



# Philosopher's Stone

In the 1950s a single man had an idea for the perfect amplifier: several valves driving the loudspeaker directly without an output transformer – better linearity and control are not conceivable in any other circuit design. Only a beautiful dream? No, the OTL monos are a reality today – and turn everything upside down we thought to know about valves.

By: Andreas Günther

He must have been a little man. Lank, almost. Who, somewhere between backroom and kitchen, had an apparently ingenious idea. In July 1953 Julius Futterman left his contemplating lair and went public – with a patent application for the “Output Transformerless Power Amplifier”. A lot of people had already been meditating that the fame for having taken the vision to series maturity was due to Futterman: a valve power amplifier without an output transformer.

For one half of the adepts this was a dream, for the other half a nightmare. Without an output transformer the problem of the low damping factor is instantly off the table – and the fight against the high distortion factor won as well. Not to mention the dynamic brake which had suddenly disappeared. However, the critics were picking out the system’s weak

points and didn’t grow tired of talking about “glowing cheeks” – when a valve, due to a minimal asymmetry, died the hot heroic death. The blatant foes of the OTL circuit were even reporting about shreds of diaphragms flying around – the fearful scenario of all high-end lovers. This cliché has survived down to the present day: OTL is fine, but dangerous.

“Nonsense”, exclaims Burkhardt Schwäbe, stating the fable of the busted diaphragms is nothing but a fable. Politically spread on purpose to discredit the OTL followers. Schwäbe would not admit it, but he is kind of Julius Futterman’s artistic administrator. In the spring of 1979 the two of them had met. Or more precisely: the German engineer had pilgrimaged to the holy halls of his idol. Instead of incense, Schwäbe was welcomed by the smell of burnt lacquer. Futterman mistrusted the large transformer

manufacturers and was just about to mould his handwound transformers himself. The “Futterman Labs” in New York must have looked like a mess. With an elderly weedy man in the eye of the storm. Who died two years later, leaving behind a rather unfinished lifework – which consisted of plans, drawings, sketches and handwired valve amplifiers. Burkhardt Schwäbe subsequently nailed down what the heirs and his own wallet would allow him to do.

Without being emotional: Futterman’s chaos and Schwäbe’s pursuit of perfection gave rise to a new product. The all-round carefree OTL circuit: incredibly efficient – the damping factor sets a record, and for the frequency response of his mono blocks Schwäbe indicates a fabulous 8 to 100,000 Hertz.

This seems to be almost pretentious. Or just factually confident? Schwäbe re-

alised that his well-established and highly praised OTL Mk II stereo power amplifier could only be a preliminary result. Two times 30 watts into eight ohms are nice, but for the top-level class the OTL circuit had to mobilise more power. The monos deliver 100 watts into eight ohms per channel, the technical capabilities were already contained within the stereo amplifier. Which is why a look into the enclosure reveals a high degree of kinship. The central board is identical, but then the signal path is wired from scratch and the valve power ramped up. The monos tip the scales at 16 kilograms – the market knows of heavier fellows. But of no comparable circuit design.

Let’s follow the signal path: an EF184 serves as input valve (good old Futterman had already used it, and Schwäbe is also praising this special pentode variant as the famous sleeper) – with roots in the

prehistory of telephony and surprisingly unsusceptible to evil microphonic interference. The valve right beside it then breaks with the pure doctrine of Julius Futterman who simply couldn’t purchase the assured quality grade in the USA. Which is why he sold each of his amplifiers together with a circuit diagram plus handwritten amendments of the component values, mainly because the phase splitter valves which were available then showed too great tolerances in the batch production. But no minus point here and now – “we have found a ‘European solution’, if you will”, says Schwäbe with the pride of an interpreter who has read the annotations in the composer’s score anew. Schwäbe dismantled, analysed and refurbished an archetype of Futterman’s mono blocks named H3aa down to the tiniest screw. A collector from Hong Kong paid a sum for it which

Catalogue hint: Explicitly for their OTL amps Eternal Arts has produced a dipole loudspeaker – a 15 thousand Euro powerhouse with an ideal 16 ohm impedance.

Behind bars and glass: Eternal Arts cascades the PL519 power valves – plainly visible by helical filaments at the anodes. 400 volts are present here, locked behind silica glass for safety reasons.



both contract parties agreed to keep silence on.

