

THE WATCHMAKERS

The world's greatest living watchmaker, George Daniels, is renowned for making every single part of his watches – right down to the spring and screw – by hand. And now another master watchmaker is following in his footsteps...

Feature **Jo Durden-Smith**
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When in the late 1980s George Daniels visited the Manchester School of Horology in the north of England, the buzz soon went round. He was the world's greatest living watchmaker, the teachers said, and he did something almost incomprehensible: he made every single part of his pocket watches and wristwatches by hand – dial, case, hands, mechanism, all the way down to the finest spring and screw. He was a living anachronism, a contemporary incarnation of the great British craftsmen of the 18th and early 19th centuries – John Harrison, Thomas Mudge, John Arnold and Thomas Earnshaw – who had fought an often lonely battle to produce timepieces capable of fixing longitude: ie, marine chronometers and later watches which would remain totally accurate anywhere in the world, whatever storms and changes of temperature were thrown at them.

Daniels had even gone one better, the teachers said – he'd invented a new version of the watch's mechanical heart, its escapement, one which needed no oil and little servicing, and which seemed likely – if the Swiss manufacturers could be persuaded – to replace the one which had been in use for 200 years. And he'd done all this in a one-man workshop, recently moved to the Isle of Man, where he'd taken on roles that, in the heyday of mechanical watchmaking in the 19th century, had been played by 27 separate trades – no less than five of them employed, for example, in the making of the watch's case. It was hardly surprising that he only produced one piece a year. For each of them pushed in different ways at the boundaries of what was achievable, in gold, silver and steel in a tiny space: earth-time, calendars, phases of the moon, even solar and sidereal time in a single mechanism. That his watches were hugely expensive was unremarkable. But that they were also extremely beautiful seemed miraculous.

The students at the School of Horology whose workshops George Daniels toured that day were mostly training to be watch-repairers. They were unlikely to see in their careers anything much more complicated than the products of the two revolutionary advances that had put paid between them to British watch-making: mass production and the quartz crystal. One of them, though, a young man called Roger Smith, had his curiosity piqued by Daniels's visit. He read his book *Watchmaking* from cover to cover, and finally wrote to him, saying that he was interested in following his path. Daniels replied that if he wanted to have a go, he should teach himself from the book, on the job; he himself had no time. So that's what Smith did. Over a year and a half, using all the time he could steal from his watch-repairing job, he made a tourbillon pocket-watch from scratch, with no components from suppliers. Then he plucked up his courage and wrote again to Daniels, asking whether he could bring it over for his inspection.



For all their differences, they had travelled the same road and arrived at the same place

'He took me out to the workshop at the back of his house,' remembers Roger Smith, 'and looked at it. And then he said: "Well, you got it to work – that's good. But it looks hand-made. It ought to look as if it's been created out of thin air, like a work of art – there should be no tell-tale marks from the maker. So what you should do now is put this at the back of your bench. Start a fresh watch and concentrate on finish this time".'

Once again Smith took Daniels's advice. But his next watch, a twin-barrel, four-year repeating calendar watch, with a one-minute tourbillon, took him five and a half years to make. He was forever having to retrace his steps, sometimes right back to the beginning, as his skills improved, as he learned more and more, for example, about how to harden, temper and finish metals, and 'the correct strength of springs and so on. You can read George's book,' he adds, 'but it only shows the direction. You don't really find out till you start working.' This whole time he steered clear of restoring classic watches, which he was by now well-qualified to do. 'I just did run-of-the-mill servicing - Omegas were about the best I ever saw. For I knew if I started restoring, it'd take over.'

When the watch was finished, Smith once more went on pilgrimage to the Isle of Man – though this time the atmosphere was slightly frosty. 'It was as if George thought I'd been pulling the wool over his eyes the last time I'd seen him. Anyway, he started examining the watch. He opened the back and said not a word. Then he asked, one at a time, between pauses: "Who made the escape wheel? The balance? The detent? The dial?" I said that I did. Then finally he looked up and said: "Congratulations! You've made a real watch!" And after that he never stopped talking.'

