

3009 SERIES • TONEARM • SME • UK

# SME 3009



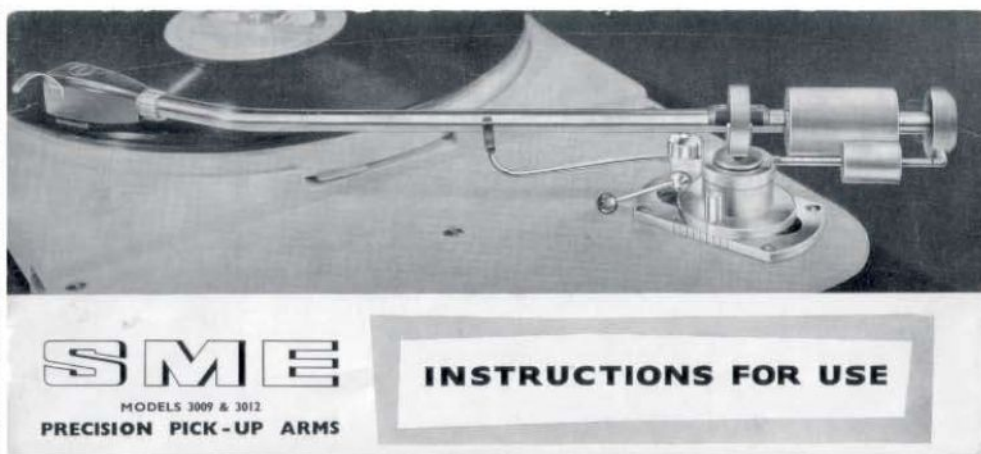
Not just a world-wide best seller but the best of its type too. **Ken Kessler** tells the story behind the development of the SME 3009 tonearm, still cherished to this day in all its variants with hundreds of thousands remaining in regular use

Sales figures are curious things. If sheer quantity is your measure of success, then the McDonald's hamburger is the world's greatest food, *The Sun* is the UK's best newspaper and you'd rather own a BiC pen than a Montegrappa. Flip the coin, and you suddenly seem arrogant, if you equate popularity with a lowering of quality.

But every once in a while, a worldwide best-seller just may be the best of its type, too.

Such thinking makes the SME 3009 and its variants a bit of a conundrum, for the sales of that tonearm in its three mildly-modified forms – aka Series I, II and II Improved plus the elongated 3012 and a handful of versions with gilded parts – constitutes not only the best selling tonearm in history: it is probably the only high-end component ever to pass the million-mark. Yet its quality was hardly of the lowest-common-denominator.

Alastair Robertson-Aikman – or AR-A, as he was known – created in the original SME tonearm a



**ABOVE:** Original manual for the 3009 Series I. The arm, which appeared in 1959, not only featured a method of mounting that was adopted industry wide but boosted the popularity of the detachable Ortofon headshell used. It soon became known as the SME headshell

**LEFT:** Alastair Robertson-Aikman pictured in the 1980s. He founded SME, originally called The Scale Model Equipment Company, in 1946 to produce scale models and parts for the model engineering trade

component that attained the sort of sales figures probably not even met by iPod docks. Compounding the selling of a tonearm, and therefore making its achievements even more remarkable, is the knowledge that separate arms are only purchased by audiophiles, not casual buyers. At best, the latter would have acquired one without even knowing it, having visited a hi-fi emporium, asked for a turntable, and been sold a Garrard 401 or a Thorens TD 124 with an SME 3009 already in place.

