

NAT Se1 MkII (£6762)

No, this isn't Japanese exotica – it's a world-class, single-ended triode powerhouse from Serbia! If you've had your fill of 300Bs, then here's a real he-man's amp

Review: **Ken Kessler** Lab: **Paul Miller**

Confession time: Serbia is not on my list of 'Top Countries That Produce High-End Equipment'. Before the arrival of the NAT Se1 MkII, I wouldn't have even used the words 'Serbia' and 'high end' in the same sentence, unless it was, 'I doubt that there's much high-end kit in Serbia.'

Stupid, arrogant me: NAT's Se1 MkII monoblock is nothing short of glorious, so it was my loss, not theirs.

But even before waxing lyrical about the sound quality, the fit and finish, the fast warm-up, the delicious details, I have to mention the single most important aspect of the Se1 MkII as far as my own audio prejudices are concerned. Because it features a 211 triode, I was automatically predisposed toward it, much in the same way that the presence of black olives add a point to the score of any dish I might eat. But the Se1s arrived not with reproduction 211s: they came with 211s packed in their original, circa-1945, military-issue boxes. NAT swears by new-old stock (NOS) tubes whenever possible.

A GLASS ACT

Why do I get stupid whenever I see a 211? Maybe I'm in a minority, but for me it's one of only a cluster of valves – 845s also come to mind – that realises, or even exceeds the full bull hype ascribed to 300Bs but rarely achieved. They are liquid, warm, involving, magical *and* able to deliver enough power to drive something other than a frikkin' horn. And while I'm not going stake my life on NAT's 35W rating for a monoblock with a single 211, I have always found them to be embarrassingly more robust, powerful and palpable than any 300B.

As the images show, the direct-heated 211 enjoys pride of place on the Se1 MkII. The suffix indicates that this version improves on its predecessor with a power increase thanks to a 'special driver, super

tube', a military-grade 6N30P-DR; the third valve in the Se1 is a 6N2P-EV. The layout is very much in the current fashion, with a long chassis but a narrow frontal aspect – not a problem for a monoblock which only has two controls on its 10mm-thick aluminium fascia: on/off and a rotary to select impedance and zero or low feedback. Directly behind the tubes are the output transformer and the power supply. All that's left are the sockets on the rear panel, including IEC mains input, fuse sockets, paralleled XLR and RCA phono inputs and WBT speaker terminals.

NAT designed the Se1 with a short signal path free of passive components. In NAT practice, that describes a circuit with no coupling capacitors, nor inter-stage transformers. Their transformers are hand-wound, proprietary designs, to which NAT attributes improved frequency bandwidth. Indeed, they boldly state that the frequency response is 9Hz-60kHz.

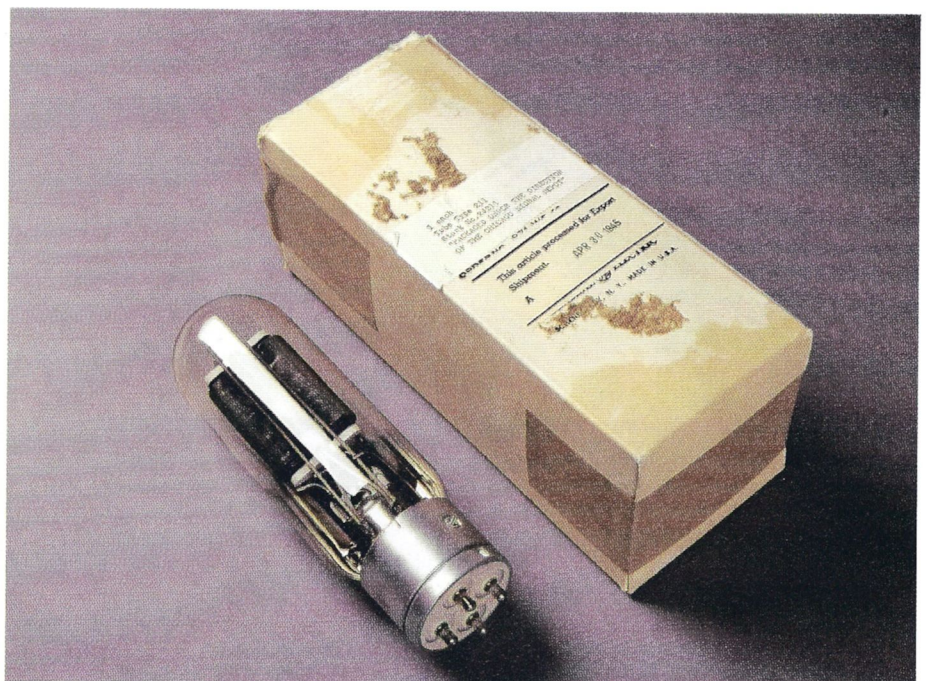
Operation is pure Class A, with zero feedback, but you can also dial in a small amount of feedback from the front panel

rotary, for certain speakers or conditions, if you so desire. The bass tightens up with a low feedback setting, at the cost of some transparency or air. It's purely a matter of taste, as it's subtle rather than coarse.

