

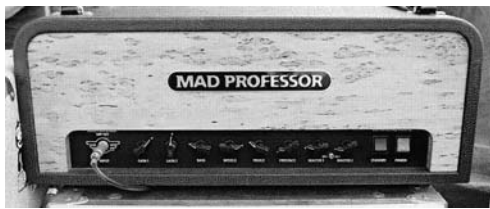
# the ToneQuest Report™

The Player's Guide to Ultimate Tone



## Mad Professor

One of the key components in Mark Karan's live rig is the formidable Mad Professor MP101 amp. As we pondered the true intention of the MP101 and its imposing presence in our music room, it occurred to us that in all the years we have been writing amp reviews and interviews, we had never featured a 100 watt amp that was actually being used on stage by a featured player. Fifty watt versions, yes, and we have tinkered with a vintage 100 watt Marshall or two, but this was a first – a true performance amp with the power to absolutely crush a curious reviewer working in such close proximity to so much air being moved. To protect our ears from the sound pressure created by the MP101, we put up a big Clear-Sonic baffle and let fly over the course of two weeks with stellar results. We also asked the agreeable fellows in Finland at Mad Professor to explain the origins of the MP101 (which we began referring to here as the Magic Pig), and the OS21 prototype we received for review. An informative response from the chief designer of Mad Professor amps, Björn Juhl follows:



I once saw one of my favorite bands play in a stone hall and they had

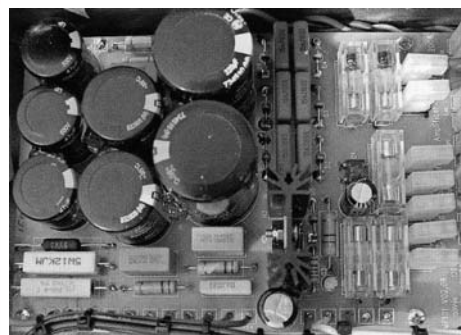
added a second guitarist whose sound was so shrill that I hid between the wooden benches so only the reflection of the sound reached my ears. As a musician and an ardent fan of various guitarists, I have heard all kinds of good and bad guitar tones. I'd think as a musician, one would strive for a sound that gives feedback – both the playable feedback like that which Hendrix mastered, and also the kind of sound that inspires the imagination of the musician. It seems that great sounds travel through generations – from the 15th century crumhorn, to the saxophone, and the modern electric guitar. Considering the amount of distorted guitar tones that emanate through speakers worldwide each day



in a continuous flow, the distorted electric guitar might have had a larger impact on people than man walking on the moon. As a designer, I primarily work with sounds,

studying the composition of distortion, removing unpleasant overtones and applying filtering techniques, while defining the range of the controls so they are intuitive to the user. The biggest inspiration in amplifiers were those that had a sound I *didn't* like, because these amplifiers taught me what to avoid and to understand why certain sounds are not pleasing and how to avoid them. I have studied why, for example, on certain amps at full tilt you can only play one note or possibly two at a time and only on the top strings before the amp begins to become muddy and indistinct. I have also studied why E7 on the top strings can, on certain amps, sound out of tune.

The MP101 is inspired partly by feedback we received from users of the Mad Professor Model CS-40 – considerations like two foot-switchable channels, simpler controls, louder output, and a more modern, heavily distorted sound. If the Model CS-40 is a design that gives the musician the tools to sculpt his own sound, the MP101 is a design in which the sounds are *preset*. The best comparison I can think of as far as the inspiration for the sound of the MP-101 is taken from the sound of a perfectly set up VOX AC-30 TB just below where it starts to distort, but with the transient response of a Hiwatt or a Marshall Major, or the sound of a 1965 Super Reverb with the volume control set on "6" that a sailor once brought to my shop. Or perhaps the sound of just one Marshall model 1985 set on "6" at the brink of oscillation, where gain would be traded for bandwidth, causing artificial gain, but on the magic spot where distortion is dynamically controllable.... The sound of *rock*. For channel two, I thought of a high-gain sound with the clarity of definition of an artfully mastered recording.



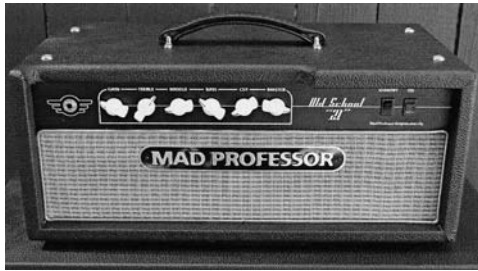
The design of the MP101 is mostly about creating the feel and the range of sounds within the preamp. The power amp is only allowed to

distort for the last inch of power, and since the power amp does not distort abruptly, but more *gradually*, power levels of near 120 watts can be drawn. Now, considering that such a loud amplifier would rarely be played at full output, what would otherwise be a magic sport in the output of the power

amp where it starts to compress would preferably be moved to the preamp section, so the full range of sounds can be played at any output level. To do this, even at its cleanest setting, the preamp produces high gain, which creates a rich sustain effect. To get this feel, I'd advise setting the volume control of channel one to the point where it just starts to distort at the highest transient the guitarist can play. This places the sound in the window created by the noise floor and distortion roof, much like cranking a non-master amp to the point where the power amp is close to distortion. The pivot point in the preamp gives a similar behavior, but now independent of output level and consistent throughout the range.

