Tube integrated/power amplifier. Rated at 35W/8ohm
Made by: A&M Ltd, Takatsuki City, Osaka, Japan
Supplied by: Select Audio, Cumbria
Telephone: 01900 601954
Web: http://airtight-anm.com; www.selectaudio.co.uk
Price: £8295

AirTight ATM-1e

How do you improve on a classic valve amp? Japan's AirTight has been making its ATM-1 stereo power amplifier since 1986, and it's now been revised for its third generation
Review: **Ken Kessler** Lab: **Paul Miller**

A wish fulfilled? I have already admitted in an 'Off The Leash' column [*HFN* May '24] that, among the products I've never owned, I 'lusted after' an AirTight amplifier. So this review was accompanied by more than the usual sense of expectation, this legendary amplifier already relaunched last year as the 2024 Edition, but now officially called the ATM-1e (£8295). This is the third incarnation of the artisanal Japanese brand's cornerstone stereo 'power amp', though as it's equipped with separate left-and-right gain controls, it's best described as a very minimalist integrated model.

All ATM-1 versions [see boxout, p71] have possessed this crucial feature, lifting them above the level of a basic power amplifier and allowing the purist to use a fixed output source without an intermediate preamplifier. Also, while the new ATM-1e might have lost the option of running two signal inputs, that's not necessarily a deal-breaker even if the buyer plans to eschew a separate, active preamplifier. As a workaround for multiple sources in such situations, I maintain a couple of Akai DS-5 passive tape deck selectors which up the input count by four. More appropriately for this review, I also fired up the now-legendary AirTight ATL-10A Line Controller, the company's passive preamp with remote volume control. Note to AirTight: please bring it back!

TUBE TUNING

One other feature separates the ATM-1e from many basic stereo amplifiers, and that's the fine-tune tube bias facility. A rotary on the front panel selects each EL34, the 'off' position being the operational mode for playback, and each tube is accompanied by a set screw that the user adjusts while monitoring the new 'edgewise' meter. The correct operating area is clearly marked, and you simply dial in the bias until the needle rests within it.

Yutaka Miura, AirTight's MD, told *HFN* that while the new model 'has a visual appearance reminiscent of the original ATM-1', it's a complete redesign aiming for 'the best combination of circuit, construction, parts selection, and sonic performance. The ATM-1 and ATM-1s were developed by Mr. Ishiguro and my father, Atsushi Miura [AirTight's co-founders] while the ATM-1e was developed by Kiyoshi Hamada, Yoshihiro Hayashiguchi and myself'. For the new amp Tamura output transformers were specified and are terminated on the rear in two sets of 4mm cable binding posts, labelled 'High' and 'Low' for nominal 8ohm and 4ohm loads, respectively.

