MM/MC tube phono preamplifier
Made by: European Audio Team, Slovak Republic
Supplied by: Henley Audio Ltd, UK
Telephone: 01235 511166
Web: www.euroaudioteam.com; www.henleyaudio.co.uk
Price: £7999

AUDIO FILE

hi-fi news OUTSTANDING PRODUCT

EAT E-Glo 2

EAT's first-ever phono amplifier, the all-valve E-Glo, is retiring after a decade of service. Its replacement is the E-Glo 2 with fresh styling, balanced inputs and illumination!
Review: **Ken Kessler** Lab: **Paul Miller**

After ten faultless years of duty, my trusty reference phono stage, the EAT E-Glo, has been superseded by the E-Glo 2 (£7999). The changes turn out to be more than merely cosmetic, as I was first led to believe in a hasty conversation with EAT (European Audio Team) founder and CEO Jozefina Lichtenegger. She matter-of-factly explained that, due to customer demand, the company redesigned the look of the E-Glo in a number of ways.

Not least was giving the external power supply the exact same look – the same slim alloy chassis – as the phono preamplifier itself. You can position them side-by-side or stacked, and I prefer the latter because it saves space. What inspired the update was how the original E-Glo came fitted with wooden side cheeks on the control section, while the power supply did not. This could create a disconcerting look when you partnered the two boxes.

LET IT GLO

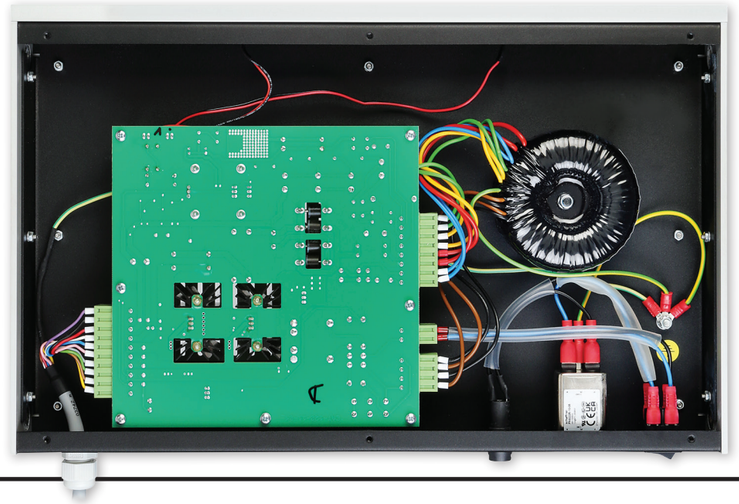
Even more controversial was the protection for the six valves – four ECC83s and two ECC88s – which on the E-Glo comprised three layers of circular metal discs and made it look like a spacecraft. For the E-Glo 2, and what is the most obvious visual change, the valves are now surrounded by clear glass-like cylinders that can be illuminated in one of four colours and at four levels of brightness (or switched off, if you wish). The choices are blue, red, green and a sort of spearmint-y white. Amusingly, the blue glow matches McIntosh and vintage Marantz lighting.

While dealing with external details, the E-Glo 2 is offered in black or silver, and magnetic side cheeks are now optional, available in 'high gloss Makassar or piano black'. Dimensionally, the phono section measures 395x86x262mm (whd) and the power supply 395x61x280mm. All the rest save for two tiny details remains unchanged, including the green LEDs on the front to show cartridge settings, while the four switches operate mute, subsonic filter and MM/MC input select, the latter on both RCA and balanced XLR connections.

2B OR NOT 2B?

This balanced MC input is a new feature, as is the fourth switch in this row for the choice of tube illumination colour and brightness. Two rotaries define the MC impedance, with 'Gain 1' mode offering the highest 76dB gain with 10-1200ohm loading and 'Gain 2' (70dB) for 2-300ohm [see PM's Lab Report, p77]. MM capacitance values remain, too, at 50-840pF.

Save for the XLR inputs, the rear panel resembles that of the E-Glo. There are RCA connections for MM and single-ended MC, along with banks of DIP switches to set the primary cartridge gain for MC. The main power switch is at the back of the power supply, the toggle on the top of the phono section taking it out of standby. Connection between the two sections is through a 10-pin cable.



