

40-TON TONE

GBINFO

MARSHALL JTM45/100 SUPER LEAD HEAD

PRICE: £3324 (full stack)

BUILT IN: UK

TYPE: All-valve head

POWER: 100 watts

VALVES: 3 x ECC83, 4 x KT66

FEATURES: 2 channels – high treble and normal – each with high and low sensitivity inputs, dual-output transformers (50 watts each) feeding 2 x speaker outputs

DIMENSIONS: 270(h) x 740(w) x 210(d) mm

WEIGHT: 22kg

MARSHALL 812T40 & 812B40 CABINETS

PRICE: Only available with head as a full stack

BUILT IN: UK

TYPE: 8 x 12 speaker cabinet, divided into two 4 x 12s

SPEAKERS: 8 x 12-inch Celestion T652 alnico

POWER HANDLING: 100 watts per cabinet

DIMENSIONS: 754 (h) x 741 (w) x 355mm (d)

WEIGHT: 36kg (812T), 39kg (812B)

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CELEBRATING 40 YEARS OF THE MARSHALL STACK, THIS LIMITED-EDITION REISSUE PAYS FAITHFUL HOMAGE TO THE AMPLIFIER THAT POWERED THE FIRST WAVE OF BRITISH ROCK. **MICK TAYLOR** FINDS OUT HOW IT HOLDS UP IN HIS GENERATION.

Hands up everyone who was born in 1965? Well, did you know that this year, you share your 40th anniversary with the most iconic of all guitar amplifiers: the Marshall stack? Introduced in 1965, the original head, plus eight 12 inch speakers in one cabinet(!), came at the request of guitar players – specifically Pete Townshend of The Who, so the legend goes – to offer more volume than they could achieve with their mid-sixties 50-watters.

Marshall experimented with different tubes and output transformers to double that figure, first passing 60 watts with four 6V6 valves and a valve rectifier, then dropping the valve rectifier, adding an extra output transformer, and finally using a quartet of KT66 output valves to scale the magic 100 watts. The result was something closely resembling this: 2005's limited edition, 40th Anniversary Marshall JTM45/100 Super Lead head.

Produced in a run of just 250 full stacks, this amplifier has been painstakingly planned, researched and reproduced, building on the success – and hopefully enhancing the already great reputation – of the company's recent Handwired range.

PRE & POWER AMP

The first important point to make regarding the JTM45/100 is that it's a completely different amplifier from Marshall's more famous and highly revered 'Plexi' 1959 SLP head – the amp used by Jimi Hendrix, along with pretty much the rest of 1960s and '70s rock cognoscenti. The differences begin right from the moment you plug in, because, as the name suggests, the JTM45/100 uses the front end of the company's revered JTM45 amplifier. Designed by Ken Bran and Dudley Craven in 1962, the JTM45 was based heavily on Fender's 5F6A Bassman circuit.

This very simple preamp uses a twin-channel format – 'high treble' and 'normal', though it's not twin-channel in the modern sense of the term. Designed long before the concept of channel-switching came about, you get the option of two separate tonal responses – one with noticeably more high end, as you'd expect – with the addition of high and low inputs for relatively more or less gain to suit your instrument. Interestingly, the whole idea of 'good' distortion was something of a by-product of the quest for more volume in the mid-1960s, where players learned that cranking their amp

beyond its clean threshold resulted in the warm, round overdrive that we all yearn for today; it certainly wasn't what they were designed to do!

After that, the JTM45/100 front end comprises a simple three-band EQ – bass, middle and treble – and a presence control. Somewhat sparse by modern standards you might think, but that's exactly the point. Incidentally, some of the original stacks featured an additional tremolo circuit – Pete Townshend can often be seen with eight-knob tremolo versions – but that's not the version Marshall has chosen to replicate.

And where's the master volume? Well, it's around 10 years away if we're talking correct 1965 spec, because Marshall didn't introduce that concept until 1975. If you want distortion, you'd better get ready for bleeding ears, as this beast needs to be turned up.

Pumping out those 100 watts is a unique power section that Marshall has lovingly recreated, complete with the dual output transformers. At the time of its design, there wasn't an output transformer that could deal with 100 watts, so Marshall used a pair of the JTM transformers, made by Drake. The Drake company was able to find all of its original documents, meaning that the new units are made

MARSHALL

ROCKING HORSE POO

THE RAREST MARSHALL OF ALL?

