

# m Power

Icon Audio recently updated their fabulous MB845 MkII amplifier to 'm' status. Nothing to do with M16 or that famous German car, this m less glamorously stands for meter. Or perhaps its meter is glamorous? Noel Keywood finds out.



**A** long time ago I heard what a big triode valve amplifier could do when we designed and built one at World Audio Design. It used 211 transmitter valves that ran at frightening voltages - and it sounded awesome!

That's why I suggested to David Shaw of Icon Audio that if he wanted

a hot amplifier, this was the way to go. Only I prefer the sound of the graphite anode 845 over the 211. That's what he used and now, some four years later, here is the third iteration of Icon Audio's MB845 amplifier, the MB845 MkII m that produces a quoted 110 Watts per channel.

Originally priced at a very

reasonable £2500 per pair, these monsters have now floated upward in both specification and cost to £5999.95 per pair. The first model produced 65 Watts at 40Hz, the model here manages 100 Watts at 40Hz. Our review sample was a David Shaw Signature version costing £7149.95, fitted with Shuguang Treasure CV-181 and Full Music 6SL7

valves, and Jensen copper foil, paper-in-oil capacitors.

Being on its second update I assume the MB845 has been a success for Icon Audio. And it deserves to be, for I've been using the amplifier for review purposes ever since it appeared in 2009 and it remains as awesomely capable today as it ever was. This is one of the best amplifiers available, capable of shaming most else, so even though it is not the bargain it once was, it remains competitive. It also remains a rare breed: there are few 845 amplifiers around.

The MB845 MkII is built in mono block form to make it usable in the home. Each amplifier weighs 33kgs and is a two-person lift. Most of the weight lies in the two massive transformers. Dimensionally, each chassis isn't impossibly large, measuring 24cms (10in) wide, 57 (22in) cms deep and 28cms (11in) high. They sit on the floor nicely, either side of a rack, or close to the loudspeakers. And as our pictures show, the thoriated tungsten filaments of the big 845 triodes glow bright orange, like mini lighthouses. These are amplifiers you'll see and enjoy seeing. They are nothing short of breathtaking to look at, a real visual statement.

Happily, it's not a hollow statement. Delivering a measured 100 Watts right down to 40Hz, meaning low bass frequencies, the MB845

"to sit in front of the R500s with Nigel playing Vivaldi's 'Spring' was joyous"

MkII is very powerful as valve amps go and can drive any loudspeaker to enormous volume. There are 8 Ohm and 4 Ohm taps for loudspeaker matching and I used the 8 Ohm tap, as it has a faster sound than the 4 Ohm tap, something I will explain later.

Icon Audio have done a great job in keeping the MB845 MkII 'sensible'. It does not use 300Bs as driver valves, because they are hideously expensive. It uses 'fixed bias' for maximum power, but bias adjustment metering is now on-board and relatively easy to do. Yes, 'fixed bias' means you have to adjust bias every now and then, when the needles on the meters move out of the black area, but it is just a case of twiddling adjusters accessible from above – no need to undo anything. In fact, you must not undo anything as the power supply produces 1500

Volts, but there are no exposed anode top caps or such like. It's still best if the cat doesn't get too close and those removable top covers prevent children touching the hot glass envelopes.

The rear panel carries an unusual sensitivity switch that alters feedback. Icon Audio recommend it is set at Low (L) for lowest distortion and highest damping factor. I agree with this; it does offer the best real world compromise. Set to High (H) sensitivity increases (450mV), and both bandwidth and distortion worsen, but only by a small degree.

High has two benefits: it increases gain, to better cope with a low output Phono stage for example. And it also offers a slightly more relaxed and spacious sound. The biggest subjective disadvantage is that bass becomes softer, even wallowy. However, this happens only with loudspeakers that are not well damped acoustically. I have used High in the past to energise bass of an over-damped near-wall mounting loudspeaker, so what you encounter when you flick this switch, apart from a sudden change in volume, depends mostly upon the loudspeakers you are using.

A standard input sensitivity of 1V means any preamp can be used, if you need a preamp that is. Silver disc players produce 2V maximum so a passive volume control will do, or a transformer ('magnetic') volume

control or a normal valve preamp such as the LA-4 MkIII from Icon Audio.