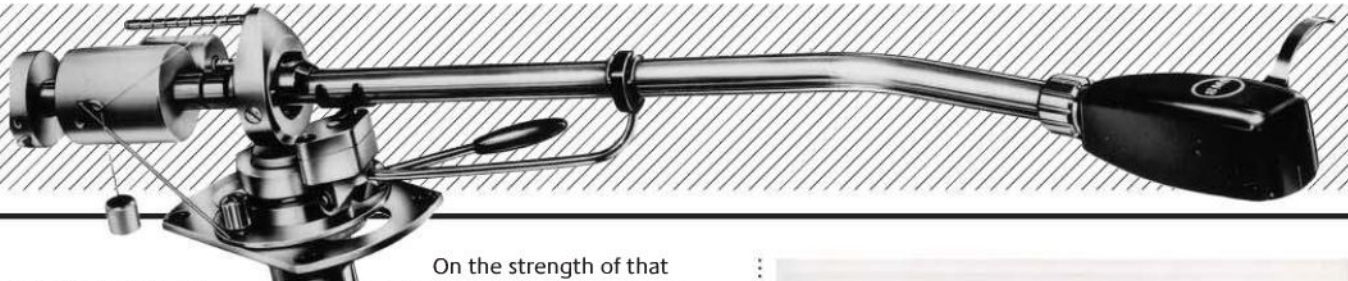
## TWO MILESTONES

Early audiophiles, though, were a hardy, self-sufficient and adventurous lot, who wouldn't have considered buying a 'turnkey' record deck already fitted with arm and cartridge. Hey, half the fun was choosing your own components. What SME provided for the hi-fi industry and the customers were two standards that worked for decades, thus garnering two 'milestone' achievements with a single product. The first was, in creating a hugely popular tonearm in its own right, devising a genius

of a template for arm-mounting that other manufacturers would follow. The so-called 'SME cut-out' maintained its supremacy until the egos of others demanded that they not support a standard set by a rival – an act as foolhardy as, say, a digital camera or computer peripheral manufacturer not using USB or mini-USB. From 1961 onwards, the tonearm cut-out that served as the default for countless manufacturers, from Garrard to Thorens to Technics, was the SME.

If the cut-out alone was noteworthy, for it signified that the first-ever product from the company down in Steyning was a standards-maker, the second milestone was SME also popularising Ortofon's detachable headshell fitting so successfully that it became known as the SME headshell – though AR-A always credited the Danes for the design. The 3009's collateral effect, then, was to tonearms what the Mini was to small cars. It revolutionised the separate tonearm.

SME was founded in 1946 in a field far removed from audio, as The Scale Model Equipment Company



Limited, producing scale models and parts for the model engineering trade and hobbyists. To this day, model car enthusiasts – who wouldn't know hi-fi from fly-fishing – still think solely of model cars when they hear the three letters 'S', 'M', and 'E'. The desirability of those kits, tricky to build but innovative in their day, has increased to eye-watering levels, with commensurate prices.

### A THOUSAND PIECES

It wasn't only scale models that occupied SME prior to music lover AR-A's first foray into hi-fi hardware production. SME also undertook contract work in other, more serious fields. In the 1950s, SME gradually moved away from model making to critical precision engineering, including the production of parts for aircraft instruments, business machines and other devices, which in 2010 also includes parts for medical and Formula 1 clients.

Alastair told *HFN* that, 'the Series I precision pick-up arm was envisaged in the Autumn of 1958.' He had a working prototype available by the Spring of 1959. AR-A showed it to the then-Senior Technical Editor of the *Gramophone Magazine*, Percy Wilson, one of the most influential figures in audio. Asked what he thought of its commercial possibilities, Wilson replied that he and one or two of his friends would like to own one. Crucially, he told AR-A that, 'perhaps an annual turnover of as many as a thousand pieces might be possible.'

On the strength of that support, the 3009 became a viable commercial product.

In August 1961, SME opened a new factory in Mill Road, Steyning, Sussex, while the company's name was changed to SME Limited. After re-tooling the three-year-old Series I, it was replaced with the Series II in 1962. Instead of a steel arm tube, the Series II used a polished, bright-anodised aluminium arm tube, 9.5mm diameter with a wall thickness of 0.56mm. A fibrous lining assists the dissipation of acoustic information. Moreover, SME was able to move from machining every part to using techniques such as pressure die-casting. The Series II stayed in production for 10 years. 'And for much of the time,' AR-A remembers, 'there was a backlog of more than two thousand units.'

**'The model 3009 Series II Improved is considered the definitive version'**

In 1973, SME met the demand for an arm of lower mass than the Series II with the Series II Improved, which also offered for the first time a fixed headshell version. (Note: There was also a short-lived, completely different arm called the Series III, an ultra-low mass type aimed at users of ADCs, Shures and other cartridges aspiring to sub-1g tracking.)

All of the same basic family ran for the next 30 years. By 1982, with the sudden burst in popularity of the moving-coil cartridge with lower compliances and higher tracking forces, AR-A recalls that, 'cartridge developments precluded a "one size fits all" philosophy. For the next four years, we developed the Series V, an arm of extraordinarily structural

integrity dictated to the needs of medium and low compliance moving coils.'

