

taking into account such factors as regulation.

On the other hand, if you want both full output power and the highest possible quality, Sage recommends you buy a transformer which is considerably larger than would be needed to supply a module operating at full output. There is a strong feeling among certain groups of audio designers that sound quality can be improved by the use of over-size mains transformers, and regular readers may recall Graham Nalty's comments on the subject in his Upgradeable Amplifier series (ETI June, July, August, September and November 1986). Since the Sage modules are designed for use in very demanding applications, it seemed a good idea to put this proposition to the test.

Accordingly, it was decided that two different sizes of transformer would be used. The minimum VA rating needed to drive the modules to full output is 225VA so toroidal transformers of this size were used for the bulk of the review.

For the larger size the choice was limited by the range of voltages provided on commercial toroids. Transformers of up to 1000VA are readily available but sizes above 600VA rarely offer voltages as low as the 25-0-25 required by the Sage modules. Because of this, the transformer eventually chosen for the second part of the test was a standard 500VA toroid.

The choice of case also needs to be thought about carefully. The layout given in the instructions is very specific and the accompanying notes suggest there is good reason to stick to it. One false move, it seems, and those much-vaunted ultra-low distortion figures will be severely compromised.

The problem is that the recommended layout has the reservoir capacitors mounted vertically in order to keep the supply leads as short as possible. Any other arrangement seems to fall foul of one or other requirement of the layout, such as not placing the capacitors anywhere near the input wiring. This imposes something of a height restriction on the chosen case and rules out many modern slimline designs sold for audio use. It seems a pity since the other components and the modules themselves will all fit comfortably into any one of a number of attractive cases.

Being a sucker for good-looking gear, I decided to compromise slightly and mount the capacitors horizontally. This allowed me to fit both modules and their associated power supplies in a 2U high 19in racking case with space to spare. Were it not necessary to make room for the large 500VA toroids, an even smaller case could have been used.

### Loudspeaker Choice

The notes supplied with the modules include a loudspeaker crossover and driver circuit which is recommended for use during testing. Presumably it shows the arrangement used during initial testing and on which the published specification is based. The diagram specifies Peerless drive units, and although not stated it appears to be the circuit of the Peerless 825/2R kit loudspeaker available from Wilmslow Audio.

I am not familiar with the 825/2R but I do have a pair of Peerless CD825/2Rs, a very similar design which uses a 100W paper-coned bass driver instead of the 90W polypropylene-coned unit on the 825/2R. A review of the CD825/2Rs appeared in the June 1984 issue of ETI. All listening tests on the Sage amplifiers were made using these loudspeakers.

Rather than get caught up in convoluted arguments regarding the suitability of this or that preamplifier, I auditioned the modules using a direct feed from a Philips CD104 compact disc player via a pair of 10k volume control potentiometers. For comparison I used the power

amplifier stages of a NAD 3130 and my own home-grown 30W Class B power amplifiers.

Listening first of all to a selection of rock albums, the most noticeable difference between the Sage modules and the other amps was the quality and stability of the stereo image. The digitally-mastered album *Brothers In Arms* by Dire Straits showed this up particularly well. Vocal solos were firmly positioned in relation to the backing tracks and the sound effects on *Across The River* detached themselves from the music and became a living backdrop.

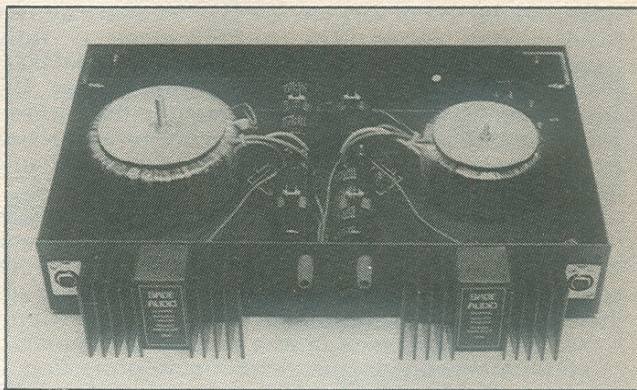
The difference was even more noticeable on *Don't Worry*, a track I had hardly noticed on previous playings. The descending chime passages took on a life of their own and seemed to hang in the air long after they had sounded.

Moving on to classical music only confirmed the first impression. Solo instruments were spaced well away from the orchestra and there seemed to be much more room between different groups of instruments. By comparison, the other amplifiers produced nice, well behaved sounds which remain rooted in the speaker boxes and were content to be heard and not seen.

### Doubling Up

I assume the difference lay in the use of separate power supplies for the two channels on the Sage amplifier, a feature not shared by the other two amps. Temporarily I connected up the 500VA toroidal transformer in place of the separate 225VA toroids and doubled-up the reservoir capacitors. The Sage modules didn't quite admit defeat in the face of this emasculation but they did start to behave a lot more like the other two amps.

The differences between the Sage modules and the other two amplifiers were less marked in other respects.



The Superamp modules assembled into a case with power supplies. Note the two different sizes of toroidal transformer referred to in the review.

I liked the tightness and bass extension they provided and fancied I could hear a little more detail at lower frequencies than with either of the other amps. The NAD by comparison seemed almost to emphasise the lower register with some coincident muddling of the sound.

The mid-range seemed very slightly veiled but that might have been because the treble was particularly clear. Higher pitched voices and instruments seemed to start up with a little more assurance than on either of the other amps but I could not hear any ringing or other indication of poorly controlled treble.

### A Definite Possibility

Having got the 500VA toroid into circulation it seemed a good idea to press on with the transformer comparison. I reconnected one of the channels to its 225VA toroid,