### Old School 21

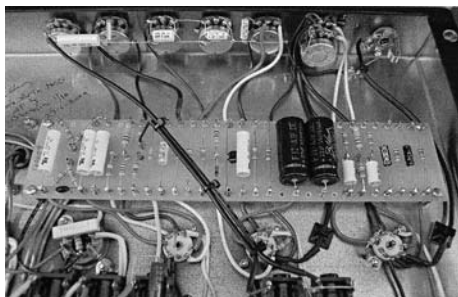
I think this is the amplifier that Harri Koski of Custom-Sounds Inc. and MP Amplification once asked em to build in 2001. Many musicians have asked me to build something



like the OS21 in the past – a smaller, portable amplifier. I have played a lot of popular small

combos that were provided for the backline with bands I have played in, and most of them seem to lose clarity within chords when pushed to distortion. I specifically recall a Gibson Ranger that had a sound that made the hairs on your arms stand on end, but it could not be played in F# or B!

I received the raw combo chassis and cabinet build from Jukka Mönkkönen from Mad Professor Amplification with no speaker, and in the spring of 2008 I finished the wiring and brought the amp into the test room. We played it and fine-tuned perhaps ten different versions, contemplating which sounds would be most desirable and useful, while also considering the attributes of all the various small combos I had played in the past. This was an exercise in working with



limitations, since the voltage is fairly low, and filter techniques would be instrumental in removing undesirable overtones to

shape the sound for clarity within the desired range of controls. I specifically defined the range of sounds so that it would be possible to use the amplifier for clean sounds that would take pedals well. I'd define this as a sound that has the "guitar treble," but not piercing, with strong midrange that would project well at various listening positions relative to the speaker. I filtered the bass response according to what the power supply could take when the amp was running at full power output and nearly a square wave – the worst

condition of operation. So there is a trade-off in available bass response considering the overall frequency response, and this also determines the total maximum acoustic power available. Ah, now an amplifier like this would swiftly reach distortion and compression mechanisms would come to play.... Setting the gain in the amplifier close to distortion at all times produces a very dynamic sustain effect, and setting up the Volume and Master to allow power amp or preamp distortion or a combination of both still retains brilliant clarity at any given setting.

Just yesterday a guy asked if now that I had designed these amplifiers in various power ranges, would I also consider making a really small amplifier – something to drive an 8" speaker? Well if a good 8" speaker could be found, an amp could easily be designed for it, since the speaker is half the sound of an amplifier.... Have fun!

### MP101 Review



Okay, some of you – most of you even – may cringe at the mere thought of facing down a 100 watt amp, no matter how good it may sound. We understand. But remember, you can always pull two power tubes and knock the decibel level down while retaining the extraordinary clarity and overdriven tones that have been so carefully designed within the MP101, or use an attenuator like the

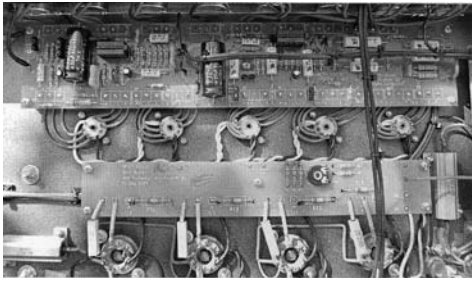
Ultimate that we often use here. Like the '72 Marshall Super Lea 100W we optimized and reviewed last year, even with two tubes pulled, big iron makes for a bigger sound that similar 50 watt amps just can't match. There is a reason why vintage Marshall and Hiwatt 100 watt amps are prized by knowing players, and the MP101 elevates the realm of high-powered rock amps to an entirely new level of sound, tone and robust, roadworthy whoop ass.



Controls are straight up – gain for channels one and two, bass, middle, treble, presence controls, a master volume for each

channel, a toggle switch for channel selection plus footswitch, with an FX loop and 4, 8 and 15 ohm speaker outputs on the back panel. Under the hood you'll find massive transformer set built by *Mercury Magnetics*, a quad of premium TAD EL34s, and a meticulous layout that includes, yes... a printed circuit board, but none of those pesky and troublesome pots that are intergraded into the board like many "modern" amps.