Given the rarity of NOS 211s, you want to know that the tube in your amp is being cosseted. NAT has fitted the Se1 with an automatic bias circuit, so the user needs not worry about adjustments. According to NAT, 'sound quality is totally independent against power supply instability, because all stages in the amplifier have stabilisation.'

The impedance/feedback knob addresses only 4 or 8ohm speakers; I used the latter with 15ohm LS3/5As. They do, however, recommend speakers of over 90dB (at 8ohms) sensitivity, which I found possible to ignore: the amps worked perfectly in my 12x18ft room with Sonus Faber Cremona Auditor Elipsa and Wilson Sophia 2 as well as LS3/5As. Indeed, they positively adored the latter.

Although hefty and chunky at 25kg apiece, and needing floor space of 300x520mm – they're also relatively tall



RIGHT: The heart of the amp – a direct-heated 211 triode tube from General Electric and 'packaged under the direction of the Chicago Signal Depot' on April 30th, 1945



LEFT: The lone rotary helps fine-tune the sound for matching feedback to a specific speaker; minor benefits also occur from disc-to-disc

digging out some Cajun material to hear if my suspicions were correct: the NAT Se1 MkIIs are almost embarrassingly free of extreme treble issues. Indeed, you'll wonder how they manage to remove so much of the sibilance from bright recordings without robbing the music of other high-frequency information.

BLINDING BOLDNESS

Is the treble rolled off? If so, it certainly doesn't sound that way. With the pedal steel on the new Poco live album, recorded for a small audience at CBS studios back in 1971, the metallic chime that distinguishes that instrument from all other string-driven-things rang through with blinding boldness and clarity. Utterly absent was any tube haze, despite the 211s in use being made around the same time the

Second World War was ending.

Poco, too, possessed a percussionist in George Grantham with imagination and power. His apt use of woodblock came through with exactly the sound I remember as a kid, standing mere yards away from my brother as he practiced. It had the right attack, the correct, authentic overtones.

Anyone who attributes lifelike sound to SETs, especially if a short, uncluttered signal path is part of the recipe, will glow just like the 211 doing all the hard work. This amp sings in the truest sense.

'Those who attribute lifelike sound to SETs, will glow like the 211'

Not only my preference, but also one of SETs' greatest virtues, is the female voice. I rarely listen to Rickie Lee Jones because her music makes my skin crawl, but I have to admit her voice is interesting, a mix of textures as far removed from Linda Ronstadt as one could get, while not emulating the soul diva raunchability available from Aretha to Alicia to Dusty to Bonnie. Feeling masochistic, I dug out 'Easy Money', that most egregious of audiophile clichés, only to discover that the NAT rendered it involving on a number of unexpected levels.

It juggled richness and detail in equal measure, the iconoclastic percussive touches (tambourine?) enjoying the same in-the-room clarity and chiming as Poco's pedal steel. Her voice slithered – maybe it's her reptilian vocals that suggest she could be a cast member of *V* – with the flow ☞

at 260mm – the Se1 MkIIs were up and running in record time after completing the brief 'soft start' procedure to prevent thumps – and I mean record time. It was as if they needed no warm-up time to reach their optimal performance. The company states that every unit enjoys a 100-hour burn-in at the factory, which also accounted for the speed at which I felt the amps were ready for assessment.

YTER cables were used throughout. Marantz's CD12/DA12 CD player fed the Audio Research Ref 5 preamplifier, the latter driving the NATs with XLR cables even though the amps are not balanced: the XLRs are there in what the company calls 'pseudo-balanced.'

READY, SET, GO...

Aaah, SETs! My greatest love-hate in all of audio, though horns come close. Anyone can hear why 300B single-ended triodes

seduce so many listeners: they're the comfort food, the guilty pleasure of high-end audio, like an occasional Big Mac. But *haute cuisine* they ain't, for they are far too flawed to be taken seriously: power issues, soft frequency extremes, bass sorely in need of audio Viagra. On the upside, they caress vocals, they can on occasion image like a David Lean production, they rarely induce listener fatigue (they merely put you to sleep) and they allow their owners to be insufferably smug.