However: while at it, Schwäbe found out other things for himself – that an ECC82 would sweep all adversities in Futterman's original concept out of the audiophile way. No sooner thought than done or bought resp.: in the monos from Eternal Arts the dual triode ensures stability between the positive and negative half cycles. The two little valves on the front look like ornamental plants placed before a forest of power valves. Eight in number were planted by Eternal Arts into their monos and connected picturesquely by the anodes. With Eternal Arts the path leads upward via a helical live filament carrying 400 volts. So you'd better keep your hands off. But not your eyes. Therefore Schwäbe exhibitis them – behind protective tubules of silica glass. Underneath we see the well-known EL509 type glowing, refined as the heated version and thus officially named PL519. Elderly television technicians will more likely know this valve – it used to drudge in the RF line-scanning stage and was the most strained component in a tube television. Classy workmanship ensures

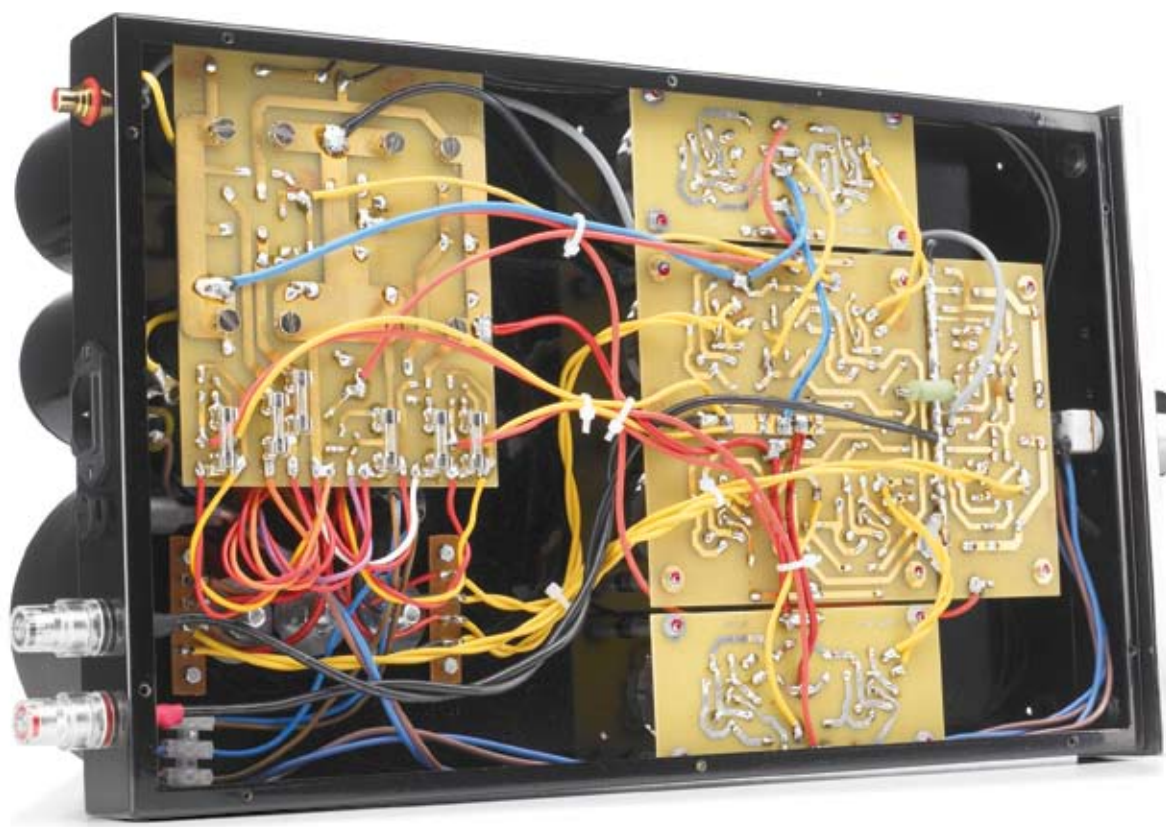
durability here – Schwäbe has therefore stored a special supply from old, trustworthy Siemens stocks.

Let's get down to the nitty-gritty, the audiophile yield. As brutally and honestly as possible we would have to say: For a journalist it comes close to torture – since these power amplifiers elude any fault-finding or restriction. The Eternal Arts monos are free from weaknesses, unassailable – no lime leaf on the back. So they're boring perfectionists? Way off the mark. David Sylvian made a miracle record in 1987 – "Secrets Of The Beehive". This is no more upper-class pop, but a symphony of sound with contemporary means, almost purely acoustic all the way, very ambitiously layered. Despite ever more CD mastering attempts, the most profound information are still in the vinyl of the first pressing. Every well-assorted LP dealer has several copies of this record on the shelf, even Amazon catalogues well-kept occasions. For little money. With great effect: In "Let The Happiness In" Sylvian is laying a bass fundament, dominated by deep horn sounds. Underneath an infra-low information is hiding, a Passacaglia in dis-