Due to the quick development of amplifiers in the mid-1960s, the JTM45/100 stack didn't stay in production for long.

Continually evolving, Marshall had soon redesigned the preamp section and also found a single transformer that could handle a 100-watt output stage, meaning that the dual-output, 45/100 model is extremely rare.

The guys at Marshall – principally R&D heads Steve Dawson and Danny Thomas – know all about this.

as it was their task to trawl the globe looking for a suitable reference amp on which to base the limited-edition reissue. As Danny Thomas says: "We sourced an amp from a collector in Sweden, and from our point of view, it's very likely to be one of the original six or seven that The Who had in November 1965. After that, there are two PAs; one in Los Angeles and one in Japan, a bass amp in Italy and possibly two more of Townshend's Tremolo heads in the USA on the East Coast." Now that's rare.

to 100 per cent accurate vintage spec. The mains transformer proved a little more challenging, because the original 'De Luxe' unit, made by the RS company, is no longer available. Again, Drake has stepped in to build a modern replica, using a number of original examples for reference. It's a big ol' lump that contributes significantly to the JTM45's 22kg heft,

but moreover, it's also critically important to the dynamic response of your playing.

Power is derived from four KT66 output valves, a tube that featured notably in the JTM45 combo, giving a young Eric Clapton his fabled tone – and the amp its latter-day name – while in John Mayall's Bluesbreakers. Compared with Marshall's more customary EL34, it generally has a springier, warmer response that you'd associate more with Fender-style amps. According to Steve Dawson, R&D designer at Marshall, the tubes are Chinese-made 'Golden Dragon', which is currently Marshall's



Before the iconic script logo, Marshalls looked like this...

only reliable source for quantity orders. "So far I've had no cause for concern," he says. "I didn't pull any punches with the HT [high-voltage DC] on these amps; they are just as the originals, but valve quality is one thing we have very little control over. I think most guitarists would want the real deal at the expense of a couple of Chinese output valves now and then, and that's the philosophy I will adhere to. Analogy: I doubt if Yngwie Malmsteen would consider a less aggressive playing style in order to gain an extra couple of shows from a set of strings!"

In common with the original, and indeed the rest of Marshall's HW range, you'll find no printed circuit boards on the inside at all; instead, everything is lovingly hand wired

original configuration was for a single cabinet with eight 12-inch speakers, though that proved somewhat impractical for musicians and roadies. Legend has it that Pete Townshend and The Who requested that Jim Marshall literally cut the 8x12 in half to make two 4x12s. That's exactly what you get here, so much so in fact that Marshall refers to this configuration as a single 8x12, and that's also why there's just a single Marshall badge – also period-correct, you'll notice – on the bottom half of the '8x12'.

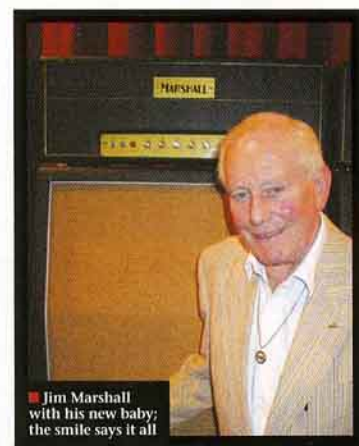
Constructed from solid ply and covered with black vinyl, the top cabinet only is left roughly 1/3 open. Steve Dawson: "I would speculate that it was a way of getting an open-backed combo sound, coupled with the traditional 4x12 closed-back

"THE ONLY REAL CONCESSIONS TO MODERNITY HAVE BEEN MADE TO PASS MODERN SAFETY STANDARDS"

using the period-correct tag-board approach. The only concessions to modernity are the IEC mains socket, externally mounted fuses, and new-style speaker impedance selectors. Without these changes, the amp would not pass modern safety standards.