As Björn Juhl observed, the MP101 has been built with very well-crafted, pre-set voices that produce exceptionally rich sustain and harmonic character from both channels, with adjustable gain and master volume settings for moderate to



intense levels of volume, gain and gloriously, riotously polyphonic distortion in Channel Two. We should also point out

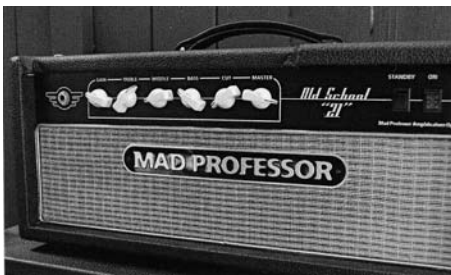
that given the robust power of the MP101 and Juhl's master volume circuit, you can bring the volume down while getting the gain at higher levels while completely avoiding an unsatisfying posh wank – the kind of faux, low-volume, unfortunate distortion you may have heard from a bad attenuator or certain Peavey “boost” circuits. The MP101 sounds rich, juicy and thoroughly inflames at all but the lowest volume settings. Will it do “Fender Twin” clean tones? No – and it wasn't intended to. In the tamer Channel One you'll hear very subtle second order harmonics, slight compression and a hint of emerging breakup even with the

gain level set low, similar to what Juhl described as “the sound of a perfectly set up VOX AC-30TB just



below where it starts to distort, but with the transient response of a Hiwatt or a Marshall Major....” And this is good – especially if you're the type that can appreciate the sonic difference between a rabbit path and a four lane highway. Channel Two steps up the available gain and distortion to appropriate levels of anarchy worthy of an all-night car burning party in Paris. Every one gets a gas can and a match, merci, and no one goes home feeling cheated. *Laissez le bon temps rouler!* We won't lie to ya.... Our sessions with the Magic Pig left our eardrums stunned and itching, even with the Clear-Sonic baffle knocking down the blast waves emanating from the 101's 4x12 cab, but if you can tote the note, there isn't a bad tone to be found in this amp at virtually any EQ, volume or gain setting, or with any guitar and pickup combination you desire. The MP101 is simply an elegant work of violent luv with a voice as bold and enduring as the midnight sun over Finland. Truly a “plug & play” masterpiece. Tune yer Les Paul down to “B,” hit a fat-bottom E chord and step back.... *Fall mountains – just don't fall on me*

### Mad Professor Old School 21



Here's what we wrote during our initial dalliance with the dual 6V6 OS21: “An old school Marshall PA 20 with more

power, volume, fidelity and depth.... If the ‘Marshall 18 watt thing’ is for you, this is your amp.” Indeed, the OS21 is a

great little small-box, compact rocker. We wouldn't necessarily describe it as a blues amp, however, unless your name is Walter Trout. We didn't really feel that the Old School truly woke up until we had set the gain control at 2-3 o'clock, and while the master volume is very nice, it would be a crime not to fully light this one up. In our opinion, the OS21 was built to burn with rich, middy sustain and what seems to be Björn Juhl's signature obsession with clarity, musical top end and solid bass response. Sure you can back off on the gain, crank the volume and use a boost pedal with excellent results, but you won't be getting lush Fender clean tones at lower volume levels with this amp. Like we said... Marshall PA 20, only better. Once again, controls couldn't be simpler – gain, treble, middle, bass, cut and master volume. The cut control is the familiar “VOX” variety – very useful with bright single coils for producing a broader range of usable tones. We wouldn't use it much with humbuckers. As with the MP101, an FX loop and multiple speaker outs are located on the back panel. Unlike the 101, the OS21 is completely hand-wired with turret board construction, and the accompanying 2x12 cab was loaded with a pair of excellent Celestion G12H 30 70<sup>th</sup> Anniversary speakers.



You may recall that we called “timeout” on the 18 watt, dual EL84

Marshall clone fever some time ago. Yes, it was a titillating thrill when these amps first emerged, and we fully supported the burgeoning cottage industry that sprang from the 18 Watt Page, favorably reviewing amps built by Gabriel, Balls, DST and the handwired Marshalls, while acquiring and reviewing vintage Marshall PA 20s and a particularly rare Marshall Lead & Bass head and 1x12 cab. All great amps, but let's be honest... they are largely limited to essentially one sound (turn it up “8” and play). So perhaps you can understand why we reached a point where we just didn't want to see any more of them – there was just nothing left to say. However, we must give a deserving nod to Björn Juhl and Mad Professor for having upped the ante significantly within this range of moderately powered amps. The Old School 21 simply rocks with more tone, responsiveness and authority than most of the 18-20 watt amps we have played in the past (including our vintage models). Well done, and highly recommended for low-volume rockin', mate.

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