**Top: The bringer of power – Eternal Arts interconnects eight Siemens PL519 valves from German production.**

**A lot of manual work under the bottom panel – for the final the signal is fed to an RCA connection. In view of the circuit design Eternal Arts rejects a balanced XLR port as counterproductive.**



guise, swirling, sweeping, heavy. Too heavy for most loudspeakers and power amps. During the review the OTL monos fell in love with this challenge. Like it was a finger exercise – ears and midriff were literally arguing which of them should be more impressed. This had nothing to do with valve sound as it's commonly imagined, absolutely nothing. Nor with king-size solid-state circuitry. The Eternal Arts bring along the mellifluous element. The velvet mids which even upscale transistors don't always succeed in delivering. But without the obscuring cuddling factor of tendentially good-natured valves.

One new recording showed that very clearly: The London Symphony Orchestra captured Britten's "War Requiem" with verve and former Decca sound engineers on SACD. There's an intriguing live aura in the stereo perspective. Besides all their benefits the OTL monos are superb modellers, too – the room is not anatomised, this is not a relief, but a true, three-dimensional sculpture. In spite of the political nature of the subject: Who has ever experienced this art of sound, will never again yearn for music in multichannel.

Selecting the suitable loudspeakers is a difficult choice, of course. However, the Eternal Arts blocks are not picky. During our test we swapped them several times – coaxial giants, energy glutons, allrounders –, yet came always back to a dipole that Eternal Arts wants to sell as the ideal playfellow. Which doesn't only make sense for the company cash box, but also mesmerised in the test. It has the charm of a dipole, coupled with a rare 16 ohm impedance which the mono blocks can handle in a nonchalant and sovereign manner at 180 watts of nominal power. A chain of power, control – and just those gorgeous velvet mids. When in Britten's "Dies irae" the choir proceeds from a collective breathing to a menacing semi-speaking, plus the signals thrown in by the brass section soaring to a fortissimo, the cannon shots of the tympani near the rear wall of the concert hall – a magnificent musical experience which the Eternal Arts are completely absorbed in, extremely rich in information, extremely load-stable. Julius Futterman must have been a big man, despite his delicate physiognomy. <



### Test-LP

David Sylvian  
– Secrets Of  
The Beehive

A popstar is parting with his past: In 1987 David Sylvian mixed an album with plenty of acoustic-symphonic finesse. Miniatures are followed by cathedrals. Only the LP delivers the mightiest punch.



### The Author

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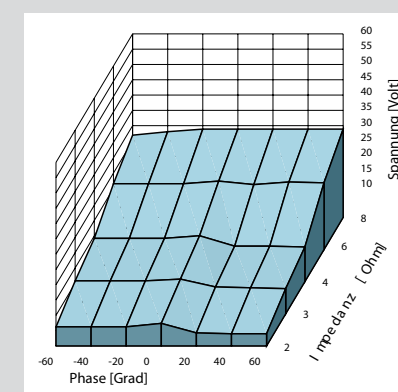
Strange: For our author the CD has lost most of its charm, despite a huge collection. A split is looming between the "old" LP and the new HD-Stream medium. By comparison, the 16 bits and 44 kHz of the CD are a relic.

## Eternal Arts OTL Monos

List price: 18.000 Euro (pair)  
Warranty period: 3 years  
Weight: 16 Kg  
Dimensions (W x H x D):  
26 x 19,5 x 48 cm  
Surfaces: black/nickel plated,  
black/gold plated  
Sales:  
Eternal Arts  
Wietzendiek 15  
D-30657 Hannover-Isernhagen  
Germany

Phone: +49 (0) 511 / 374 64 22  
Internet: [www.audioclassica.de](http://www.audioclassica.de)

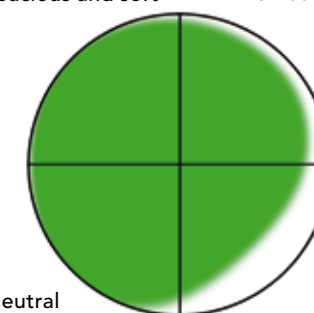
## Stability



Surprisingly high output voltage if load does not fall below 6 Ohm. Very stable against phase shifts. Slight output power decrease with 2-4 Ohm loads.

## AUDIophile character

effortlessly spacious and soft      grippingly emotional and dynamic



## AUDIophile potential



## Recommendation

The power of the Monos grows from the depth – a huge floorstanding speaker with deep bass is therefore recommended. Electrically most speakers fit.