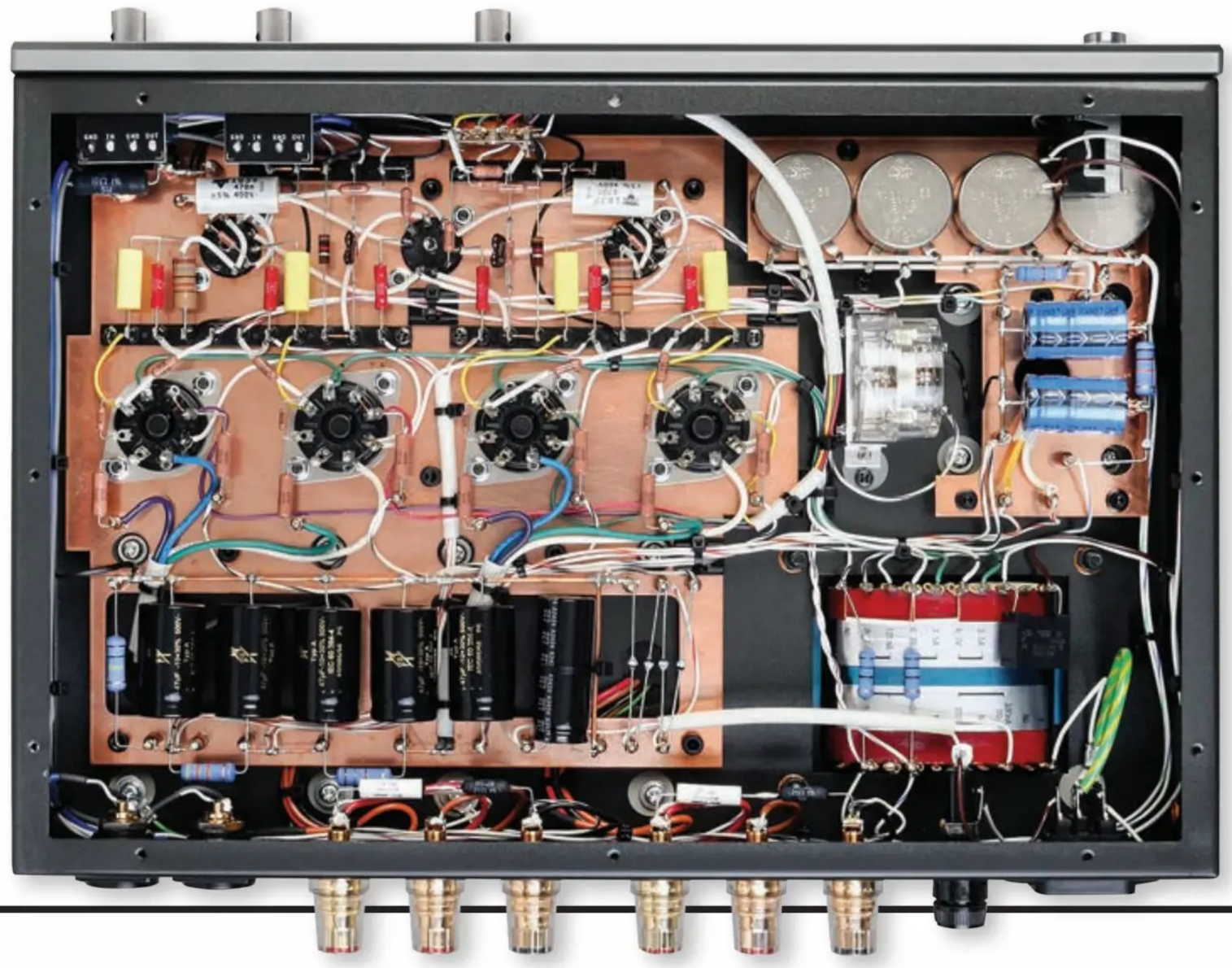
> 'Its 35W rating is arguably a "sweet spot" for EL34 amps'

When upgrading the ATM-1s to become the ATM-1e, the team pursued an improved signal-to-noise ratio, wider bandwidth, a higher damping factor, easier-to-adjust tube bias, and greater reliability. But it remains a classic Leak-Mullard type push-pull/ultralinear amplifier and inspired, in part, by the original Marantz Model 9. It's also a reminder that the EL34 was once the industry's go-to valve, before the rash of KT90, '100, '120, '150s, *etc*, took over.

GENTLE GIANT

Unsurprisingly, the ATM-1e shares the same 2x35W power rating from its pairs of EL34s as many classic tube amps – arguably the 'sweet spot' for valve amplifiers. However, because clipping is gentle rather than abrupt, the latter a characteristic of many solid-state amps, the ATM-1e sounds louder than you'd expect, as a blast through my Wilson Audio The WATT/Puppys [*HFN* Sep '24] clearly demonstrated.

Although many amplifiers were fitted with EL34s in the past, Miura-san says there are 'surprisingly few' high-end products currently using them. 'We think this has something to do with the fact that EL34 ⇨



RIGHT: Fine bias adjustment for the EL34 tubes [top right], and metering [mid right], seen alongside copper-plated boards with meticulous point-to-point wiring. L/R 'attenuators' are actually high-quality ALPs volume pots [top left]


'Each EL34 is accompanied by a set screw, with bias monitored on an "edgewise" meter'
AIR TIGHT
PLATINUM SELECTION
EL34
Made in Russia
V3 EL34
V4 EL34
V7 6CG7/6FQ7
V1
V2
V3
IP ADJUSTMENT

push-pull amplifiers were once so common and thought to be "nothing special" for a while. We feel that the EL34 has excellent characteristics that build a solid sound structure with "penetrating power".'