### ALL IN HOUSE

Consistent from the very first model was SME's insistence on zero-compromise standards of manufacture, finish and construction. Thus, all parts production was undertaken 'in house', including screws and tools for the arms' installation and set-up. SME's capabilities included all design work and tool-making, through every stage of production, including machining, pressure die-casting, injection moulding, metal finishing, electroplating, anodising and many other processes. One world-class watch-maker, upon seeing the factory and acquiring his own 3009 Series II Improved, was moved to describe SME's capabilities as 'the equal of anything made in Switzerland.' And yet this expertise was available to an SME 3009 owner for a price less than the cost of the steel bracelet on a Rolex.

But the cost difference between an SME Series II Improved and Series V of the late 1980s kept the



**TOP:** Series II arm appeared in 1962 and featured a polished, bright-anodised aluminium arm tube with a fibrous lining

**ABOVE RIGHT:** Nearly forgotten but now highly collectible, the SME 2000 plinth, made to accept the Garrard 401, Thorens TD 125 as seen here, and other turntables

**BELOW LEFT:** Shure leaflet from the US advertising the 3009/1 and 3009/2 variants, which measured 9in and 12in respectively

**BELOW RIGHT:** Model 3012 Series II in its original box

**"the best pick-up arm in the world"**

Made by dedicated craftsmen working with extraordinarily close tolerances and standards — provides features unattainable in any other tone arm. Its "secret" (if it has one) is care in manufacturing and testing and utterly accurate adjustments for every critical factor in tracking. It is not inexpensive — perfection never is. It is, however, worth every penny to the audiophile who wants a pick-up arm capable of realizing the full potential of cartridge and record.

Among its features are virtually frictionless knife-edge bearings; unique weight system that statically balances arm longitudinally AND laterally; tracking force adjustments (from 1/2 to 5 grams) as accurate as a low stylus pressure gauge; "anti-skating" bias adjuster; hydraulically operated "slow-motion" set-down; sliding base for overhang adjustment; height adjustment, etc., etc.

Model 3009, for 12" records, Audiophile Net	£69.50
Model 3012, for 10" records, Audiophile Net	99.50
Model 3014, Plug In Head for Shure-SME Tone Arm, Audiophile Net	5.00

**SHURE SME SERIES 2**  
INDEPENDENT PICK-UP ARM



## AUDIO MILESTONES

former in production for its value as an entry-level product. The 3009 ceased production in 2003. For 2004, SME, '...filled a gap at the bottom of our range with the new M2 Series arms, drawing on the most worthwhile design features and offering what we believe are unbeatable value and performance for money.'

### THE 3009/3012 SERIES

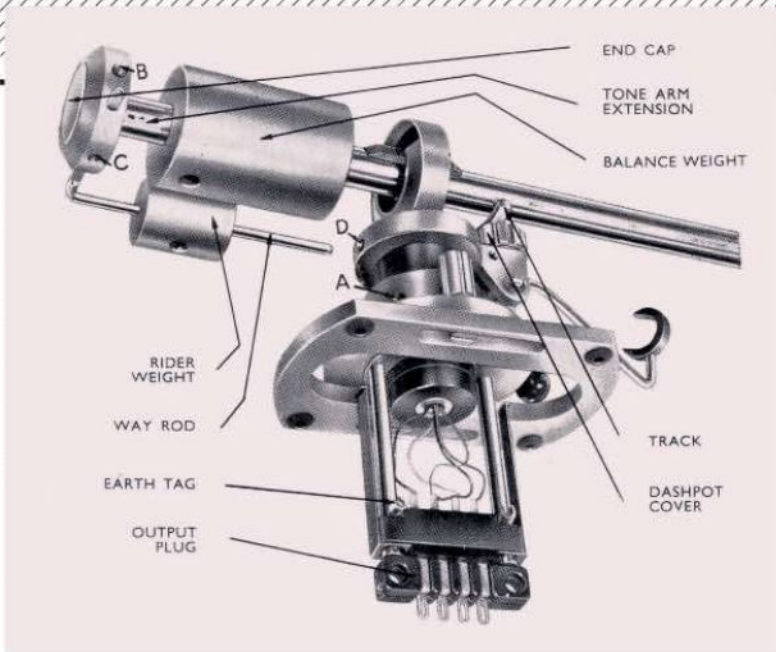
Dubbed from the beginning as the 3009 for 9in versions and 3012 for the 12in version, the arm is identified in 'collectors' shorthand' as 3009/1 or 'Series I' and 3009/2 or 'Series II' to indicate which model series is which. The final version was the '3009 Series II Improved', which lasted into the 21st century.