CABINETS & SPEAKERS

Marshall's iconic 4x12 speaker enclosure has become etched in solid rock'n'roll history, having stood behind virtually every electric player of note at some point over the last 40 years. It wasn't designed that way, however, as this amplifier's story bears testament. The



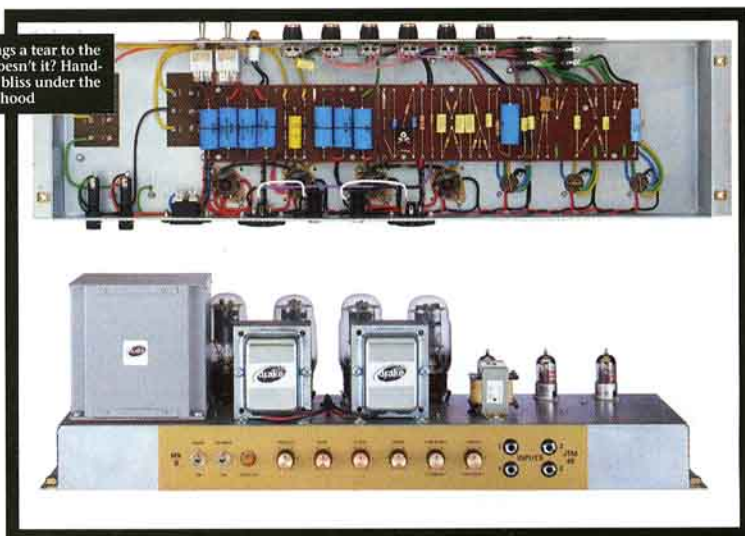
Jim Marshall with his new baby; the smile says it all

sound. Maybe a request from the artists, or even an experiment by Jim himself."

The speakers themselves are Celestion alnico magnet T652 units, similar to the fabled Vox 'Blue' you'd find in vintage AC30s. Like the Blue, they are quite a high sensitivity speaker, though have more power, handling 25 watts apiece. They're also extremely expensive compared with the majority of Celestion speakers, and, because there's eight of them, they contribute significantly to the cost of the whole stack, according to Marshall.

In terms of aesthetics, Marshall has recreated the original light brown grille cloth and, however annoyingly,

Brings a tear to the eye, doesn't it? Hand-wired bliss under the JTM's hood



"THE LEVEL OF VOLUME AND DYNAMIC DETAIL IS REALLY QUITE STAGGERING"

gone with the vintage-style strap handles, that frankly make the cabinets very awkward to carry. Lest we forget, we're talking pukka vintage spec, however, so in keeping with history even these must remain faithful, and at this price, if you don't

carry them in flightcases, you need your head looking at.

SOUNDS

Extremely loud and totally revealing, the JTM45/100 is a perfect example of why vintage amps aren't for the faint hearted, because the level of volume and dynamic detail is quite staggering. Touch the pick on the strings and you feel the air move. Engage in a little palm-muted chugging and your trousers literally start flapping. One relative GB newbie, brought up on a diet of digital modelling amps, was

actually quite scared by this stack. Indeed, if you're used to modern, compressed gain at low volumes, you'll find the JTM45/100 somewhat wild, angular and difficult to control by comparison. The trade-off for your persistence is the ultimate prize however; a tone so quintessentially classic rock, you simply won't be able to stop yourself banging out the riffs. There is no substitute: no digital modelling simulation even comes close to reproducing this physical, sensory experience, especially not at these volume levels.



Steve Dawson, R&D Designer, and head honcho behind the JTM45/100 re-release

I MADE THIS

Steve Dawson is Marshall's R&D designer, charged with the task of recreating the JTM45/100 Super 100. GB catches up with him for a quick chinwag about his new baby...

GB: What made Marshall decide to do the JTM45/100 in Handwired format?

SD: "The JTM45/100 was proposed as a limited edition right from the start. This being the case, it would not be deemed viable to design a PCB for a relatively small quantity. It is also common Marshall policy to manufacture limited edition vintage reissues in the format in which they originally were made. Almost everybody wants historical correctness, and a sense of investment with these products, which is what we've given - right down to the packaging."

How does the JTM45/100 differ from, say, a 1959 HW in terms of tonality and response?

"The 1959HW differs significantly in the output stage, and also the power supply topology. The 1959HW has one dedicated 100-watt output transformer, which has a different sonic agenda in terms of

A BIG JOB, BUT SOMEBODY HAS TO DO IT...

insertion losses and other factors, which affect the final tone. The distortion figures at 100 watts are a little different because of this.

"The type of power supply rectification and smoothing of the HT (high voltage DC supply) is also different. The sound has been described as '100 watts worth of 50-watt dynamic', interestingly. For me, the JTM45/100 has a warmer blues rock tonality than its hard rock-oriented sibling."

Given that you have 50+50 watts, is there any danger in running one cab on 50 watts?