What the NATs encourage you to listen to is not far removed from what appeals to SET users in general. They love strings, never delivering a violin screech unless that's what the musician played. There's a silkiness to the top end that had me

NAT'S TUBE FIRSTS

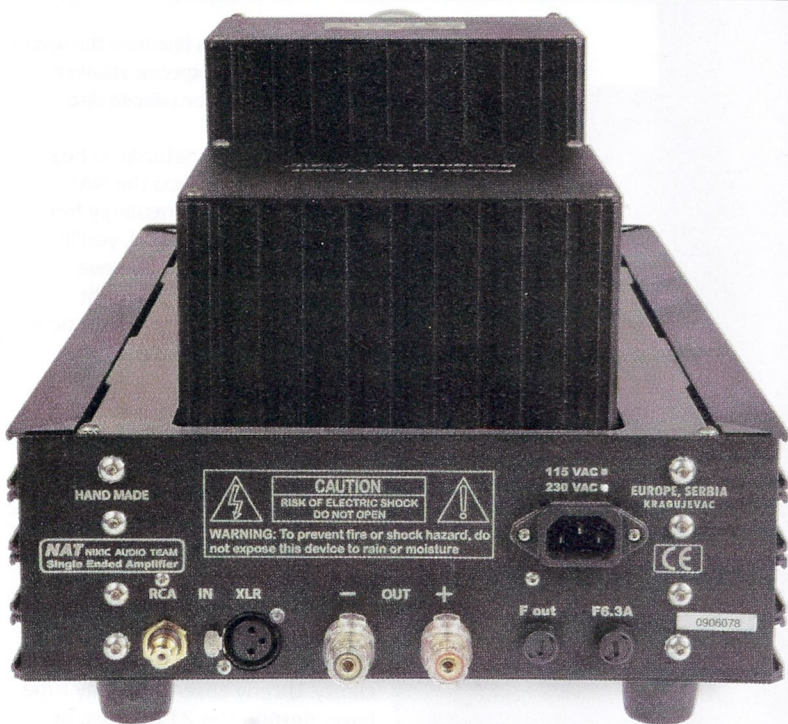
However crass this sounds, the NAT is a shocker because it comes from Serbia. With all due respect to any Serbs reading this, it's not like the country has an impressive track-record for high-end valve amps. Which makes the Se1 MkII deceptive: its fit and finish are the antithesis of the other newbies, the still-learning Chinese. If anything, the workmanship approaches that of the Japanese.

NAT's focus is on valve pre- and power amps, the company preferring triodes, short signal paths, zero or low feedback, NOS tubes and the single-ended topology. And it's not slavish copiers of existing circuits. It claims a number of tube firsts, including a direct-coupled, zero-feedback line-stage; a battery-powered, zero-feedback phono stage; a 160W, direct-heated triode, anode-coupled, zero-feedback, single-ended power amp, etc. I stand corrected.

VALVE AMPLIFIER

LAB REPORT

NAT Se1 MkII (£6762)



ABOVE: Both RCA and XLR inputs are single-ended while the single 4mm speaker output posts are coupled to both 8ohm and 4ohm transformer taps via a front switch

that also renders bass either fluid (good) or static (bad). This is one lush, liquid-sounding amplifier, without giving the impression that it's also lacking control.

GET THE FUNK OUT

As a rule, I try not to waste my time nor yours when reviewing SETs by feeding them funk. From my experience 300B-equipped SETs are categorically the least capable amplifiers I can imagine for addressing classic era Temptations, early Hall & Oates, any Sam & Dave. There's no better track for embarrassing 2W amplifiers than Mel & Tim's 'Too Much Wheeling And Dealing', which has rolling Stax bass, sassy southern horns and duelling vocals. Oh, the punch! The attack! Damn, is this amp fast and tight and controlled. And yet, there's never any transistor-like over-etching, no glassiness, no harshness. They climb without unnecessary drama, stop when the note ends, or fade with the requisite decay. They make even old CDs aurally palatable.

It almost goes without saying that the spatial concerns are dispatched almost with insouciance. Using the Toshiba-EMI 1983 CD of the Beatles' *Abbey Road*, the imaging was to-the-millimetre precise, the layering of the more

dense tracks delineated so that you could ascribe front-to-back depth to what you know were recordings built up in the studio. And that bass on 'I Want You (She's So Heavy)' – it slithered across the floor like the fog in a grindhouse horror flick: palpable yet elusive, enveloping yet opaque.

