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Nearly 25 years ago, when I began reviewing audio gear, you could find a small, basic, unobtrusive British integrated amplifier for between \$300 and \$500. All included phono stages. Those were kinder, gentler times.

Those itty-bitty, 'umble-pie British integrateds flaunted few features. Avoiding "features"—balance and tone controls, speaker-selection switches, headphone jacks—was the whole idea. All of these can clutter up and possibly degrade the signal path.

Reviewers for the then-mainstream US hi-fi rags—now long gone—could hardly come to terms with this. I remember showing such a British integrated to a colleague who worked for another magazine, with a much larger circulation than ours (its circulation now is zero).

"Why would anyone want *that* when you can have more power and many features for the same or less money?"

How about circuit simplicity? Good sound? Reliability? That Arcam A60 integrated served our video system for 20 years (I never turned it off). When it finally failed, Arcam's distributor at the time scolded me for tossing it out: "We could probably have fixed it."

In those days, Rega Research Limited was a young company that focused entirely on turntables, about which its founder and owner, Roy Gandy, is something of a genius. That's because he was trained as a mechanical engineer. Previously, he'd worked for British Ford, where he specialized, I'm told, in car-door hinges.

Never in a rush, Rega took about five years to produce their first tonearm: the now-legendary Rega RB300, still in production. It was—and is—a masterpiece of mechanical engineering. By

Sam Takes an Apollo Spaceship to Saturn and Looks Into Rega

general consensus, the RB300 tonearm and its variants are among the world's finest tonearms, regardless of price. And forget Fremering: they're not natively height adjustable.

It wasn't until years later that Rega turned their attention to integrated amps, tuners, speakers, and the like. Rega was the "last adopter" on earth of the Compact Disc. They introduced the Planet CD player, their first, in July 1997.

I first met Roy Gandy more than 20 years ago. At the time, he told me that he hoped CDs would go away. Two decades on, he's getting his wish. Be careful what you wish for, Roy! All over the world, the sales of CD-only players (*ie*, no DVD) have shrunk dramatically. As for the discs themselves, look what's happened to Tower Records.

The Brio 3 is a handsome, tidy little amp. It weighs 16 lbs (7.3kg) and measures 17" (435mm) wide by 3" (75mm) tall (including feet) by 10.5" (270mm) deep. The case is of aluminium, as they say in England; the faceplate, of necessity, is cleverly concealed plastic. The Brio 3 comes in your choice of "silver satin" or "black satin" metal finish, as does all Rega electronic gear. It runs cool and quiet.

The previous Brio (the 2, though not so called) was rated at 38Wpc into 8 ohms and sold for \$595. The Brio 3, which looks almost identical to the "2," is rated at 49Wpc into 8 ohms or 64Wpc into 4 ohms, and costs \$645.¹

Why 49Wpc? You have to understand Roy Gandy and the other folks at Rega, including Terry Bateman, who designed the Brio 3. This is their joke. The Regans



Rega Brio 3. A beautiful 49 watts per channel. Enough?

Rega Brio 3 integrated amplifier: \$645

But first, the Rega Brio 3 integrated amplifier—a product that I initially did not want to review. Steve Daniels of The Sound Organisation, Rega's US Rega distributor, twisted my arm, as it were. He sent me the second iteration of the Brio several months ago. But with so much other stuff to review, I sat on it. That turned out to be a good move—Steve, who is very patient, called me a while ago to tell me to stop the review (which I hadn't even begun). The Rega Brio 3 was coming.

have a total disregard, even contempt, for marketing bullshit—and for specs that don't mean much, or shouldn't mean much, to the consumer.

To the "consumer" who thinks he or she "needs" 50Wpc, Roy and Terry say, in effect: *Sorry, you can't have the full 50W; you can have only 49W. If you don't fancy that, you'll have to consume something else. Cheerio. Good luck with the sound.*

I made up the words. You get the gist.

¹ Wes Phillips reviewed the original Brio for *Stereophile* in September 1998; see www.stereophile.com/integratedamps/998rega.—Ed.

Of course, the Brio 3 *does* deliver 50Wpc into 8 ohms, and maybe a little more. Rega doesn't want to lure you with spurious specs, that's all. (If, in the 1970s, you bought a turntable on the basis of specs, you got what you deserved.) The single pair of Sanken output transistors per channel are run very conservatively—not overdriven. Rega could have goosed a lot more juice out of these Sanken babies. 55Wpc, anyone? 61Wpc?

