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## Dynamic Duo is a Hi-Fi Choice Best Buy

### "Dual in the crown"

This preamp and power amp combination is a benchmark pairing according to Richard Black

Magazine: Hi-Fi Choice

Author: Richard Black

Date: April 2010

NAD revolutionizes nearly half a century of stereo amplification with its latest power amp, the C245BEE. You see, it's not a stereo amp but a quadraphonic one, with four separate channels of amplification sharing one chassis and one mains transformer. Obviously, you can do various multichannel things with specs like those, but what interested me the most was its stereo applications, most obviously bi-amping. As far as I can remember, this is the first dedicated bi-amping solution of its kind that I've seen and the idea is very appealing.

The attraction of bi-amping is that each drive unit of a loudspeaker (assuming a two-way model) gets its own amplifier channel. The signal still passes through the crossover, but the reduced power loading and frequency range that must be handled by each amp section means less stress on the electronics and, typically, considerably improved sound in all sorts of ways.

The usual downside is the need to add a second amp. However, building four channels into one chassis is a great deal less expensive than building two completely separate stereo amps, so NAD's thinking here has logic.

#### HIGH-POWERED

There are also other things one can do. Driving a set of remote loudspeakers is one possibility, while another is bridging the channels in pairs to make a high-powered stereo amp – this requires no more than flicking a switch at the unit's rear. This may or may not make financial sense if one does

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it from the outset, but is an attractive way to upgrade a system down the line. NAD rates the 245 at 70 watts per channel into the usual eight ohms when working in bridged model, though I managed to tease a little over 100 watts out of it.

Talking of power output, this is limited overall by the mains transformer, which supplies all four channels and is of decent, but no huge, capacity. When four channels are driven flat out the limit is just over 40 watts on each, but in practice this just isn't going to happen, at least in a bi-amped setup. It's more realistic to take as a guideline the figure for two-channel delivery, which is about 50 watts and an indication of what's available. Peaks can easily exceed 60 watts, so this amp is rather pokier than the conservative 35 watts rating suggests.

In terms of construction, there's practically nothing in the C245 that couldn't have been done years ago – it's a traditional circuit board, very well filled with components and flanked by a pair of heatsinks that carry the bipolar transistor output stages. The only surface-mount components I could find are on a sub-board, while most of the amplifying is done with discrete transistors. Even the case is a good quality affair, with a real metal front panel!

#### ALL DONE BY RELAYS

The C165 preamp matches the power amp very well aesthetically and shares many design ideas internally too, including the dominance of discrete transistors. There are slightly more surface-mount components here, hidden inside robust metal housings labelled 'Class A gain module' – NAD's signal-amplifying building blocks. Switching is all done by relays, while the phono stage is implemented with discrete transistors and caters for both types of cartridge. It even has switchable loading, adjusting resistance for moving-coil cartridges and capacitance for moving-magnet. Of the two main outputs, one is level-adjustable via a rear-panel control. Volume, balance and tone controls all use traditional variable resistors; the tone controls have very little effect at high volume settings and are generally a little more subtle than most.

#### RAZOR-SHARP

With such a range of options on offer it was hard to know where to start, but I decided to go for the plainest configuration, simply ignoring one pair of power amp outputs and using the C245 as a straightforward 40 watt power amp. As such, it's a decent combination, but possibly not one that would unseat our E1,000 favourites in the integrated amp stakes. Still, it gave us a good handle on baseline performance, which has good extension at the frequency extremes, nicely presented detail and plausible, if not razor-sharp, imaging.



Adding the second pair of channels in a bi-amped setup, however, really makes things start to fly. With my regular ATC SCM20 two-way speaker in use (not normally bi-wireable, incidentally, but I modified the connections some years ago), I found that the sound gained slightly in bass extension and solidity, markedly in treble 'air' and naturalness and quite remarkably in midband detail. What is, perhaps, even more likely to make it stand out from the crowd is that it is surprisingly distinctive from familiar amps.

#### MUSIC FLOW

With a total price of a little under E1,200, these two are up against units like the Creek Destiny or the ever-popular Cambridge 840A. I'm very familiar with both of those, and fine amps they are too, but there are subtle yet, over time, significant ways in which the NAD 165/245 pairing (in bi-amping mode) does things differently. Most noticeable, is a fleetness of foot, which really makes music flow along effortlessly. While the other amps do well in this regard, these NAD's seem to lift

(MDC). [Click here to see MDC Video.](#)

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performance to another level, especially with music that moves quite swiftly. Changing textures and harmonies are beautifully reproduced and rapid melodic passages are exquisitely clear.

What doesn't always quite stand up so well to the competition is the bass. It's good, but standards of bass reproduction in E1,000 amps are high and what I slightly missed from this was the effortless quality of some of the best integrated models around. To succeed fully, bass needs three things – extension, 'speed' and tunefulness – and it's the last of these that I feel sometimes eludes these amps.

Otherwise, the bass does indeed far well, its extension is about as good as any in this class, and speed is more than decent. Up in the treble and there's quality aplenty, with very nice decay of sounds into silence and, perhaps, just an occasional hint of excessive brightness – nothing we'd worry about. Midrange detail is very good and imaging has terrific extension and, again, specifically in bi-amped mode, pretty good resolution and stability.

I tried the C245 in bridged mode. It works quite well, but loses some grip compared with bi-amped operation and I'm not quite sure why one would bother, except as a temporary measure between upgrades. I also tried the amps separately, though we imagine most buyers will purchase them as a pair and found, to my slight surprise, that the preamp seems to be the limiting factor for the bass. Otherwise, it's very neutral via its line inputs: the phono stage is a little lacking in punch and insight, predictably more so with moving coil cartridges, but stands up well against typical integrated amp phono stages. It seems the star here then is the C245, but judged as a pair, this is an intriguing and in many ways very appealing combination.

### **BUILDING BRIDGES**

Bridged operation is a way of turning a two-channel amplifier into a higher-powered single-channel one. If the two channels are driven with the same signal, but in opposite phase (one positive while the other is negative) and the load is connected between them, twice the voltage is applied to the load compared with connecting one end of it to ground, as is normally done at the output. Twice the voltage means four times the power, so in principle a 35 watt amp like this could deliver 140 watts in bridged mode. The catch is that each channel 'sees' half the load impedance, so an 8 ohm loudspeaker connected in this way will look like a 4 ohm load to each channel. That will usually limit their output voltage to rather less than is delivered into eight ohms, limiting the output power to something less than the 140 watt figure. In addition, few amps really enjoy driving 4 ohms, so there is often something of a quality hit in going for bridged operation.

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