I didn't use any of these, but a NAD M51 DAC with inbuilt 32bit resolution volume control. This means as volume is reduced distortion does not rise. It allowed me to adjust volume by remote control and avoid intervening preamp circuitry that could affect the sound.

The outgoing MB845 MkII had a press button front panel power switch. The new 'm' version uses a small, light action toggle switch on the left side of each front panel. Flick it down and a strong glow immediately bursts forth from the 845 valves as they light under the initial current surge. The meters light orange too. It all looks traditional, but purposeful also. There are no accompanying noises, like the 'thrum'



**Get the needle into the black and bias is correct, it's as simple as that. Tweaking bias on this 'fixed bias' amp is quick and easy.**

**Our David Shaw Signature version had, at front, two Shuguang Treasure CV-181 driver valves with internal black High Polymer Carbon Compound glass coating that reduces secondary emission. At centre is a Full Music 6SL7 triode preamp. These valves have d.c. heaters to reduce hum.**

**At rear sit Icon Audio branded 845Bs, with their graphite anodes.**

I get from my big 300B amplifier, nor any clicks, pops or bangs from the loudspeakers. The MB845 MkII starts silently so the timorous will feel no need to flee the room. The meter switch at right is a three-position unit with Up and Down positions showing bias, whilst Centre shows output. The linear voltage scale means the needle rarely gets past 10% even when running loud, but it does reach 100% at full output. I could not get close, even running intolerably loud, but then it is difficult to use 100 Watts from any amplifier unless the loudspeakers are very insensitive.

Measurement showed flat frequency response with the 8 Ohm tap but treble loss of -3dB at 20kHz on the 4 Ohm tap, an odd situation probably explained by feedback being taken from the 8 Ohm tap. The MB845's output transformers are made large to handle bass power, feedback correcting for treble droop due to distributed capacitance and leakage inductance in the windings.

In use with KEF R500 loudspeakers, I subjectively preferred



the 8 Ohm tap for its faster, more incisive sound. However, bright loudspeakers can be tamed by using the 4 Ohm tap and it may well be preferable in some cases. Generally it is best to use the 4 Ohm tap of a valve amplifier because it is more linear when mismatched 'up' by an 8 Ohm speaker than when an 8 Ohm tap is mismatched 'down' by a 4 Ohm speaker. Power is less of an issue because so much is available.

So although the big MB845 MkIIms may look a bit scary, they are perfectly normal and fear free in use. I have been using them without any problem for years.

## SOUND QUALITY

As I explained in my first review of the Icon Audio 845 (Jan 09 issue), a thirty minute warm up period is needed before they really shine, but then this is common with valve amps. I've always been aware my World Audio Design 300B amplifier sounds best after the same period. I fed the mono blocks direct from an NAD MI DAC fed from a Cyrus CDt transport. Loudspeakers were KEF's impressive new R500s, in for review and Quadral Aurum Wotan Vllls.

Big 845 graphite anode valves deliver massive dynamics if they're used in the right environment and what you get with this amplifier is just that – the right environment. Massive output transformers able to deliver in excess of 100 Watts make the Icon's MB845 MkII amplifier sound monstrously powerful. Think pile driving bass power and thunderous midrange dynamics too; everything just jumps out of the loudspeakers. I remember a friend buying his first valve amplifier, a Audio Research VSi55, and he was shocked that it was more dynamic than transistor

amplifiers. The Icon Audio MB845 MkII is one of the most dynamic valve amps on the market today. But it wraps an iron fist in a velvet glove; its vast reserves of power propelled Hugh Masekela out at me singing 'Stimela', his whoops and shouts stabbing out of the KEFs to hit me hard. Backing singers were arrayed densely between the loudspeakers, forming an intense backdrop. Masekela sounded full bodied, his voice richly textured as he sang about working in the mines of Johannesburg, and the "funky, stinking" living conditions of the workers, a tale that resonates again today. But whilst the MB845 MkIIms are deliciously forceful they are smooth and treble seems almost absent, it is so much a part of the sound. That's not to imply the MB845 MkIIms sound warm; they do not. Their force continues up through the upper midrange, so when Masekela ends Stimela with his impersonation of a hissing steam train his sibilants stung me, they were so strong.