"I have conducted many tests with one cab only, and found no detrimental effects or spike activity in the unloaded transformer. The amps have been run with one cabinet for many days with no cause for concern. In the handbook, we do cite one-cabinet operation as an option, however, the amplifier is optimized for two cabinet operation by virtue of the feedback configuration and reflected impedances when properly loaded. Situations regarding use of Powerbreaks etc. on low settings for prolonged periods of time with one cabinet may possibly be a cause for

concern, as yet nobody has had any issues at all."

What was the hardest part, technically, of recreating this amplifier?

"The hardest part technically was getting the thing through current 'electrical legislation'. You can imagine a 1965 valve amplifier horrifying the test houses!

"The missing parts of the technical research also had to be filled in using my own judgment, which is inherently a big responsibility, it comes down to my ears as well as technical knowledge. Over the years I've played, repaired and modified several Marshalls from this era so I'm quite familiar with this vintage and I'm happy to say I've had no criticism so far. The tone really has amazed some highly seasoned players."

Over three grand is a lot of money - is this amp mainly for collectors?

"Hard to say, but I've known some people who have spent more than that on some horrible guitars! Remember also that by its very nature this will become a 'collectors' item and therefore is an investment to anybody who buys it."

DETAILS

REISSUE EXCELLENCE MAKES THIS AN INSTANT COLLECTORS' PIECE



■ The true-to-history, simple but perfect EQ



■ Marshall supplies all the peripherals, including high quality slip covers and a commemorative manual and certificate of authenticity in a separate box

GBOPINION

MARSHALL JTM45/100 ANNIVERSARY STACK

GOLD STARS

- ★ Exceptional tone
- ★ Historically correct (where possible)
- ★ Highly collectable

BLACK MARKS

- One sound, lots of money

IDEAL FOR...

Collectors, and classic blues/rock fans wanting the absolutely ultimate mid-60s British tone

Using the 'high treble' channel with a Gibson Les Paul Standard is an experience bordering on enlightenment territory. With a considerably softer, rounder attack than an a 100-watt 1959 Plexi, the JTM45/100 is better suited to blues rock, with seemingly infinite variations of distortion, pick attack and feedback as you use the guitar's whole dynamic range. The amplifier almost demands it of you, coaxing more texture than you'd think possible from such an ostensibly simple setup.

Dawson's analogy of '100 watts of 50-watt dynamic' holds a lot of water; that's to say it's altogether spongier and more elastic-feeling under your fingers than any 100-watt Marshall I for one have ever played. Crunchy, savage, then sweet as a nut when you roll the guitar's volume back, it ekes more from you as a player than you knew you had.

The 'normal' channels and high/low input options are also worth investigating, where you uncover more of the JTM45/100's idiosyncrasies. Linking the channels is rewarding too; you can blend the spikier, edgier rawk of the 'high treble' channel, with more bass and mid thump of the 'normal' channel, and mix them to taste with their individual volume controls.

"THE AMP EKES MORE FROM YOU AS A PLAYER THAN YOU KNEW THAT YOU HAD"

The harmonic content of the JTM45/100 is grin-worthy too; virtually any note will ease into musical feedback if you let it sustain, making those Angus Young / Jimmy Page moments oh-so satisfying. Steve

GBCONCLUSION

TONE AND AESTHETICS TO DIE FOR, BUT IT'S GOING TO COST YOU

■ Limited edition, plus historically correct, equals loads of money. Sure, the £3k+ price tag looks a lot, but let's face it, you can spend that easily on a new, big-name US amplifier these days. It's all academic of course, because with just 250 units worldwide, Marshall won't have any trouble at all selling them.

The build quality, aesthetics and tone of the JTM45/100 Anniversary Stack are all beyond question, and let's just reiterate how good that tone is for classic British blues rock. The question however, hangs over who's going to buy one. They're instantly collectable and extremely valuable, so it's likely that some, if not most, will end up locked away, or pampered as prize possessions. That would be something of a shame, because this is a thoroughly cracking amplifier that everyone deserves to hear, given the sheer scarcity of the original mid-1960s models. Just don't forget your earplugs and credit card! **GB**

GBRATINGS

MARSHALL JTM45/100

PRE & POWER AMP	★★★★
CAB & SPEAKERS	★★★★
SOUNDS	★★★★
VALUE FOR MONEY	★★★☆☆
GBVERDICT	★★★★