It must have been an extraordinary moment, I think as I mount the steps to George Daniels's early 19th-century Isle of Man house. For what had passed between the fair-haired, sharp-faced, slightly vulpine young man and the impeccably dressed, jowled and lion-like figure who answered the door was a flash of recognition: that, for all the difference of their looks and ages, they had travelled the same road and arrived at the same place. Daniels, who is now 79, may have been accorded every honour in the book – he has an MBE from the Queen and an honorary science degree; he's been Master of the Worshipful Company of Clockmakers, the winner of only the fifth Tompion Gold Medal for Horology ever awarded, and a Sotheby's consultant on clocks and watches since 1969. But both he and Smith come from relatively humble backgrounds and had been driven by an identical obsession: to revive the tradition of English watchmaking, the marriage of science and form.

'I had to reinvent the whole thing,' he says as we settle down in his living room. There are tall-case clocks by Joseph Knibb and Thomas Grignion against the wall; a vanishingly rare portrait of



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Thomas Mudge, which he found, unidentified in a gallery; and on a mantelpiece, his own hand-made copy of a tree-wheel clock by the legendary French horologist Abraham-Louis Breguet, by whom, he says, he was greatly influenced, and on whom he's written the standard work. 'A quartz watch is a brilliant device in its way. But it lacks all those qualities that come together in a mechanical watch: historical, technical, intellectual and aesthetic. Each watch I've made since 1969 – no two alike – had first of all, of course, to look good; and that's where I'd start, with the design of the dial: it had to present science aesthetically and elegantly. But each piece also had to have some fundamental depth of purpose, something new, to bring about an improvement in performance. This was a problem after the first few years. For there was no point in improvement in the sort of pocket watch I was making. [The first one sold for the then staggering sum of £19,000, with a gold watch thrown in.] I had to do a wristwatch, a quarter of the area.'

Over the years that followed, while ringing constant changes on the possibilities of what could be carried on the wrist, Daniels came up against an anomaly inherent in the design of the usual escapement, the tiny heart that transfers energy to the movement. This was the descendant of the so-called lever escapement, invented by Thomas Mudge – and it had problems. It created friction, and friction needs oil. The watch, in other words, had to be serviced regularly. (The Swiss, says Daniels, hadn't addressed this problem. They'd merely experimented with oils of different viscosity 'for 100 years'.) 'What I wanted,' he says, 'was a watch with the sort of action you find in a marine chronometer – one impulse for each oscillation – which needed no oil and which wouldn't stop if agitated, ie, if the person wearing it were playing tennis. So after a year or two, I was lying in bed and it wasn't going right. And I got up with a sudden idea and made a sketch.' This was for what he later called the co-axial escapement, with two escape wheels mounted on top on one another. 'Since then I haven't used anything else.' Convinced that he had in one coup rectified what he calls 'the fault of the mechanical watch', Daniels tried to persuade the Swiss watch industry to take up his new escapement. But though Zenith and Patek Philippe both flirted with it, they ultimately abandoned it, either because of the expense of re-tooling, or because their technicians, obsessed with mathematics and computers rather than instinct, feel and the joy of invention, simply couldn't make it work. (Daniels is a great admirer of Swiss technicians, but not of their flair, nor – for the most part – their watches.) Then, though, in the second half of the 1990s, Omega decided to make a special limited edition of DeVille watches, 2,100 of them, using the Daniels' escapement. And in return he received back from Switzerland enough unassembled



movement components and escapements for him to make a limited edition of his own: 50 Millennium watches to carry the Daniels-London logo, as all of his other watches had done.

For this, though, he needed the man he calls 'young Roger'. So six months after he had last seen him, he called him up and asked whether he'd come and make watches alongside him, probably for the next three years. It was a huge amount of work, Smith says now. By the second year he was virtually in charge of production, making the calendar-work, the dial and hands of each watch, as well as its rotor, winding crown and case. 'But I learned an enormous amount in the process. I learned new techniques – how to engine-turn dials, for instance – and it took the fear of working with wristwatches right away. It was,' he says, after thought, 'like the very best kind of finishing school.'