Like all valve amplifiers the MB845 MkIIms set up a huge sound stage with a glorious sense of depth. Roger Waters' guitar notes floated through a cavernously space as he sang 'Amused to Death', a quality that sets an amplifier like this ahead of most thermionic competitors and in a different league to any transistor amplifier.

There was so much power available I had to spend a Sunday morning listening at high volume, when our office building was empty. No good doing this at home because my neighbours wouldn't stand such levels, even though I am on good

terms with them! And with the sensitive KEFs I couldn't find the upper volume limit. Huge drum beats shook our office listening room, staking out a mournful beat behind Mercedes Sosa singing 'Misa Criolla' and the supporting choir was vast in scale, filling our room. Combining scale with power, the MB845 MkIIms are expansive to a degree others struggle to approach.

In spite of their relatively high damping factor of 10, as valve amps go, the Icons sounded a little overblown at low frequencies with the KEF R500s so I used the supplied foam bungs to improve bass damping and remove low bass overhang. This is a drawback with all valve amplifiers, mostly with low or zero feedback designs. Modern loudspeakers are optimised for solid state amplifiers, not valve amplifiers. Commonly, acoustic damping must be increased to compensate for the low electrical damping a valve amplifier applies, but it isn't a difficulty. Ported reflex loudspeakers are tuneable in this regard and happily KEF supply a two-part foam bung for the R500s that did the job nicely. Then the Icons thundered their way through tracks like Dadawa's 'Canton Story' and Lady Gaga's 'Monster'. Because they are so utterly rich and smooth it was easy to just wind the volume to huge levels and sit back and enjoy the fireworks.

Surprisingly perhaps, this seemed to apply more to Nigel Kennedy's violin than the subsonic synth lines behind Monster. To sit in front of the R500s with Nigel playing Vivaldi's 'Spring' was joyous. The scale of the performance, its fast pace and its



*At left is the Sensitivity switch, with H and L positions. Icon Audio recommend it is set in the down position to L, that gives most feedback and lowest output impedance (best Damping Factor).*



Two chokes at bottom right enable the CV-181 drivers to swing enough volts for the 845s.

sunny demeanour all flowed from the R500s with a gusto that was impressive. That made the Icons very emotive, I realised. Their dynamism and pace put them at a polar opposite to big transistor amplifiers that so commonly sterilise these properties. The Icons played Nigel beautifully; I heard right into every fine nuance of what he was doing and was informed of the way he so skillfully conveys emotion. Perhaps I need to note that these amplifiers have no screech or harshness to them; big 845 triodes are the very peak of perfection in this area, having a meatier, richer yet equally smooth

delivery as 300Bs. Horns blared out strongly in Tchaikovsky's 'Marche Slave', whilst violins danced behind them as the orchestra beat out the military theme with thunderous scale. It was almost breathtaking as the pace gathered toward the momentous finale, which the big Icons managed with majesty.

Finally, the tuning package of premium quality valves and Jensen capacitors focusses the sound and adds a dark smoothness. I took to Jensen capacitors long ago and have always used them for their firm, damped sound. The valves also bring extra focus and clarity, lessening

problems such as microphony and secondary emission off the glass envelope.

CONCLUSION

If you want to enjoy music on a huge scale these are the amplifiers to go for. Both sound staging and dynamic punch, right up through the midband even, are unequalled. What the 845 valves bring – and I think this is important – is an intensely smooth but dense quality that gives singers, for example, a sense of body and scale that is superb; only a 211 comes close. Paralleled KT88s, 6550s or KT90s do not have the same quality. The MB845 MkII is not just a big valve amplifier, it is a big 845 amplifier.

The Icons maintain an easy grip on pace as well, but their huge bass power is not matched by the icy grip of a solid-state amp so loudspeaker matching must be given thought and attention. Well damped (acoustically) loudspeakers are needed, but modern ported floorstanders with foam bungs, especially two-part bungs, suit. Partnered suitably, the MB845 MkIIms impress me today as much as they did in 2008. They're a great way to enjoy music.