As you might expect of any product with such longevity, it has developed cults that are either 'pro' or 'anti' certain variations, as well as a few mysteries.

Fixed headshell or removable? 9in or – for the Japanese – 10in length from pivot to stylus? And what about Americans who describe some arms as '16in' because they could play 16in transcription discs? UK users always referred to SMEs by their effective length (pivot to stylus), while some US users added in the counterweight and shell. As for the rarer 10in versions of the Series II and II Improved, these were supplied primarily to suit certain Japanese turntables. Add to these the gold-plated limited editions, variations in the form of cable connectors, choices of counterweights, and you have fuel for cultism.

What never varied, though, were the fundamental details common to all, from 'J'-shaped arm tubes to the methods of applying tracking force. The arms used high-precision, fully-protected ball-races for the

**RIGHT:** Detail of Series 1 arm showing proprietary connectors and overall intricacies of construction



vertical axis and 0.13mm radius knife-edge bearings in chrome seatings for the horizontal axis.

SME produced a low-inertia design with the fixed elements of the balance system made light, while the heavier movable elements were set close to the fulcrum.

Precision was such that accurate tracking force up to 1.5g could be applied without a tracking force gauge. Vertical tracking force was set using weights on an outrigger, while lateral balance was achieved by changing the distance of the outrigger from the main counterweight, performed with an Allen key. The barrel-shaped main counterweight's position was adjusted by turning a small dial at the rear of arm, and it could be split into two pieces to change the range of acceptable cartridge mass. Two weights were available, of 64g and 77g, allowing the use of very heavy cartridges, up to 32.5g. SME employed a hanging-weight-on-a-thread to set adjustable bias corresponding with tracking force, via notches on a rail, a system credited to John Crabbe, late of these pages.

Total flexibility and dependable set-up were intrinsic features of the arm, the only major 'add-ons' or alterations during the arm's lifetime being generated by changes in the status quo for cartridges, eg the optional FD200 fluid damper for the

Series II and later models, changes in effective mass, and the availability of a fixed-headshell model; many audiophiles refused to believe that a detachable headshell could boast the rigidity of a fixed model.

Users delighted in the most coherent and thorough owner's manuals ever seen in audio, and niceties such as a baseplate that allowed the arm to slide forward

or back for set-up with the supplied protractor. All of the arms were fitted with fluid-damped lowering and raising devices,

and VTA was easily set thanks to the adjustable arm height.

**'Hundreds of thousands of 3009s and 3012s remain in use today'**

### COLLECTORS' NOTES

Collectors who seek out pre-owned 3009s and 3012s should note that the model 3009 Series II Improved is considered to be the definitive version. The standard arm has a typical pivot-to-stylus distance of 231.2mm. This is the one to buy if you want the true 'classic'.

With detachable headshell, a 3009 exhibits 9.5g effective mass, while the fixed headshell version reduces it to 6.5g. This didn't affect the arm's universality, thanks to the choice of accessory counterweights. But the lower mass provided better matching for high compliance cartridges: it raised the system resonance above the critical 5-8Hz region, where excitation by record warp occurs. ☺

**BELOW:** Original manual for Series II arm. Shure and SME collaborated a lot during this period as the Shure range of cartridges was considered to be the best and was thus used as a reference by SME. Also, in some territories, both companies employed the same distributors



# AUDIO MILESTONES

'R' models appeared in 1981, at the behest of the Japanese importer, who wanted to commemorate the Series I. Because the Series I couldn't be revived, SME prepared some Series II arms with thin steel arm tubes instead of aluminium. Additionally, a 3009R had a slightly longer pivot-to-stylus range than normal at 233.2mm and an effective mass of 12.7g. The 3010R's pivot-to-stylus length was 239.3mm with effective mass of 12.8g, while the 3012R increased the length to 308.8mm and effective mass to 14g. All the 'R' tonearms had detachable headshells.

The S2-R shell was pressed from aluminium alloy, perforated for lightness and strength.

