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The George Daniels Anniversary Watch

*Road-testing The Final Timepiece by
the Twentieth-century's Greatest Watchmaker*

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In *All in Good Time*, George Daniels gives a throwaway line: 'It was one of these watches that Sam Clutton carried with him during a month's journeying to Japan and back. At the end of the period, it was under one second slow.'¹ He was writing about a watch with the Daniels Double-Impulse Chronometer escapement. I got to wondering how many other people had participated in such an adventure; travel to a distant land on an extended journey, wearing a hand-made watch by the greatest British watchmaker in perhaps 150 years. Could I do this?

Anyone who knows me knows that I love to travel, but most of my trips are much shorter than 30 days, being tied to so much at home. Also, for me, any business travel to a faraway destination must be balanced with a healthy dose of rough and tumble adventure. Whilst Japan is wonderfully safe, I hardly think my explorations of fish markets, forests, shrines and tea farms are the sort of activity for a hand-made watch. I have a feeling that an English gentleman like Clutton would have engaged in far less taxing activities in the 1970s than I would now, but I could be wrong.

Add to all that the uncertainty of any sort of travel at all these days, and I concluded that such an experiment might be out of the question. But then it occurred to me: I already live in a remote, exotic destination – London! To someone in

Figure 1. The watch with its box and paperwork as supplied by the maker to the author.

Japan, a 30-day excursion to London is as equally challenging a proposition as it would be to me in the other direction.

The watch? The George Daniels Anniversary piece, number 30 of 35 pieces made in yellow gold. Due to its scarcity, and the phenomenal prices these days, the watch spends most of its life locked away.

It was ten years ago when we got the first glimpse of a George Daniels Anniversary wristwatch. In his last active years, Daniels designed and oversaw the creation of his final masterpiece. His vision was to celebrate 35 years since his inspired first escapement, which led to the invention of the famed co-axial. George's erstwhile pupil and eventual successor, Roger Smith, was commissioned to ensure that the 35 hand-made and numbered pieces (35 in yellow gold, plus four each in platinum and white gold) were completed and delivered to their select owners, in accordance with George's wishes. When it was first exhibited at SalonQP in London in 2012, the watch caused an absolute sensation. Collectors had long dreamed of this one last chance to obtain a new Daniels masterpiece.

Daniels watches now typically command millions on



Figure 2. The Daniels Anniversary compared on the wrist with the Roger W. Smith GREAT Britain.

the rare occasions that they make an appearance on the market. Only a handful of George's pocket watches have ever appeared at auction, along with very few of his wristwatches. Prices have ranged into the millions, many being sold to British collectors.

The Daniels Anniversary was made entirely by hand in the Isle of Man studios of Roger Smith. Roger and his team still build watches one at a time by hand according to what has now come to be known as 'The Daniels Method'.

Within this simple phrase is woven a staggering degree of skill and an obsessive amount of work. It describes the process where one man masters all of the dozens of individual specialist avenues of the craft traditionally necessary to produce a watch. English watches were never really industrialised, not on the scale of those made in the USA and later Switzerland. Even at its peak, the English industry still relied on hand-skills of experts who might have taken 8–10 years to become truly proficient at one or another of these divisions of labour.

Neither would the specialists cross-pollinate; they violently guarded their secrets. The pillar-makers would not touch the work of the cock-makers, who would have no knowledge of the black arts of the fusee-makers, the fusee-chain makers, the wheel-cutters, the jewel-bearing makers or the pinion-wire drawers, to say nothing of the associated 'decorative' crafts such as case-making, engine-turning or hand-making. Except for a relatively small number of one-off 'masterpieces' made by apprentices concluding their indenture, every watch in history was the collaborative effort of craft specialists.

Just how, and why, did Daniels gather all the necessary skills to make watches by this unique method? With his BHI training and qualifications, he began with a solid grounding in high-grade commercial watch repairs. For some years that's how he paid his way, quietly conducting restorations and trade repairs in South London. At that time, there was still a living remnant of the old Victorian-era craftsmen. Where he could, Daniels befriended, courted, cajoled and even paid individuals to teach him about the old methods.

Whereas high craft skills caused Daniels watches to come into being, it is their unique aesthetic style that has permanently implanted them into the consciousness of a generation. This style comes from Daniels having restored and researched countless important antique watches, especially those by Breguet. Every Daniels watch is an absolute lesson in effortless balance, restraint and legibility. None of it is forced.