Now here's something novel (to me). Roy Gandy told me that the driver and output stages are included in one and the same Sanken chipset. "This allowed us to simplify the circuit enormously," Roy told me, allocating due credit to the Brio 3's designer, Terry Bateman. Terry was home for Christmas, and Roy himself was on his way to the North Pole when we spoke.

Those of you who've been reading this column for a while know that I like amps with just a single pair of output devices per channel. There's a certain purity of sound that can get lost when you parallel multiple pairs of output transistors—in other words, when you complicate things.

Like all Rega gear, the Brio 3 is made in England because, as Roy told me, "We like to make things." Even the printed circuit boards are sourced from a UK supplier. Rega could have the boards made in China, but prefers to pay the premium and let UK workers earn a living wage. To be sure, some of the parts, such as the ALPS potentiometer and the Sanken output transistors,

come from abroad (Japan, in both cases). The metal casework comes from Sierre, in low-cost Switzerland.

To keep costs down, as they must, Rega does away with frivolous features. No Rega integrated amplifier has tone or balance controls (perish the

(That last phrase amused my wife, Marina: a difficult load, *c'est moi*.) But keep in mind that the Rega 3 is still a small amp that's rated to deliver only a wee bit more power into 4 ohms than into 8 ohms, which indicates that it's no high-current powerhouse.

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thought!). And with the bottom-of-the-line Brio 3, you're limited to three line-level inputs plus a tape-monitor loop. There is just a single set of speaker outputs. No remote control. Sorry to say, no preamp output for driving a powered subwoofer. (But I'll bet that, by special order, you could get Rega to deliver a preamp output instead of the tape loop. Rega should have killed the tape loop, which no one now uses.)

And Hallelujah—there's a moving-magnet phono stage that's also suitable for high-output moving-coil cartridges. Of course, it's not the *greatest* phono stage, but it's no mere afterthought—it's worthy of a Rega turntable, tonearm, and cartridge. Fremer might frown, but I had loads of fun listening to LPs through this thing.

The Brio 3 offers (useful) protection against clipping—good to have with a small amp. Protection, too, against accidental shorting of the speaker wires. Still, you should take care *not* to short the wires.

I could wish for a remote control, as well as a less clunky input-selector switch and a smoother, silkier volume control. But I'm looking for things to kvetch about. I've got no beef at \$645.

Kvetch? It's Yiddish for *complain*. Meanwhile, I could *kvell* about this amp—which is to say, praise it. (*Kvell* is not *Krell*.) John Atkinson has to have *something* to cut.

Where it counts, the Brio 3 is most definitely *not* cheaply or poorly made. Improvements over the Brio "2" include a power supply with a new toroidal transformer and 10,000 μ F smoothing capacitors, said to provide enough current to drive the most difficult loads.

I unboxed the Brio 3 and set it up in our living room, using the Rega Apollo CD player as my digital source, and my revered Rega P25 turntable with Goldring 1042 moving-coil cartridge for analog. Speakers were my Triangle Comete Anniversaires. I used some XLO interconnects and a run of Rega's own speaker cable. I had, let us say, modest expectations.

Right from the start, without break-in, the Brio 3 sounded warm and smooth: full-bodied, well-controlled in the bass, smooth in the midrange, sweet in the treble. I got hooked. And fast.

Although Rega doesn't make tubed gear, designer Terry Bateman is known to be a tube guy. It's glib to trot out the term *tubelike* to describe the Brio 3, but even the reticent Roy Gandy admits that there are "parallels" between the Brio 3 and classic valve (tube) amps:

"We accepted that, at the price, we could not produce a high-technology amplifier. It had to have some faults. So we set out to make the inevitable minor faults euphonic, which is where the comparison with valve amplifiers comes in. We designed the power supplies so that if there was to be any distortion, it would be primarily second-order. We have essentially eliminated third-order harmonic distortion because even tiny amounts can create problems."

Roy went on to say that Terry Bateman started out designing gear for musicians, whose stuff has to work and be reliable. For Terry, according to Roy, the particular design itself is not important. Whether or not it works is.

So maybe it's *not* so lazy to describe the Brio 3 as *tubelike*.

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Here's what the Brio 3 wasn't: edgy, lean, sterile, bloated, tuneless. I could even tap Fred, my right big toe, to the music. (My left big toe is named Joe.) With a British integrated amp, this is what you're supposed to do. When listening to Beethoven's string quartets, I always tap my toe—at least Fred, if not Joe. (I'm right-toed.)

This quality of good timing was *not* accompanied by threadbare, stripped-away sound: barren timbres and the like. Violins and voices were handled so well as to remind me [*gasp!*] of my favorite flea-watt amplifier, my Sun Audio SV2A3, recently serviced by Blackie Pagano of Tubesville and newly fitted with 2A3C output tubes purchased straight from China.