I walk with George Daniels to the back of the house, past a string of garages full of evidence of the other passion in his life, the restoration of vintage cars, particularly racing Bentleys. (He owns among others, the car which broke the lap record at Brooklands in 1932.) Then we stroll on towards the workshop, where the 50 watches of the Millennium series, and perhaps 17 others – over 17 years – were made. It's a long, sunlit room, overlooking a topiarised garden. But, though its walls are lined with dozens of lathes and other complex machinery – and though there's a large-scale model of his co-axial movement resolutely ticking – it has a slightly forlorn, unused air. 'Well,' Daniels says, as if having the same thought, 'I've no inventions left, you see. So I'm working on another watch, but it's really for my own amusement. There's no necessity any more. I have no more ideas.' Then he looks out into the middle distance, and adds: 'But young Roger...'

I catch up with Roger in his cottage-workshop 10km away. When he parted company with Daniels – quite amicably – Daniels gave him a commission to produce a tourbillon watch of his own design, to be inscribed Daniels-London. He set up in a spare room and began work on a series of 12 rectangular watches under his own logo, R W Smith, which he called Series 1. Rectangular cases, which had never been part of Daniels's repertoire, are notoriously difficult to make; and though he bought in certain parts from specialist firms to keep costs down, each watch still took three months to make – two weeks to engine-turn the dial, for example, and another two to fashion the case. At the same time, he continued to make one completely hand-made watch a year for special clients. He's currently working on a timepiece for an

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astronomer, with a moon-phase system in the movement.

Now, though, equipped with a new workshop, two assistants and a computer-linked, high-precision milling and drilling machine, he's turning more and more of his energies to the production of a second series of wristwatches, with an up-and-down mechanism, a one-minute tourbillon and Daniels's co-axial escapement. These will come in rose, yellow and white gold or platinum; and there will be 236, one for each year since Thomas Mudge first used his own lever escapement in a watch – presented to Queen Charlotte and now in Windsor Castle.

I ask him, over a cup of tea in his kitchen, what the philosophy is behind his Series 1 and 2, as well as behind his commissioned watches and the case-clock he's making in association with London designer David Linley. 'Well, the commissioned pieces I

love,' he says, 'because they make you think how to translate bizarre ideas into a useable watch. Many are too complicated, too fussy; they don't suit my style. For what I'm after, I suppose in the end, is purity and simplicity. I want to do things as well and as elegantly as they were done in the high time of English clockmaking. Only I may know for sure what goes into each watch. But I want it all to be made with artistry, to be a sculpture, with good design and the highest possible standard of

manufacture. Oh,' he adds, 'and I want my pieces to last. I'm very much against what you sometimes see in Swiss watches: hand-painting, lacquer, printed dials and so on. They'll very quickly degenerate. I want to make pieces that can brought back to life, just as they are now, in 150 or 200 years.'

Then he adds: 'Did you know that when George Daniels wanted to know about how to make a watch-case, he went to Oliver, perhaps the very last survivor of the old London case-makers, and paid him to teach him his trade in five days? I learned much of my own trade from George in turn. And it's good to feel part of that tradition.'

Roger Smith's Series 2 watches are projected to start at £85,000 for a cased version and will be available from next year (special commissions are by arrangement.) Roger W Smith, Watch, Clock & Case Makers; +44 1624 897943; www.rwsmithwatches.com. George Daniels's watches only rarely come up for auction, but expect to fetch over £1 million. The second watch that Roger Smith made for George Daniels's inspection is now in the Clockmakers' Museum in London's Guildhall, along with examples from Daniels and from the early giants of British horology. A special exhibition to honour and celebrate George Daniels's 80th birthday is planned by Sotheby's in 2006, in London and New York.