This affinity for the EL34 is the basis of the development concept for the ATM-1e as 'redefining the EL34 push-pull amplifier in the AirTight style', a process begun in 2015. Says Miura-san, 'The world of audio has changed significantly since 2006 when the ATM-1s was launched. AirTight's traditional policy was "enjoying music" so we felt the need to redefine the EL34 as we aimed for a wide soundfield and a full-bodied, dignified sound with the new edition'.

Exquisite construction and finish are qualities that render me enamoured of AirTight. The chassis structure here is a monocoque type, while the power supply section features substantial choke regulation. The circuit board is fashioned on a copper plate [see p68], and the company hand-builds each amplifier, as I witnessed when visiting its facility in Osaka [*HFN* Aug '13]. Although the ATM-1e is sufficiently compact at 365x225x305mm (whd), it still weighs a chunky 21.5kg, reflecting the substantial nature of the unit – even if that sounds rather like tyre-kicking.

> 'Clearly, the ATM-1e is no exercise in mere nostalgia'

TIGHTEN UP

So self-explanatory is the ATM-1e that you can have it up and running without ever looking at the owner's manual. Aside from adjusting the two volume controls (which also allow you to fine-tune the balance if needed), and periodically checking the bias, there's nothing else to do other than connect speakers to the multi-way binding posts and insert the signal cables into the RCA sockets. Note that AirTight will change the phono sockets to (unbalanced) XLRs and the 8ohm speaker terminals can be configured for 16ohm loudspeaker loads.

There is one caveat to remember, also noted by PM: while the ATM-1e warms up relatively quickly and has no extended switch-on mute period *à la* Audio Research and others, it needs a solid half-hour to really sing. I can't say my ears are so sensitive as to have detected the increase in level of 0.3dB measured by PM [see Lab Report, p73], but I could hear improvements in every parameter, the amplifier 'opening up' as it settled down. I seem to recall this as a typical characteristic of the EL34 tube, so AirTight is blameless of making you wait.

OLD MEETS NEW

Having recently spent time with a few vintage amps employing EL34s, purely by coincidence, I was primed for a blast from the past rather than a sonic affinity with amps running beefier KT120s or KT150s. Would this wonderful amp, its forebear born at the exact midpoint in hi-fi history, ⇢

ABOVE: Pairs of electro-harmonix EL34s, in UL mode, are fronted by a 12AT7 triode and two 6CG7 tubes as phase-splitters. AC transformer [back right] is joined by choke PSU regulation [front right] with Tamura speaker-coupling transformers [back left]. The separate L/R 'Attenuators' are labelled 'Max' for full volume

AIRTIGHTER

For the continuing evolution of the 39-year-old ATM-1, this amplifier series undergoes a rebirth roughly every 20 years. The original ATM-1 [*HFN* Aug '89] derived its output from four 6CA7 beam power pentode tubes and provided two inputs, the second via a pair of phono sockets on the front panel. In 2006, it was modified heavily, renamed the ATM-1s and the output tubes were replaced with EL34s. These also power the latest version, the ATM-1e, which loses the front panel inputs of the previous editions.

While both of the later iterations of the ATM-1 feature circuit refinements, the primary area where the models have evolved is in their valve complement – not just the output tubes. In addition to moving to EL34s, the ATM-1s 'middle model' also changed the original input valve lineup which included a 12AX7, two 12AU7s and two 5AR4s for rectification. For the ATM-1s, AirTight changed the 5AR4s for solid-state rectification, which the current ATM-1e retains. The latter swaps the ATM-1s' 12AX7 and the pair of 12AU7s for a 12AT7 and two 6CG7s.

remind me of the Dynaco Stereo 70 or perhaps my beloved Radfords? The answer is 'Yes'… and 'No', because AirTight has delivered what it promised, which is a method of respecting the classic sound of the 'Golden Age' while also managing the expectations of today.

