

George Daniels

Still the Master Watchmaker

by Grahame Brooks

Approaching his 76th birthday, Dr George Daniels, MBE, DSc, has every right to officially retire. However, retirement certainly does not seem to be part of his ethos. Recently, even his major passion for restoring and driving vintage motor cars has had to take a back seat, as much of the last few years has been spent travelling the world. New York, Hong Kong, Tokyo and Moscow are just a few of the cities that he has been to as a roving ambassador for Omega, in conjunction with their promotion of watches fitted with the Co-Axial Escapement.

George Daniels has received every accolade in horology and can rightly be described as the master watchmaker, having invented and developed the Co-Axial Escapement before passing it to Omega in preparation for production to begin in April 1999. The Co-Axial Escapement has the advantage over the lever escapement (incidentally invented by another Englishman, Thomas Mudge, nearly 250 years ago) of reducing friction, which reduces the need for lubrication and ensures greater long-term accuracy. It is now being advertised internationally as "a revolution in master watchmaking", and has put England once again at the forefront of technical horology.

The story of George Daniels

The story of the invention of the Co-Axial Escapement begins as long ago as the late 1960s, when everyone was talking about quartz technology and predicting the demise of the mechanical watch. George was one of the very few horologists who did

not take the electronic threat too seriously. In fact, the introduction of the new technology gave him the incentive to create an escapement that would allow the mechanical watch to survive and prosper into the new millennium.

George began making his first watch in 1968, at a time when no one else could see a future for the mechanical watch. Even he was not certain whether the market would continue to exist for long. However, not being entirely motivated by commercialism, his main priority was the advancement of the mechanical watch. His inspiration to start watchmaking was no doubt due to the influence of Abraham-Louis Breguet (1747–1823), whose creations he greatly admired. George was introduced to Breguet, Paris in 1965. He was to become their London agent, undertaking restoration work that led to the making of two three-wheel clocks. When these were completed, a record was made in the Breguet ledger, and this

association gave him access to the Breguet archives, which was beneficial as he was gathering information for his definitive work, *The Art of Breguet*, published in 1975 and now available in three languages.

In the 1970s, George Brown, the then proprietor of Breguet, proposed that Daniels should assume the role of maker for Breguet and take over the running of the workshops. But he did not accept, as he preferred to be Daniels of London rather than Breguet of Paris.

The invention and development of the Co-Axial Escapement took many years, with George Daniels spending 10–12 hours every day making watch movements with experimental escapements. As George explains in his autobiography, *All in Good Time*, the first pieces were of pocket-watch size and were run in metal boxes to test their performance in different posi-

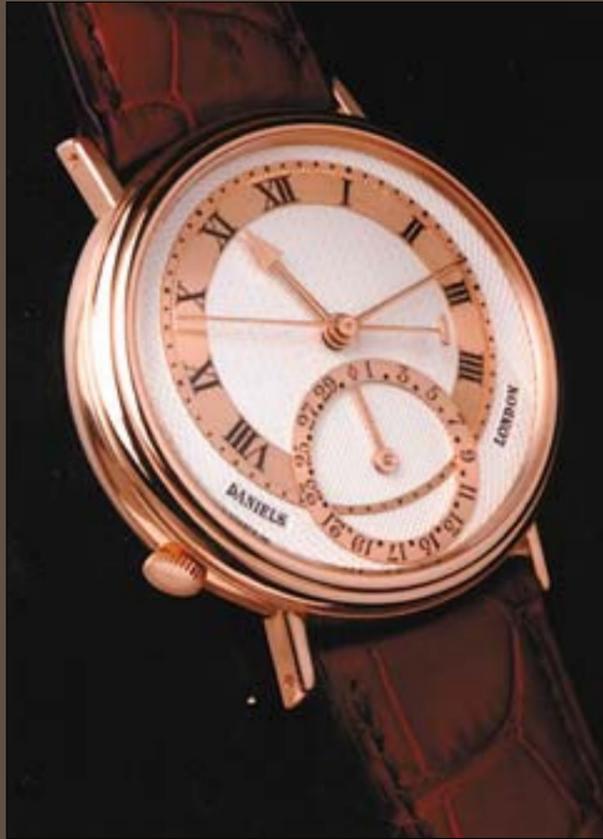
tions and temperatures. These pocket watches, as with the later wristwatch movements, were entirely made by hand and, apart from functional jewels, balance springs and mainsprings, every component plus dial and hands was made and finished by him personally; something that in series production hardly anyone in the world today can claim to have achieved. As each pocket watch took a year to complete, it was not long before there was a waiting list of knowledgeable collectors anxious to have the chance of acquiring a Daniels London timepiece.

