XQ40s are more adept at portraying the finer details and subtleties of a recording, but only to a point -- both begin to sound a bit sharp when pushed really hard. In comparison, the Model Ts seemed to relish being pushed hard -- they sounded better the louder I played them. In fact, to date, the Model T is the only speaker I've had enough confidence in to crank up the volume to reference level (0dB). I can't say the same for my previous reference speakers, the B&W 802 Diamonds, which would begin to distort before reaching reference level -- yet with track after track, the Bryston Model Ts went about their business with ease, never sounding harsh, aggressive, taxed, or unbalanced.



Returning the volume to a saner level, I heard similar things during "Darkness," from Leonard Cohen's *Old Ideas* (CD, Columbia 88697986712): His voice lacked a bit of air and sounded slightly darker than usual; string detail, though present, was somewhat more difficult to hear than I'm used to; and the piano had just a hint less scale than I've come to expect from this track. With the volume still low, drumbeats were again firm, with enough kick to be felt, and the Webb sisters' voices were conveyed with exacting size and depth. Turning up the volume again resulted in an almost 180-degree change in character. Cohen's voice sprang to life with newfound vitality, texture, and clarity, while the piano grew in scale to where it should. String details I'd previously struggled to hear were now easily audible.

Moving on to high-resolution recordings, I tried Selena Jones's "I Don't Want to Close My Eyes," from *Best Audiophile Voices* (24-bit/192kHz AIFF, Premium), and heard a more profound improvement than I'd anticipated. Jones's voice was full of life, conveying textural details and microdynamic fluctuations that I almost assumed were not possible through these speakers at lower listening levels. The shimmer of cymbals was now much more easily perceived against the well-positioned saxophone at center stage. I was now able to hear subtleties, such as breath and textural cues, that I'd dearly missed with the "Red Book" CDs -- the recording had life, and now drew me into the music. The bass was expectedly addictive, offering solidity and uniformity, regardless of volume levels. I made similar notes while listening to "Your Latest Trick," from Dire Straits' *Brothers in Arms* (SACD/CD, Vertigo 9871498). The saxophone in the first minute of the track was presented center stage with excellent scale and dimensionality. Keyboards filled the soundstage, floating in air against precisely imaged percussion instruments, and Mark Knopfler's voice sounded full, natural, and in the room.

#### Comparison

Before being discontinued, the KEF XQ40 retailed for \$5000/pair, in roughly the same price range as the Model T (if you ignore finish upgrades and the optional outrigger package, which increased the price of my review pair to \$8900). Base price, however, is about the only thing the two speakers have in common; otherwise, it was like looking at David and Goliath. With their curved panels, lacquered Khaya Mahogany veneer, solid-aluminum front baffle, and high-quality five-way binding posts, the KEFs are aesthetically a cut above the Brystons. The Model Ts cost more to rise to that level, and fall short of the KEFs in fit'n'finish.

Cabinet construction and internal components were different stories, however. The Model T is far more robust, with extensive internal bracing, and has seven drivers vs. the KEF's three, a more substantial crossover network, and almost twice the internal volume. So it was hardly surprising that the two speakers sounded nothing alike. The KEF is an excellent speaker that performs well at all but the highest volumes in all but the biggest rooms. KEF's Uni-Q drivers offer tremendous performance off axis, while providing excellent imaging, detail resolution, vocal transparency, and a convincing bottom end. The XQ40s also sound equally good regardless of whether you're listening at low or medium volumes, or from close or far away. Playing loudly is what I consider to be the XQ40's only weak point -- the bass tends to sound a bit loose and bloated when pushed, and the Uni-Q driver can become a bit aggressive at higher levels.

The Model Ts made no effort to convince -- instead, they conveyed. Their bass performance was the best I've heard in this price class, as was their level of control and lack of distortion at all listening levels I was brave enough to ask from them. The Model Ts seemed to thrive on high-quality recordings and power, so attention should be paid when selecting ancillary electronics. The Model Ts also required care in positioning -- not because they overloaded my room, but because they needed to be at least 13' from the listening position to present a balanced sound. But when these conditions were met, the Model Ts produced tremendous soundstaging, rock-solid imaging, seductive bass, and a realistic re-creation of whatever signal they were fed.

#### **Conclusions**

In my time with Bryston's Model T, I came to appreciate and understand what James Tanner had set out to accomplish. For all intents and purposes, I believe he has succeeded. The Model T is a balls-to-the-wall, highly capable floorstander that offers tremendous levels of control, dynamic ability, and class-leading bass performance. While it doesn't provide the last iota of detail resolution, the Model T's sound is thrilling in virtually every other way, and deserves to be considered if you're looking for a robust reference loudspeaker that will shy away from nothing. With choices of passive and active external crossover networks, custom outriggers, and countless real-wood veneers, the Model T is a highly configurable yet versatile product, and something that James Tanner and Bryston -- and whoever buys a pair -- can be proud of.

... Aron Garrecht arong@soundstagenetwork.com

#### **Associated Equipment**

- Speakers -- KEF XQ40, KEF XQ50c center
- Subwoofers -- JL Audio Fathom f112 (2)
- Amplifiers -- Classé CA-M600 (2), Classé CA-M300, Halcro MC50
- Preamplifiers -- Marantz AV8801, Classé CP-800
- Sources -- Ayre Acoustics C5xeMP CD player, Oppo BDP-103 universal Blu-ray player
- Cables -- Kimber Kable Select KS-6063 speaker cables and Select 1126 interconnects, Cardas Clear Blue Beyond power cables
- Power conditioner -- Torus Power AVR2 20A

Bryston Model T Loudspeakers

Price: \$6495 USD per pair.

Warranty: Ten years parts and labor.

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#### **Bryston responds:**

I would like to thank Aron Garrecht for his time and effort on the Bryston Model T speaker review. It is encouraging to see a magazine review that includes extensive objective measurements to go along with the subjective opinion.

We'd just like to clarify something on the binding posts, since they are of top quality. The binding posts, washers, and nuts are machined from solid brass and are then gold plated. The only plastic is the protective coating on the nuts to limit accidental shorting. The bridging bars are certainly above the equivalent of 12-gauge wire.

Sincerely,

James Tanner Vice President, Bryston



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