Despite starting out with The Beatles' remastered mono LPs for a whiff of the era when EL34s ruled, I was soon enlightened by the realisation that this was no exercise in mere nostalgia. Yes, the sound 'bloomed' in a way necessary to reconstruct the sensation when mono Beatles LPs were first played in 1963-1968 (at least, for those with hi-fi systems and not Dansettes). But this discernible 'warmth' is no play on words *vis-à-vis* valves. The ATM-1e sounds positively *human*.

On 'You've Got To Hide Your Love Away' from *Help* [Parlophone PMC1255], John Lennon's voice emerged richer than what might be expected of, say, hyper-clinical solid-state amps. It was utterly grain-free yet equally the vocals were so convincingly textured that it almost sounded like a different – and indeed better – recording or pressing than what I was conditioned to hear after a lifetime of owning an original LP.

BASSEY BASS

In contrast to Lennon's voice, the absolute clarity of Shirley Bassey's pipes was rendered just as vividly, even though there were no laryngeal textures *per se* to reproduce. What distracted me from Bassey's singing, however, were the massive orchestral arrangements. The remastered James Bond theme *Diamonds Are Forever* in the *Dame Shirley Bassey – The Singer* CD set [Strawberry Records QCR3JAM31] showed how deep and wide was the soundstage Miura-san and his team had hoped to construct.

Within this soundstage, and for that matter within the mono

ABOVE: Single stereo (RCA) inputs are joined by 4mm speaker terminals with 8ohm (High) and 4ohm (Low) taps

central image of The Beatles' tracks, were low-level details retrieved so comprehensively and with such easy discernibility that I could have sworn I was hearing nuances which had previously escaped me. This attested to a transparency which wouldn't shame a high-power solid-state amplifier of impeccable pedigree. As valve-like as the ATM-1e is in its virtues, it does not pander to the peccadillos of the past, endearing though they are to tube devotees.

BANG THE DRUM

Ultimately, what convinced me that the AirTight ATM-1e is more than the sum of its parts was monumental bass from an all-but-forgotten demo-worthy CD, Clannad's 1989 compilation *Pastpresent* [BMG PD74074]. Naturally, the gorgeous vocals showed off the ATM-1e's super-sweet, sibilance-free top-end. But I was not prepared for the room-filling mass of the opening of 'White Fool', almost Kodō-like in its grandeur. Then I remembered: AirTight is Japanese. Who better to deal with the drums of giants?

HI-FI NEWS VERDICT

AirTight's ATM-1e ticks every box defining a stereo tube power amplifier of true usability and practicality, with a price reflected in superb perceived value. If there truly is a category for 'entry-level high-end', this fits the bill. It's an artisanal amp offering exceptional musicality, more than sufficient power and – if this matters to you as it does to me – shameless pride of ownership. Pride may be a sin, but if so, then sin on, sinners.

Sound Quality: 89%

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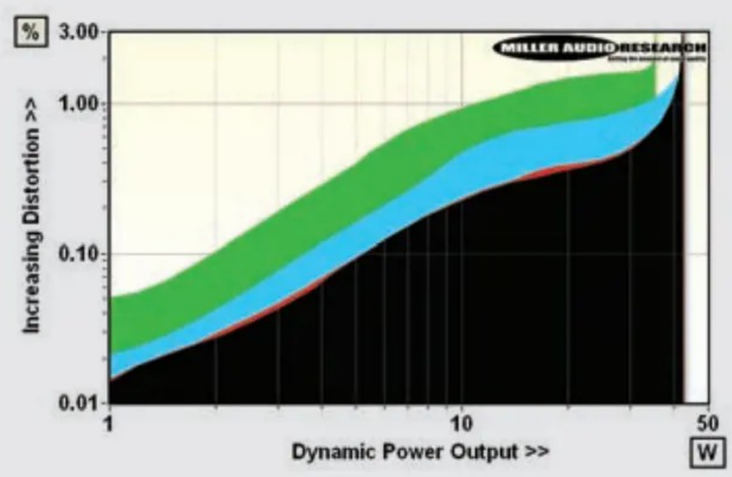
LAB REPORT