The Daniels portfolio

During the last 25 years, George has created some remarkable horological masterpieces, including the Space Traveller's Watch – the first oil-less escapement watch to be completed, in tribute to the American astronauts who landed on the moon. The watch displays both solar and sidereal time. The silver engine-turned dial has a 24-hr chapter ring for sidereal



Photo: G. Philip and J. White



time on the left, containing a moon-phase disc and a gilt sector showing the age of the moon. The mean solar chapter ring on the right side of the dial contains an aperture for the calendar, with a sector for the equation of time at the top of the main dial. The seconds dials in the lower half give sidereal time on the left and solar time on the right.

The movement contains two independent wheel trains (producing a ratio of 1:1.002737924) and a double-wheel escapement with 13 teeth for sidereal time and 14 for solar time. This watch is quite unique in that the trains can be run and set independently, there is no backlash (so seconds are accurately indicated) and the chronograph hand can show sidereal or solar seconds as required. As with all the watches, the cases are hand-made and engine-turned by George Daniels in 18 ct. gold, and hallmarked in London.

The keyless pocket watches incorporate a winding and hand-set system of a most ingenious design. Winding is carried out by pulling the pendant up to engage the winding mechanism, while hand setting is done by pulling the pendant up further. In doing this, the usually dominant winding crown is eliminated.

Another superb watch has twin trains; it has a Daniels double-wheel escapement and a stainless steel balance wheel with eccentric weights for regulation. The silver engine-turned dial has sectors for a thermometer and to display the state of winding; the seconds dial at 12 o'clock has a provision for setting to zero. The gold engine-turned case has a diameter of 59 mm.

The appearance of Daniels's watches reflects his admiration for Abraham-Louis Breguet in his use of engine-turned dials, but with the exception of inset gold chapters and subsidiary dials. There is no artificial and applied styling to date the watch and reduce its freshness of appearance. The movements are finished in the English style with blued screws and gilded plates. The philosophy behind a Daniels watch is "utmost integrity and progressive development". Examples of George Daniels watches can be seen at such locations as:

- the British Museum
- the Worshipful Company of Clockmakers Collection at the Guildhall Library (currently undergoing refurbishment)
- the Beyer Museum in Zurich
- the Smithsonian Institute in Washington DC



Photo: G. Philip and J. White

The Co-Axial and Omega

As long ago as the 1970s, George Daniels was attempting to interest the Swiss watch industry in his escapements, and some of his disappointing and frustrating experiences are told in his autobiography. Some of the famous factories he visited included Longines, Patek Philippe and Rolex. In order to convince the Swiss that it was possible to use his Co-Axial Escapement in their watches, George produced an impressive display for the Basel Fair in 1986, with working examples of the brands previously mentioned plus Zenith and Jurgensen wristwatches, all of which he had fitted with his own escapement. While this showcase created much interest, it was not until 1994 that a young Swiss technician, Kilian Eiseneger, persuaded his senior management at ETA, the biggest maker of ébauche movements in Switzerland, to give the escapement serious consideration. Nicolas G Hayek, one of the most influential men in the Swiss industry and the dynamic President of the Swatch Group that includes Omega, took a close interest in the early tests and gave the project his blessing. His decision to go ahead was based on Omega's determination to publicly re-emphasise their early reputation for quality, long-term reliability and timekeeping. The revolutionary Co-Axial was to be the platform for the new

philosophy. To introduce a new escapement into the watch in the 21st century is, in such a conservative industry, a giant leap of faith, and Omega are delighted with their success.