RIGHT: Inside the E-Glo 2 PS showing custom toroidal transformer [right] and underside of PCB hosting the multi-way voltage regulation

It's worth noting here that EAT, like Pro-Ject, Thorens and others, is embracing XLR balanced operation for MC cartridges. When asked why the E-Glo 2 had balanced inputs but not outputs, Jozefina explained that the high cost of implementing a true balanced output would have further elevated the price of the E-Glo 2, which she wanted to keep as close as possible to the legacy model. But she did leak a look to the future, saying 'there may be an "E-Glo 2B" with balanced output on the horizon'.

> 'My opinion of these reissues ascended to a new high'

CRYSTAL CLEAR

The cosmetic and input changes are enough to justify this phono stage's model name change. However, it turns out there's another internal upgrade, and this further rendered audible differences when used side-by-side with the original E-Glo, with the same cartridges and exact settings. EAT has installed new 'semi-crystalline hydrocarbon polypropylene film' capacitors instead of the E-Glo's MKP capacitors in the gain and RIAA stages. To this I will only add that the E-Glo 2 seemed a bit quieter, but then my

E-Glo has older valves and a decade's worth of wear-and-tear on it.

At this stage, I would ask you to grab a cup of tea or coffee and read PM's 'Max Headroom' boxout, below, and the Lab Report, p77. More than any phono stage I have reviewed in recent memory, EAT's E-Glo 2 is hyper-critical of cartridge choice due to the headroom limitations. Before seeing this boxout, I had been questioning my hearing, the condition of my cartridges, the tonearm setup and other concerns, so distorted was the sound with – purely coincidentally – the Ortofon 2M Red that PM cites in his analysis, and a high-ish output moving-coil.

Once PM had reassured me I wasn't imagining things, I need not replace any styli, and I found cartridges which could be used confidently with E-Glo 2, my initial reaction was of hearing a cooler-sounding, slightly faster iteration of the original E-Glo. The most significant variances occurred when using balanced inputs, which (and I know studio types will pooh-pooh this) seemed to lower the noise floor a bit. Either that, or it increased the dynamic span. Whatever the benefits, I stayed with MC via XLRs for most of the listening.

MUCH TO GAIN

Part of the transition from 'overload' to bliss took place in the middle of a binge of the new Beatles box set, *The 1964 US Albums In Mono* [Apple 02465 71746]. I knew there was hostility toward the US mixes, but I certainly didn't recall them ever suffering raspy noises which sounded horrifically like mistracking. As it turned out, it was the above-cited overload. Changing cartridges, and I was suddenly transported to my bedroom at Ashmont Street, Portland, Maine, listening to the mono US Beatles LPs when I was 12. Only then it was via a record player that probably tracked at 1lb.

Image solidity was exceptional and switching from stereo to mono on the Audio Research REF 6SE preamplifier [*HFN* Jan '21] showed no discernible differences. This will matter for those who have a number of mono LPs but haven't seen the value in a mono cartridge, or whose preamp lacks a mono/stereo selector. What was just as commendable was the way the set-up extracted exceptional low-level detail, but I am loath to suggest I was hearing new sounds in recordings I must have played a few hundred times. Suffice it to say, my opinion of these reissues ascended to a new high.

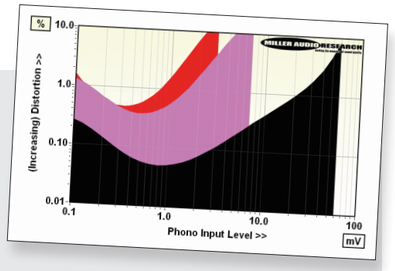
CALL A DOCTOR

Where the E-Glo 2 showed improvement over the E-Glo was in its 'snap' or speed, notable on such elements as the cowbell in 'You Can't Do That'. Even more valuable to this six-decades-plus Beatlemaniac was the manner in which each voice in the harmonising was perfectly identifiable. So fresh-sounding was this that I had to dig out my original copies to make certain I was hearing the E-Glo 2 and not the remastering. And, yes, it was the same with my 1964 pressings: the E-Glo 2 digs deep.

Sound quality certainly wasn't a question with that audiophile-grade masterpiece, Dr. John's *The Brightest Smile* ➪

ABOVE: Green LEDs on the PSU [bottom] are for on/off and triode 'anodes', while two rows across the front of the well-lit phono amp [top] display the selected MM/MC cartridge loading

MAX HEADROOM



Most MM pick-ups offer a 3-6mV output, and MCs some 10x less than this, at 1kHz/5cm/sec. However, while playing 'real-life LPs' all MM/MCs will deliver far higher outputs as they navigate the most highly modulated grooves. Ortofon's 2M Red [*HFN* Oct '08] will, for example, deliver peak outputs up to 50mV despite its 1kHz/5cm/sec output being measured at 6.5mV into 47kohm. Why is this important? Because any phono stage with insufficient input headroom will clip, causing a big increase in distortion that only gets amplified right down the hi-fi chain to the loudspeakers.

