**Review by Dan Davis**

**Model**: Rocket 88
**Category:** Push-Pull Tube Power Amps

## The Absolute Sound
### Rocket 88 - Push-Pull Tube Power Amps

It's a measure of the youth of the high end that Cary Audio, at 13, is one of its venerable mainstays. But I'd never hear Cary's electronics in my home system before the arrival of the CAD 808 amplifier, called the Rocket 88 in tribute to the KT88 output tubes at its heart.

Several months with the Rocket 88's leave me liking a lot about them: I like their compact look. I like not risking permanent injury moving them. I like the $2,500 price, with a price-to-performance ratio far out of the ordinary. I like the flexibility of using them in Class A triode mode, Ultra-Linear Class AB operation, or a combination of the two. Best of all, I like their profoundly musical sound, especially in designer Dennis Had's preferred vertical stereo biamping configuration.

At first glance the Rocket 88 looks like a conventional tube amplifier, but it boasts some unusual features. The front panel's on/off switch is flanked by a pair of dependable green LEDs resembling cat's eyes, that expand and contract to indicate power output. The rear panel includes inputs wired in parallel for both RCA and XLR interconnects. The chassis rear is dominated by a pair of custom output transformers and a large power transformer, designed to handle twice the Rocket's 50 watt power rating, ensuring durability.

In front of the transformers are four KT-88 output tubes and a pair of EL-84 pentode tubes used in current sources for a pair of dual-triode 6922s, the phase-inverter/drive tubes. The EL-84s replace the resistor network in conventional gain stages and enable equally balanced operation of the 6922s. Had believes that gain and buffer stages negatively affect transparency, so his goal was an "amplifying device with minimal gain to provide the output power to drive the speakers." That means the Rocket 88 requires a high-output preamplifier. It took out my reference preamp, the Wyetech Opal (15dB gain) and substituted Cary's SPL 2002, used in designing the Rocket 88. The 2002 has 20dB of gain, so I suggest that as the minimum matching requirement.

Bias is tweaked via a top panel jack and screwdriver adjustment. I gave up checking the bias level daily after it kept coming up at a solid 200 milliamperes. After several weeks it was still well within optimal range. Stability is a plus with this unit.

A pair of toggle switches enables output settings for the speakers at either 4 or 8 ohms, even during operation. Another pair of Triode/UL switches allows adjusting

each channel to triode Class A or ultra-linear Class AB. Output power is 20-watts-per-channel in the triode setting and 40 in AB mode. Triode lovers once scoffed at high-power, saying that most music is in the first watt, and that three watts is all you need with a sensitive speaker. The Rocket 88s modest power output is hefty by those standards.

For vertical stereo biamping, you need two stereo amplifiers, two bi-wireable speakers. Each amplifier routes the high-frequency portion of the program to its speakers high-frequency crossover and drivers. And each amp's low-frequency program is routed to the speakers' low-frequency crossover and drivers. Had says this provides more headroom per watt, increasing transparency, driver control and depth. That's where the ability to switch between triode mode and higher power ultra-linear modes help, since Had points out that heavy bass passages and transients drain power, leaving treble frequencies vulnerable to distortion.

But for me, the only thing that really counts is what happens to my heard and head when the sound waves enter my ears. And here, the elegant design features and thoughtful execution that went into the Rocket 88 resulted in a listening experience that transcended my expectations.

Those expectations were hardly low, given my familiarity with the favorable reviews Cary gear has received. But I had heard that the "Cary sound" was typically rubbery – smooth, fat and happy, but far from neutral. My experience with the Rocket 88 suggests that you shouldn't believe everything that you hear.

The bulk of my listening was in the vertical stereo biamping setup. With the Rocket 88 as a single biwired stereo amp driving the von Schweikert VR4 Gen II speakers (sensitivity: 91dB)., the sound was quite satisfying, but I couldn't shake the feeling that something was missing from large-scale music played loudly, no matter the mode and impedance settings. That sense of bloom in climaxes, the feeling that the sound can continue expanding forever, wasn't there. On smaller-scale music-classical chamber and small-group jazz-results were gratifying, with that you-are-there feeling that puts the musicians in your room. With a speaker of say 94 to 96dB sensitivity, the single stereo amp would have impressed more than it did in bigger more complex music. What I did hear was a fine amplifier that, matched with the right preamp and speaker, was an excellent value.

Perhaps my mistake was that I started our listening to a pair or Rocket 88s in the vertical stereo biamping mode and after that it was hard to adjust to a single stereo presentation. The difference wasn't subtle. I heard sound that was equal to what I've heard from more expensive monoblocks. If my budget restricted me to getting just one Rocket 88, I'd be saving my pennies to add a second. That also means entering a tweaker's paradise, doing what I call the "switch dance," scooting over to flip impedance and mode switch for each CD. And upstream phase-invert capability adds yet another exponential expansion of variables.