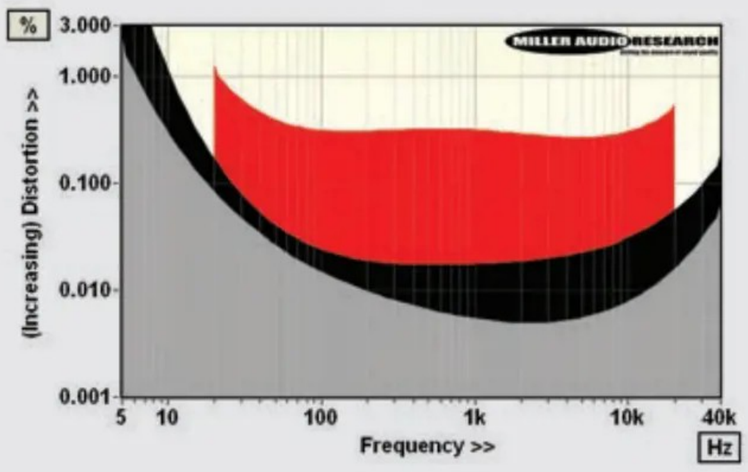
AIRTIGHT ATM-1E

The superb symmetry of the ATM-1e's left and right channels is an example of what can be achieved with genuinely *precise* tube matching coupled with the highest quality output transformers. Many 'Far East' amps show poor matching, but the ATM-1e offers a full 65dB volume range to within ±0.5dB (2nd dot from the 'Min' end of the 'Attenuator' scale), stereo separation that's >80dB (re. 20Hz-20kHz), and distortion that reduces from 1.3%/20Hz to 0.25%/1kHz (re. 10W/8ohm) on *both* channels [see Graph 2]. Noise, too, is very low, promoting a wide 88dB A-wtd S/N ratio (re. 0dBW). Naturally, distortion increases progressively with output from 0.02%/1W to 0.25%/10W and then 0.5% at the rated 35W (all re. 1kHz/8ohm from the 'High' tap). So the ATM-1e meets its spec. at a 'proper hi-fi' 1% THD limit, rather than its rated 5%, squeezing out that little bit more under dynamic conditions. Relaxing the THD limit to 3%, the ATM-1e delivers an impressively consistent 44W ('High' tap), 43W ('Low' tap), 43W and 36W into 8, 4, 2 and 1ohm loads, respectively [Graph 1].

While the amplifier 'warms up' swiftly – distortion is almost solely 2nd/3rd harmonic and decreases from 0.025% at switch on to 0.018% after 5 minutes and 0.017% after 30 minutes (all re. 1W/8ohm) – there is a gentle increase in *gain* from 29.4dB to 29.7dB over the first hour of use. If you are super-sensitive, and all else being equal, the ATM-1e/speaker pairing will become ~0.3dB louder over this period... Otherwise, the response is good to –0.3dB/20Hz, –0.25dB/20kHz and –3.5dB/100kHz via both 'High' and 'Low' taps into 8ohm and 4ohm while the 1.2-1.6ohm output impedance is lower than with most tube amps, ensuring a reduced variation in response with different speaker loads. **PM**



ABOVE: Dynamic power output versus distortion into 8ohm (black, 'High' tap), 4ohm (red, 'Low' tap), 2ohm (blue, 'Low' tap) and 1ohm (green, 'Low' tap) loads



ABOVE: Distortion versus frequency versus power output (0.1W/8ohm, grey; 1W, black; 10W, red)

HI-FI NEWS SPECIFICATIONS

Power output (<1% THD, 8/4ohm)	37W / 35W
Dynamic power (<3% THD, 8/4/2/1ohm)	44W / 43W / 43W / 36W
Output imp. (20Hz–20kHz/100kHz)	1.55-1.17ohm / 1.17ohm
Freq. resp. (20Hz–20kHz/100kHz)	–0.3dB to –0.25dB/–3.5dB
Input sensitivity (for 0dBW/35W)	93mV / 650mV
A-wtd S/N ratio (re. 0dBW/35W)	88.1dB / 103.4dB
Distortion (20Hz-20kHz, 10W/8ohm)	1.3-0.25%
Power consumption (Idle/Rated o/p)	145W / 205W
Dimensions (WHD) / **Weight** (each)	365x225x305mm / 21.5kg