With its 'split passive' RIAA network soaking up a lot of gain, the EAT E-Glo 2's input headroom is necessarily limited. Here, instead of a typical ~60mV limit for its '45dB' MM input, the E-Glo 2 offers just 25mV headroom before distortion hits 1%. This is a +14dB 'safety margin' over the 5mV output of our hypothetical MM and about 5dB short of ideal. Fortunately, the E-Glo 2 offers the graceful clipping of an audiophile valve amp [see Lab Report, p77] so the MM input [black trace, inset Graph], MC2 [pink] and MC1 [red] inputs all offer very similar trends in this regard. MM, as mentioned, reaches 1% distortion with a 25mV input, and with 1.5mV and just 780µV (0.78mV) for the MC2 and MC1 inputs, respectively. If we slacken our tolerance to 3% THD, then the input limits rise to 44mV, 2.5mV and 1.3mV, respectively. For best results choose low/medium output MM and MCs only, and defer to the MC2 rather than default MC1 input wherever possible. PM

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ABOVE: MM input and equalised output are on RCAs while the MC input is offered on both single-ended RCAs and balanced XLRs. DIP switches set the MC gain while the external PSU [bottom] connects via an umbilical and lockable plug

In Town [Sundazed LP5659], a truly exceptional solo piano recording. Being just the Good Doctor and piano, it didn't fully challenge the soundstaging nor stereo capabilities of the E-Glo 2 after just six mono LPs. However, the fullness of the instrument did vary when fiddling with the mono/stereo toggle, the E-Glo 2 reproducing it with a 3D quality that somehow evinced a positioning of Dr. John just where he should be and in scale.

What it also underscored was the superiority of a live-to-tape, unplugged performance when recorded by a team that knows what it's doing. If piano is your reference, you'll find not just the LP itself but the E-Glo 2's playback to be of outstanding quality. I am not surprised, as Jozefina Lichtenegger would have voiced the E-Glo 2 with unamplified classical music.

RED HOT MAMMA

Turning to something more multi-instrumental, Tina Turner's *Tina Turns The Country On!* [Parlophone 5054197929304] from 1974 predates digital recording, so the sound is less clinical than on her platinum sellers a decade later. Here the voice was just as raucous and mike-busting as ever, even though the material was country-pop rather than 'red hot mamma' soul belting.

As indicated by The Beatles' mono recordings, the E-Glo 2 is masterful when it comes to separating layers of sound. Applied to Tina's studio sessions, on 'Help Me Make It Through The Night', with sax, piano, slow percussion and glorious, gospel-type backing, the sound oozed all-analogue warmth. But it never sank into that fat lushness which triggers angst in solid-state devotees: the crispness remained on the tapping of the snare, and the piano sounded almost as real as on the Dr. John LP.

By this time, having determined that the E-Glo 2 sounds best in balanced mode and that it therefore prefers MCs, I suspected it was voiced as well using the company's Jo N°8 moving-coil [*HFN* Dec '19]. So, yes, it matched that cartridge like salt-beef-and-rye. The synergy was inescapable, but it also dovetailed with a vintage Koetsu Urushi.

GLAD TO MEET YOU

I don't want to apply too restrictive a set of conditions to this phono amp, as there's a plethora of cartridges which will not tax its headroom constraints. But following PM's lead, this must be addressed when shopping for any phono stage. The big question would be: is it worth the added effort? It only took one LP to push all those buttons which deliver that epiphany when you know the sound is so right.

Admittedly, Skip James' *Today!* [Bluesville/Craft Recordings R00744] is another mainly unplugged, lone-instrument affair, but the sound is the direct opposite of the Dr. John set. It's guitar rather than piano, and Skip's voice is high and clear, an almost nasal falsetto that's lighter and more fragile than Dr. John's. On his classic reading of 'I'm So Glad', the voice floats, while the intricate acoustic guitar fingers are so vivid and tactile that it's hard to believe Cream turned this into a heavy rock gem. 'Sublime' best describes it.