The importance of getting those settings right was driven home in my biamped listing sessions. After enjoying the visceral impact of Ou's Rachmaninoff Symphonic Dances (Reference Recordings) with both amps set at 8-ohm triode on the top and 4-ohm AB ultra-linear on the bottom end, I changed both bottom settings to 8-ohm triode expecting to hear a softer bass and squashed dynamics. And that's exactly what I heard – nothing exaggerated, but the orchestra was pushed further back, the bass was soggy, and an airy recording now suffered from oxygen overdose. Ah ha, I

thought, let me try the lease breaking “Te Deum” from EMI’s new recording of Puccini’s Tosca, where a bass-baritone, large chorus, full orchestra with bells and potent brass all cut loose at the same time.

I again started with the combination of 8-ohm triode on the top and 4-ohm A/B/ ultra-linear for the bass and kicked the volume way up. The result, admittedly at levels only extreme audiophiles and teenagers listen at, was distortion in extremis. I tried again, this time with both channels set at 8-ohm triode, expecting even worse given my experience with the Reference CD. Instead the distortion was gone, the individual components of the music more transparent. Puzzling. Amplifier clipping on large-scale, complex material is common enough, but why on one disc and not on another of music apparently as loud and complex. Scot Markwell suggested that operatic works with complex and dynamic vocal components are more likely to induce clipping at high volume levels than most other types of music; human beings are capable of extreme modulations of volume. Further experimentation confirmed that diagnosis.

I drew three conclusions from the experience. One: A well-designed low-power triode amplifier can cleanly drive loud complex music with a reasonably sensitive speaker. Two: Don’t go by the book in choosing impedance and operating mode settings. Sometimes listening results will contradict theoretical assumptions. Three: If you have an amp with such flexibility, experiment with different settings on different discs. I found the results obvious on recording with large forces on steroids; with others, differences were subtle, sometimes nonexistent.

Aside from the exercise in pushing the amps to their limits, the Rocket 88s proved as musical as any amps I’ve heard at their price level, and well above it. They excelled in just about every parameter, lacking a bit of openness on top and punchy at the bottom, especially when fed by the 2002 preamp. When I reinserted my reference Wystech Opal, with less gain than the Rockets want, the treble became more open and, at normal volume, the bass more controlled. This indicates not only that the 2002 is warmer and more closed-in that the Rockets, but also that the Rockets neutrality will reveal upstream changes.

That also allowed them to clearly depict the differing acoustic environment of each disc so there was never a sense of one-size-first-all sound reproduction, an all-too common failing with amplifiers of moderate price. Thus, there was no sense of colored highs that flatter treble emphasis on discs like EMI’s new Mozart Idomenes, where glare is inflicted on the sopranos. At the same time, the Rockets perfectly reproduced the sparkling treble trills of Oscar Peterson’s piano and the pungency of Dizzy Gillespie’s muted trumpet in JVC’s excelled CD remastering of the Pablo duo album. Violin solo and string quartet recordings, particularly prone to treble glaze, where honestly rendered – with rounded, beautifully projected violin tone on good recordings and a peaky edge on those that were victims of digititis. Even long all-CD listening sessions were never fatiguing.

The Rockets accurately reproduced space and soundstage, as in the reverberant church surroundings the four female voices of the Anonymous 4 in their new Harmonia Mundi recording, La Bele Maris, where vocal harmonics lingered in the air, subtly blending into the ensemble’s next phrases. On the Reference Recordings of the Symphonic Dances, the saxophone tone was spread, as it is in life in a large hall, without the unnatural razor-sharp edges so many recordings and electronics impose on it. The Rockets also unveiled the complex interplay among the lean, percussive

piano, vibes, and guitar on JVC's remastering of Fantasy Stan Getz-Cal Tjader Sextet album.

And they captured the dynamics and depth of the Clerk's movement of Schnitke's Gogal Suite (Pope). This is a favorite for testing dynamics – the opening bassoon solo emerges from the depths of the orchestra in the middle distance, there's a twinkling harpsichord far back in the hall a piano off the far left, startling percussion explosions, braying trombones, and resonant pitched tympani strokes. I've played this on pricey electronics that couldn't hack it. The Rockets passed with flying colors.

Ditto for the aplomb with which they reproduced Ivan Moravec's piano in the Chopin Preludes [VAI], precisely conveying details like the bell-like pianissimo treble in the right band against the dominant middle and bass lines in the final Prelude. Along with delineating Moravec's crisp articulation, the Rocket 88s excelled in hanging on to decaying overtones, and they allowed his resounding three hammer lows in bass to catch me in the gut.

My conclusion is that the Rocket 88s can propel me to the musical bliss we all want from our systems. In this case, two is better than one. Matched with the right preamp and speakers, and a single Rocket delivers the good. But a pair of Rocket 88s in vertical stereo biamping mod, again, properly matched with a suitable high-gain preamp and sensitive speakers, can hold their own as a reasonably priced, high-value alternative to pricier monoblocks.