The launch of this new series of Omega watches with the Daniels Co-Axial Escapement took place at Basel in 1999. The occasion was most impressive, with George Daniels explaining his reasons for inventing the escapement, followed by a speech from the then president, Mr Sofisti, who complimented George on his achievement in perfecting the Co-Axial Escapement, which, in combination with Omega, would bring the mechanical watch into the 21st century. Later, the astronaut Eugene Cernan, the last man to walk on the surface of the moon, drove a moon buggy into the hall accompanied by George Daniels and Nicolas Hayek. It was truly a proud day for all the English friends and acquaintances of George Daniels – a man who had finally achieved a life-long ambition – and was also a significant day in the history of the development of the watch.

The unique series of Daniels London wristwatches

During the years leading up to the Omega launch, George Daniels had set his mind on producing a very limited series of

wristwatches that could proudly bear the signature *Daniels London*. These were to be based on an ébauche specially produced for him in Switzerland but with components, dial, hands, case and so on, finished and assembled completely in his own workshop on the Isle of Man. The automatic slim movement has a power-reserve of 40 hours, and is fitted with a Daniels Co-Axial Escapement to ensure a reliable and close precision rate for long-term performance.

The classic round 18 ct. yellow-gold case has a polished finish, and is fitted with sapphire crystal glasses at the front and on the back to allow the owner to admire the movement with its hand-engraved surround and engine-turned rotor. The dial has an engine-turned finish with a gilt chapter ring and engraved roman numerals, and a matching date ring. The hand-made gold hands are of classic Daniels design, something that has not escaped the attention of other makers! For setting the hands and calendar, the crown is positioned at 8 o'clock for both security and ease of use. Each watch is fitted with either a black or burgundy hand-stitched crocodile leather strap and a 'D' shaped 18 ct. gold Daniels buckle. For one man to produce 50 of these watches on his own would be an almost impossible task, but George Daniels was fortunate to engage as his assistant Roger Smith, a young English watchmaker who we will hear more of in the future. Not surprisingly the watches have, without any advertising or promotion, been purchased by discerning collectors around the world. They can be proud to own a Daniels London wristwatch as it is a unique series never to be repeated.

The future

As to the future of watchmaking, George is optimistic about the survival of the mechanical watch. He says, "The quartz watch will have its champions but these will be attracted by the complexity of information that will become available in future...."

"This is not a field in which the artist-craftsman can compete. Nor would he want to supply watches made under bygone names that have no connection with modern horology... A new

generation of admirers are alert to the individuality of design of such makers as Philippe Dufour, Derek Pratt, Francois-Paul Journe, Daniel Roth, Franck Muller and Svend Andersen, who are proud to sign their work and offer it to the connoisseur and collector. Such artist-craftsmen represent the future trend of mechanical watchmaking and their work will always be in demand."

George Daniels, MBE, can be very proud of his many achievements and awards in horology. These include:

- the Arts, Science and Learning Award of the City of London
- the Tompion Gold Medal
- Liveryman and Past Master of the Worshipful Company of Clockmakers
- Gold Medallist, Fellow and Past President of the British Horological Institute
- Honorary Fellow American Watchmaker's Institute
- Honorary Life Member, Swedish Watchmaker's Guild

He is Honorary Fellow, Insignia Award, and Gold Medallist of the City and Guilds Institute, London, and received an Honorary Doctorate of Science at London's City University in 1994.

In addition, he has inspired many young people to take an interest in horology, and his books *Watchmaking*, a treatise on the design and development of the modern watch, and *The Practical Watch Escapement*, the first comprehensive work for analysing and designing watch escapements, have stimulated watchmaking among students in Europe and the Far East.

The legacy

George Daniels is considered by many to be the world's greatest living horologist, and certainly his contribution, both antiquarian and intellectual as author and maker, is quite unique in modern horology. He shows no signs of retiring, declaring that he has enjoyed a lifetime's hard labour to achieve his own ambitions and looks forward to being able to continue to do so! ●

The autobiography *All in Good Time*, (£35 incl. postage & packing) can be ordered from: Premier Print, Unit 1, Snugborough Trading Estate, Braddan, Isle of Man, IM4 4LH. Tel: 01624 612626, Fax: 01624 612627

The Clockmakers Museum is generally open Monday to Friday (except public holidays) from 9.30 am until 4.30 pm and admission is free. The Guildhall Library, Aldermanbury, London EC2. Tel: 020 7332 1868