VERDICT

Smoothly powerful valve amps that set standards in what is (just) possible within the home. Awesome.

ICON AUDIO MB845 MKIIM  
SIGNATURE £7149.95/PAIR  
Icon Audio  
+44(0)116 2440593  
www.iconaudio.co.uk

- FOR
- powerful dynamics
  - smooth
  - expressive

- AGAINST
- weight
  - heat
  - adjustment

MEASURED PERFORMANCE

The MB845 MkII produced 105 Watts into an 8 Ohm load and 100 Watts into 4 Ohms so the secondary coupling efficiency is good. This is a lot of power for a valve amplifier and demands big output transformers for there to be enough iron to avoid magnetic saturation at low frequencies. The amplifier swung a full 100 Watts at 40Hz without difficulty (1% distortion limit) so there is plenty of power bandwidth. It also swung full output at 10kHz.

Using the Low sensitivity setting (L) as recommended distortion levels were low in the midband, just 0.07% second harmonic at 1kHz and 1 Watt output, rising to 0.5% second harmonic at full output (-1dB). Low frequency distortion (40Hz) measured 0.5% at 1 Watt and 0.6% just below (-1dB) full output so there will be no bass doubling, a lightening of timbre.

Results were slightly better from the 4 Ohm tap, driving either a 4 or 8 Ohm load so as usual this tap is a good option, as most loudspeakers now use 4 Ohm bass units. The only minor peculiarity was a slow roll down in high frequencies when using this tap, not evident when measuring the 8 Ohm tap. Frequency response from the 8 Ohm tap was flat to 20kHz but a slow roll off started above 8kHz from the 4 Ohm tap. In use it may well have a slightly warmer sound, but this will depend upon the impedance of the loudspeaker, 8 Ohm speakers suffering less roll off than 4 Ohm models, to be expected from an inductive source.

Damping factor of 10 was measured with the 4 Ohm tap, falling to 5 with low feedback (High sensitivity). The 8 Ohm tap, with its

greater number of turns and output impedance, had a lower damping factor that measured 6. As valve amps go these values are reasonably high, especially 10 from the 4 Ohm tap and will audibly exert better bass control than valve amps with a Damping Factor of 2 or less.

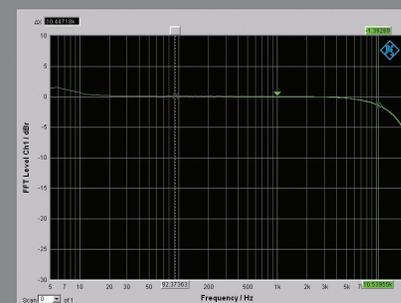
Sensitivity was normal at Low, measuring 950mV for full output, and 450mV at High, with less feedback applied. Bandwidth reduces and distortion rises with less feedback as expected, but not to any great degree. Subjectively, reducing feedback on a valve amp makes for a more open and easy sound, if one seemingly a little less tight and controlled. A complicating factor here is the acoustic damping of the loudspeaker; bass heavy, under-damped speakers will wallow with a low damping factor amp of 2 or less.

The MB845 MkII remains a very powerful, fixed bias 845 amplifier. With massive bass power and a relatively high damping factor it will have the

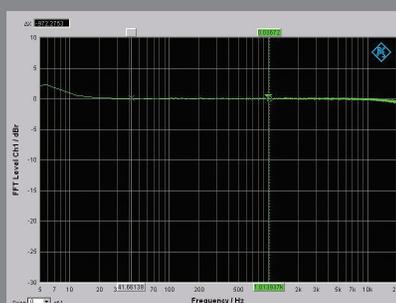
enormous kick of its predecessor, plus the big lush sound of the graphite anode 845 valve. NK

Power	105watts
Frequency response	10Hz-20kHz
Noise	96dB / 0.8mV
Distortion	0.1%
Sensitivity	950mV
Damping factor	10

FREQUENCY RESPONSE 4 OHM



FREQUENCY RESPONSE 8 OHM



DISTORTION