People say that Daniels mimics Breguet, and I agree that there are parallels with Breguet's style. But what is Breguet's style other than a culmination of perfect proportion, balance, and using the visual properties of available materials to their best effect?

If you followed those principles equally diligently, I argue that it would be difficult *not* to end up in the same sort of stylistic realm as Breguet. Whatever parallels there are, Daniels watches can never be confused for those by Breguet. Daniels watches are underpinned by a slightly assertive and if I may say, more practical, edge. The arrow-head of his hour hand is less fussy and more purposeful than Breguet's crescent moon, while the bold size and weight of his watches makes them more eminently wearable than those destined for the genteel brocaded pockets of pre-revolutionary Frenchmen.

The technical aspects of the Daniels Anniversary are impressive. It is a solid gold wristwatch measuring just over 40mm in diameter. The stepped case is reminiscent of its predecessor the first Daniels wristwatch, a four-minute tourbillon chronograph made in 1991.

The front crystal is slightly domed, and the rear flat. The layout of the Anniversary dial also echoes that of its tourbillon predecessor, with the centre of the main chapter ring pitched slightly above the horizontal centreline. A state-of-wind indicator occupies the upper region of the dial, whilst overlapping subsidiary dials indicate the date and seconds at lower left and right. The space at the lower edge of the dial hosts a gold escutcheon bearing the Daniels signature.

Fitted to the hand-made alligator strap is an extremely solid deployant clasp. Weighing in at a good 50 grammes, it serves as a useful counterpoise to the solidity of the watch case. Case and clasp are both hallmarked in London.

Dial and Hands

The solid silver dial is engine-turned on the original Daniels rose- and straight-line engines, with each zone bearing a slightly different pattern of basket-weave, diamond and barleycorn guilloché. A fine 360-point 'ratchet' pattern delineates the space between the roman hour markers and the minutes chapter, as described in *Watchmaking*. The whole point of engine-turning dials is not for decoration, but as Daniels points out, to create variations of surface. These cause subtle differences in the way light reflects off the dial's different zones, facilitating the hands to stand out more clearly at a glance.

The silver areas of the dial are whitened by a quite terrifying fire-cleaning process. After the silver dial has been made, it is heated in a flame to red hot, just a few degrees away from its the melting point. This causes impurities near the surface to burn and oxidise. Whilst hot, it is quenched in acid to remove the oxides. The process is repeated, until the entire surface is left a pure, unblemished white. Just a moment too long in the flame, and weeks of work could end up in a puddle. I haven't asked Roger what the attrition rate was for these dials, I am too scared to know!

The chapter rings and slender hands are of solid yellow gold, the latter being gently tapered and beautifully curved and polished. This makes them constantly glisten and therefore highly readable no matter what the light or angle of observation. Glinting in tandem are the black-polished hand bosses, the hour hand's arrow tip and the seconds hand counterpoise. The watch veritably shimmers in a subtle but mesmerising effect every time you look at it. Static photographs simply cannot capture the full dynamic beauty of this masterpiece.

Close-up photos also show how beautifully Roger Smith's studio has performed the engine-turning on this dial. As before, in life the specific patterns present themselves more as shifting contrast in the light, aiding readability. The effect only works because of the absolute perfection of their execution. The widths, depths, and crest-matching of every incision meet in flawless exactitude; any variation would break the evenness and therefore draw the eye. The engine-turned dials made by Roger's studio are as good as any I have seen, with the dial of his GREAT Britain watch still being one of the pinnacles of that craft within horology.

Calendar

The calendar can be corrected by 24-hour advance of the hands, or by means of a traditional corrector in the case band. This action is distinct and positive. I prefer this to the lightness one often encounters with the correctors of certain luxury watches, which give ambiguous tactile feedback and an unclear spring return of the corrector, leaving one worried that the thing is about to jam up. This one is like its designer: purposeful and clear.

The Escapement and Train

Benefitting from a large-diameter variable-inertia balance, the system has high energy in spite of its traditional 18,000 train. Roger has published excellent reasons for his preference of this train count, including that it needs a mainspring of only modest strength.² This facilitates adjustment and imposes low forces on the movement, leading to a longer operational life and service interval. The watch uses the 6 mm Smith Single-Wheel Co-Axial escapement, with the wheel in blued steel.

The beautiful balance cock is an element with strong links to the Daniels tradition. Daniels was all about visual lightness and grace. His very first watch used a brass cock, but already that one was comparatively narrower than expected given the



Figure 3. Both watches exhibit Roger Smith's world-class engine-turning.