HI-FI NEWS VERDICT

While in no position to replace the E-Glo, which remains my reference, the temptation is there despite the E-Glo 2's aversion to high-output pick-ups. It's versatile, it will accept three turntable/cartridge set-ups and above all, it precludes equally adaptable but all-solid-state phono amps for one over-riding reason: it sounds as a pure-valve phono stage should, but without hum or noise. And, oh, that illumination!

Sound Quality: 85%

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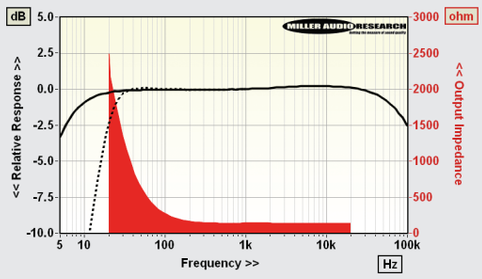
LAB REPORT

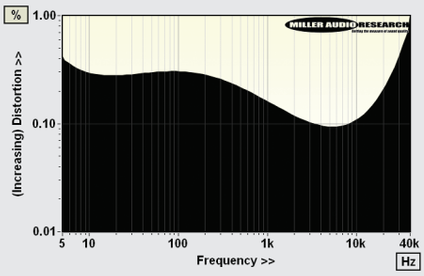
EAT E-GLO 2

Although we never tested the original E-Glo, we did look at the stripped-down E-Glo S [*HFN* Mar '17] and E-Glo Petite [*HFN* Feb '19] which, despite being simpler FET/tube hybrids, still show parallels in performance with the all-tube E-Glo 2. The RIAA network is similar and the response remains flat and extended from –0.3dB/20Hz to +0.1dB/20kHz, out to –2.6dB/100kHz and with the option of a second-order subsonic pole yielding a –2.5dB/20Hz to –12dB/10Hz roll-off [see Graph 1, below]. Otherwise, the E-Glo 2's separate, high voltage PSU endows it with a healthy 4.8V output (re. 1% THD) and, with THD increasing linearly with output, 7.9V is possible at 3% THD and 9.5V at a 'non hi-fi' 5% distortion. This increasing THD trend is a function of the (low-feedback) pairs of ECC83 and ECC88 triodes wrapped around the RIAA eq and driving the output where EAT specifies a <150ohm impedance. This is true from 250Hz-20kHz – at bass freqs. the source impedance surges to 2.5kohm [red, Graph 1].

This partially explains the 'sweetspot' in the presence/lower treble [see Graph 2] where THD drops from 0.2-0.3% at 100Hz and 20kHz to 0.092%/5kHz, values that, while high, are still not as high as the distortion we measure from typical MM/MCs. Three gain options are offered – a +45dB setting for MMs that's closer to +45.9dB (for a 5.05mV sensitivity) in practice, and a high +70.4dB (1.5mV, MC2) and +75.7dB (780µV, MC1) for the MC modes. The former is pure tube gain, the latter XLR/RCA MC inputs also boosted via a Lundahl step-up transformer. Noise is low for an all-tube circuit, supporting deeply impressive A-wtd S/N ratios of 80dB (MM) and 77-78dB (MC1/2). Finally, for a discussion about input headroom, see our boxout p75. **PM**



ABOVE: RIAA-corrected frequency response from 5Hz-100kHz (MM input, black trace; subsonic filter, dashed trace) versus output impedance (red trace)



ABOVE: Distortion extended frequency re. 0dBV output (5Hz-40kHz, via the MM input)

HI-FI NEWS SPECIFICATIONS

Input loading (MM/MC)	47kohm (50-840pF) / 2.5ohm-1.2kohm
Input sensitivity (re. 0dBV)	5.05mV / 303µV / 164µV
Input overload (re. 1% THD)	25mV (MM) / 1.5mV / 780µV (MC2/1)
Max. output (re. 1% THD) / **Imp.**	4.8V / 138ohm-2.49kohm
A-wtd S/N ratio (re. 0dBV)	80.2dB / 78.1dB/77.1dB (MC2/MC1)
Freq. resp. (20Hz-20kHz/100kHz)	–0.25dB to +0.08dB / –2.6dB
Distortion (20Hz-20kHz, re. 0dBV)	0.09-0.30%
Power consumption	40W
Dimensions (WHD, Pre) / **Weight**	395x86x262mm / 5.3kg (5.4kg PSU)