Sonically? So good was the basic design that many hundreds of thousands of 3009s and 3012s remain in use today, delivering levels of performance that few arms can aspire to, let alone achieve. If ever there was an arms race, SME won it. Most of its rivals from the golden days of audio are long gone, while only the late-arrival Rega RB-series budget-priced arms even come close to enjoying similar influence.

## BEST SELLER

A most telling coda places the SME 3009 and its derivatives in a context that not only supports 'milestone' status: the coda demands it. While preparing this article, *HFN* spoke with Cameron, son of Alastair Robertson-Aikman, to confirm a few facts. When asked about the numbers produced, he



informed us that the grand total was approximately 1,250,000. He was as surprised as the author, because the ever-modest AR-A had often alluded to a lower figure.

As Cameron explained, 'I must admit it came as a shock, but Brian Laker, our Service Manager and an SME employee for 27 years, assures me that is correct. Initial production was 25 units per week, but it soon reached 1000 per week by 1964, which peaked at about 1800 per week from 1968 to 1978. This shows an average of approx 45,000 per year during the busiest decade.'

While there is no way of knowing if the SME 3009 and the models it sired comprise the best-selling separate tonearm in history, I would be surprised if any other even comes close to it. The cautious little man

## SME TIMELINE

- 1946 Original company was formed under the title The Scale Model Equipment Company
- 1950s Company moves away from manufacture of scale models and detail parts for the model engineering trade to precision engineering itself
- 1959 First SME precision pick-up arm – designated 3009 Series I – appears in September
- Company's name changed to SME Limited
- 1961 New factory situated in Mill Road, Steyning, opened in August
- 1962/3 3009 Series II introduced
- 1972 Launch of 3009 Series II Improved
- 1990 SME produces its first turntable, the SME30/2
- 1992 SME's quality assurance system formally accredited under BS EN ISO 9001
- 2003 Last 3009 Series II Improved produced

**ABOVE LEFT:** Alastair Robertson-Aikman pictured at home in 2004 standing next to a china cabinet. The cabinet is made from the enclosure of the very first B&W loudspeaker

who sits on my shoulder keeps whispering about the number of Acoses and Audio-Technicas and factory-fitted arms to best-sellers like the Pioneer PD-12 turntable. Who knows? Maybe one of the Asian multinationals did create an arm that reached similar numbers. But I seriously doubt it.

## WAITING LIST

Suffice it to say, SME, in the 1960s, devoted three entire factories and 150 employees to building a tonearm. And it still had a two-year waiting list at one period. Nor was this for a range of models, because everything that they produced was either a 3009 or 3012, with many earmarked for factory fitting by Thorens, Garrard and other turntable manufacturers who offered it as an option. Cameron even remembers, when working in the shipping department as a lad, packing 500 arms at a time – yes, 500 – for dispatch to OEM clients for their own turntables.

A few years ago, I wrote about the SME 3009 and ended the story thusly: 'Since 1959, SME arms have earned 20 national and international awards. They've deserved every one of them. The arms are cherished, beloved of audiophiles.' But six words from the late, great J Gordon Holt, founder of *Stereophile*, continue to define the 3009's impact more eloquently than I could ever manage: 'You never forget your first SME.' ☺

**LEFT:** 'The cat frequently jumps in at the window within a yard of the playing desk without causing any groove jumping...' reviewer B J Webb gives the 3009 a hearty thumbs up in a first review from the January 1961 issue of *HFN*

### EQUIPMENT REVIEWED



**SME 3009 PICK-UP ARM**

See page 108 for a full review of this arm. It is a classic design with a long, thin arm tube and a detachable headshell. The design is simple and elegant, and it has been a popular choice for audiophiles for decades.



**SME 3012 PICK-UP ARM**

This arm is a variation of the 3009, featuring a longer arm tube and a slightly different headshell design. It offers improved performance in terms of tracking and sound reproduction.

SME Pick-up Arms Ltd, Steyning, Sussex, UK. Tel: 01323 874444. Fax: 01323 874445. Email: sales@sme.co.uk

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### SME PRECISION PICK-UP ARMS

**'The finest in the world'**



The SME 3009 is a classic design with a long, thin arm tube and a detachable headshell. It has been a popular choice for audiophiles for decades.

**'The cat frequently jumps in at the window within a yard of the playing desk without causing any groove jumping...'**

reviewer B J Webb gives the 3009 a hearty thumbs up in a first review from the January 1961 issue of *HFN*

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