Of course, Rega would recommend one of their own speaker models to go with the Brio 3—such as the R1, a pair of which is sitting in my garage, not yet unboxed. (Sorry, Steve, but I can change only so much equipment at any one time.)

The Brio 3 paired exceptionally well with the Triangle Cometes. The Comete Anniversaire may or may not still be available (production was limited to 1000 pairs worldwide), but the stock version—the Triangle Comete Es—is still very much with us.

Alas, the wee Brio 3 did have its limitations, as even Roy Gandy will fess up to. Its power rating of only 49Wpc means you must match it with loudspeakers that are reasonably sensitive—say, 90dB or better—and whose minimum impedance doesn't dip below 4 ohms.

But I'm always the bad boy—in Russian, *plochoi malchik*. I love to misbehave. I played the Brio 3 *very loud* into the Triangle Comete Anniversaires—sometimes the music makes me want to do that. The Rega ran out of power on demanding material—large-scale orchestral works, and solo-piano recordings too. Timbres hardened, the bass lost control, dynamics suffered, the sound-stage shrank, the sound became congested. (I was probably triggering the speaker-protection circuit.) I could hear this congestion—this dynamic compression—with a CD by pianist Grigory Sokolov: Brahms' Piano Sonata in F Minor, Op.5, and other works (Opus 111 OPS 2034). I had to back off on the

volume control.

With any small amp, you need to apply common sense. Don't expect the sound quality to hold up if you play your music very loud. And unless your speakers are one of the Klipsch Classic models, give the Brio 3 the brush-off if your listening room is large.

This is as you might expect. Consider the Brio 3 for a modest (but high-quality) system in a room of small to medium size. It would be ideal for a den, bedroom, office, or weekend retreat—anywhere quality counts but quantity doesn't.

I felt that the Brio 3 was less than stellar at resolving low-level details—ambient information, especially. Musical Fidelity's X-T100 (discussed in last month's column) was superior in this regard. But the X-T100 costs \$1500 (assuming you share the power supply with its matching CD player), and can sound a bit lean and austere compared to the harmonically rich Brio 3. (In fairness to Rega, I should have put one of their more expensive integrated amps up against the X-T100.) The X-T100 is trim and agile, the Brio 3 rich and well-fed. (Rather like me—the well-fed part, if not the rich.) With the Brio 3, I thought that brass instruments lost some of their edge. There was something ever so slightly bland and uninvolved about the Brio 3.

The most important thing, for me, was that it hit the harmonics just right—a remarkable achievement for a \$645 integrated amplifier.

The Rega Brio 3 offers excellent build quality and exceptional value for the money. I know of nothing better at anywhere near the price.

Rega Apollo CD player: \$995

Artie Dudley reviewed this CD-rotating apparatus (CD-only players have become nearly as obsolete as turntables) last June and went bananas over it. Rightly so, Mr. Dudley.

Now, \$995 might seem a lot of money for a CD player to pair up with a \$645 integrated amp, such as the Brio 3. But Rega doesn't *make* a less expensive CD player. Besides, Rega believes that it's always better to put as much money as possible into your source components: your CD player or turntable, and preferably both. Rega is still more fondly attached to vinyl.

Like the Brio 3, the Apollo has limitations when compared with some much more expensive players. As Roy Gandy told me, "With the given technology, we had to build it as inexpensively as possible." And that wasn't to rip you off; it's reality. In fact, the Rega Apollo offers far more value, in sound-



The Rega Saturn may look like the Apollo but it's a whole different machine.

But better bland than blaring. The Brio 3's limitations are completely understandable, given its power rating and modest price. The Brio 3 did most things right and nothing really wrong.

quality terms, than anything else I've heard at or near the price. There seems to be unanimity among critics about this: the Rega Apollo is a \$1000 category-killer.

Rega Saturn CD player: \$2395

Now there's the Rega Saturn, for \$2395—more than twice the Apollo's price for a player that sounds almost identical to it. Roy Gandy admits that his distributors and dealers have pushed him into this—Rega hates it when the law of diminishing returns kicks in. But the Saturn, it seems to me, is what you get when you build an Apollo without compromise.

The two players look almost identical, too, even up close. Same size chassis (17" (435mm) W by 3.9" (100mm) H by 10.5" (270mm) D.), same top-loading design: you lift the lid, center a CD on the spindle (rather like an LP on a turntable spindle), close the door, and three spring-loaded ball bearings grip the disc and tame it flat. *Really* flat—no wobble. Nice hinges, Roy—more Mercedes than Ford.