But then you experience this amplifier's majesty: 'She Came In Through The Bathroom Window' taunts any system to rise to the occasion. Power, grandeur, clarity, all in a musical fragment. The NAT delivers it to the listener on a plate. Meissen, set in front of you by a white-gloved waiter. ☺

HI-FI NEWS VERDICT

For me, a no-brainer: the 211 has long been my fave tube: it's one of the few that, when used as a single-ended triode, possesses real guts. It is the 300B's sexy, classy, funky evil twin, Angelina Jolie instead of Barbara Cartland. But the best surprise – and this sounds terrible if you're politically correct – is that such a staggering amplifier comes from a country with no tradition for high-end gear. I love it.

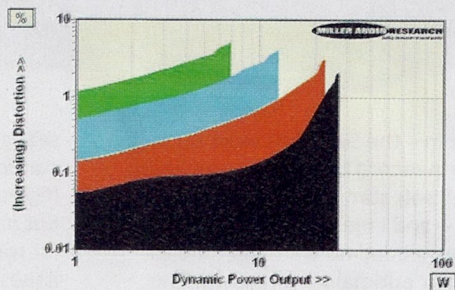
Sound Quality: 88%



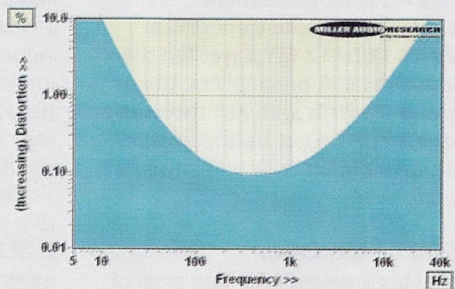
Sixty-five years since this direct-heated 211 triode left the General Electric depot it is realising a new and surprisingly impressive lease of life in this (genuinely Class A) single-ended power amp from NAT. Tested in 'low feedback' in preference to 'zero feedback' mode, the Se1 MkII fully stabilises within just one minute of switch-on. There's no protracted warm-up period as the Se1 MkII achieves 0.096% distortion at 1kHz/5W/8ohm in under 60 seconds, a figure maintained to within 0.001% over the subsequent two hour lab test period.

Power output is not the 35W claimed by NAT (with no reference to frequency, load or distortion I might add) but rather closer to 23W/8ohm at 1% THD and 27W/8ohm at 2% THD. Via the 4ohm tap it achieves 18W/4ohm at 2% THD while under dynamic conditions it's possible to realise 27W, 22W (3% THD), 12.5W (4% THD) and 7W (5% THD) into 8, 4, 2 and 1ohm loads [see Graph 1, below]. Sensitive, easy-to-drive speakers are a must even if the very linear 1.3ohm output impedance is quite low by valve standards. The A-wtd S/N ratio of 87.9dB (re. 0dBW) is respectable just as the response is sufficiently flat and extended (-0.2dB at 20Hz to -0.8dB at 20kHz). The latter will vary somewhat with speaker load impedance, however.

Distortion increases gently with output (0.056% at 1W to 0.55% at 20W) and at very low bass frequencies (1.7%/20Hz to 65%/5Hz at 5W/8ohm) while the limited feedback also pushes it up at the top end (4.5%/20kHz – see Graph 2, below). Readers are invited to view a comprehensive QC Suite test report for the NAT Se1 MkII monoblock power amps by navigating to www.hifinews.co.uk and clicking on the red 'download' button. PM



ABOVE: Dynamic power output versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (blue) and 1ohm (green) speaker loads.



ABOVE: Distortion vs. frequency from 5Hz to 40kHz (5W/8ohm). Distortion still increases at the frequency extremes in 'low feedback' mode

HI-FI NEWS SPECIFICATIONS

Power output (<2% THD, 8/4ohm)	27W / 18W
Dynamic power (<5% THD, 8/4/2/1ohm)	27W / 22W / 12.5W / 7W
Output impedance (20Hz-20kHz)	1.30-1.01ohm
Frequency response (20Hz-100kHz)	-0.2dB to -14.2dB
Input sensitivity (for 0dBW/20W)	253mV / 1130mV
A-wtd S/N ratio (re. 0dBW/20W)	87.9dB / 100.9dB
Distortion (20Hz-20kHz re. 5W)	0.087-4.5%
Power consumption (Idle/Rated o/p)	195W/195W (each)
Dimensions (WHD)	150x260x520mm (each)