The Apollo sits on the launching pad at 12 lbs (5.5kg). The Saturn is half again as heavy at 18 lbs (8.2kg). And yes, the Apollo looks to be the better bargain at \$82.92/lb *vs* the Saturn's \$133.06/lb. Alas, it wasn't easy—or inexpensive—for Rega to improve on the Apollo, and weight doesn't tell the entire story. We're not talking salami here, after all.

The Saturn (which sports a metal faceplate) uses the same Sanyo laser and drive mechanism as the Apollo and the same servo and data-control chipsets, made by a mystery startup company near Cambridge, England, that Roy has agreed not to name. After you've loaded a disc in the Saturn or Apollo and closed the transport door, this mystery chipset goes to work. It reads the whole of the disc's subcode data into memory, scans the data, and accordingly selects one of four levels of error correction. The idea is not to compromise the sound quality by *overcorrecting*. The mystery chipset also optimizes the laser's spot size and tracking position for each CD. All of this takes about eight seconds, during which the player's display reads "INITIALISING."

I chewed the rag with Roy Gandy about the mystery chip. It was a matter of serendipity, he explained: "We were very fortunate to come across a UK company that was producing a new CD

operating chip. Until then, the only companies that made such chips were major multinationals like Sony, Philips, Sanyo, Samsung, and Toshiba. Around eight to ten years ago, with DVD players flooding the market, they stopped producing the chips.

"Some venture capitalists in the UK foresaw that these chips would cease becoming available, while the sales of CD players—including boomboxes and the like—would continue. So they set up a company with between 20 and 40 computer software engineers—none of them from hi-fi—and fed them the original Sony-Philips 'Red Book' CD technology."

Roy got excited: "What we didn't know then is this: Until recently, no one had the memory capacity to totally meet those specifications. Our old Sony chips had 37k memory. This chipset we are using has 20 megabytes of memory capacity.

"It's true that CD players have generally improved," Roy continued. "But a lot of this has been just tickling and playing with the tonal performance. If you consider the difference between a good £300 CD player and a good £10,000 CD player, the difference is relatively small in absolute terms, and is usually due to things like better capacitors in the signal path and improved power supplies. When we came across this chipset, we were staggered by the increase in the basic information coming off the bitstream at the beginning. We found it was like working in the analog domain, where you actually had information, and applied good engineering to improve the sound."

That eight seconds of "INITIALISING" seems a small penalty to pay for superior sound.

Both the Apollo and the Saturn play MP3 and Windows Media Audio files that have been burned to CD-Rs—not that I mess around much with either of those formats. But I did receive a disc of old Spike Jones radio programs the other day, and I popped it in the Apollo and the Saturn. No problem playing the MP3s.

Both the Apollo and the Saturn have TosLink and coaxial digital outputs. Why you'd want to bypass the superb DACs built into these players—especially the

Saturn—is beyond me, but I'll bet that either makes a killer transport. The Apollo uses a single Wolfson WM8740 24-bit, dual-differential DAC. The Saturn uses two of these, one for each channel. This is said to improve the dynamic range and linearity.

There's more, said Roy: "We spent a lot more money to double the size of the transformer, which has 11 power supplies, as opposed to eight with the Apollo. The power-supply regulation is improved. All capacitors on the power supplies are solid polymer electrolytics that offer much higher performance. The Saturn has faster diodes."

At this point, Roy began to laugh. Maybe he should ask Terry, who wasn't available the week before Christmas, about the advantages of faster diodes. Roy, after all, is a mechanical engineer.

"And there's a high-stability oscillator for the timing mechanism," he added. "This is a completely different player than the Apollo."

Indeed, it is. I listened to the Apollo and the Saturn with the Brio 3, but the Brio, good as it is for the money, tended to obscure the sonic improvements of the Saturn. I turned instead to the new Raptor tubed headphone amp from Ray Samuels Audio, and my reference AKG 701 headphones. The Raptor's two inputs made it easy to connect the Apollo and Saturn simultaneously. By making CD-R copies of some of my discs, I was able to switch quickly from one player to the other at more or less the same point on the disc.

Now I could hear the Saturn's superiority to the Apollo. Like the Brio 3, the Apollo seemed very smooth, just a touch on the euphonic side of neutral—warm, rich, and full-bodied, but slightly opaque when compared to the Saturn.

The Saturn delivered more detailed, more delicate sound, with greater extension in the treble and tighter, more extended bass. The Saturn was superior at revealing the ambience of recording venues. Transients were more cleanly and clearly articulated. The Saturn did a better job of conveying the attack and decay of the notes; it was faster, more agile, more airy and open. ■