Figure 4. The pronounced three dimensionality of the dial is a real Daniels trademark.



Figure 5 (above) The four different types of engine turning are beautifully executed. Figure 8 (below). The calendar corrector.

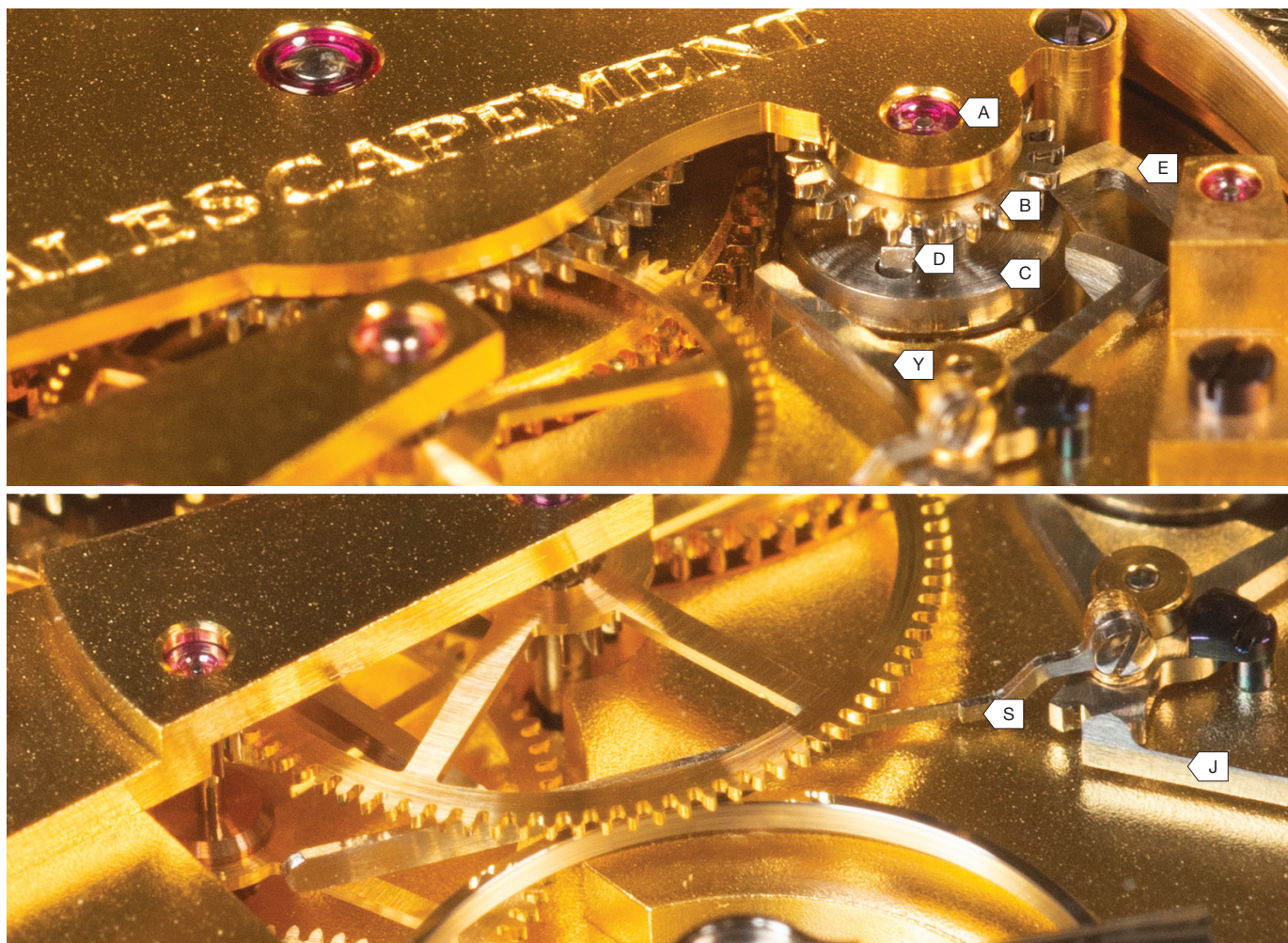


Figure 6. The operation of the differential-screw mechanism for the state-of-wind, balance-stop.

size of the calibre. From his second watch, he started using steel balance cocks, these being stiffer for a given cross-section than brass, and also capable of taking a more durable finish. From that point, Daniels balance cocks were almost exclusively of this exact form, gently tapering and with a perfect domed black polish terminating in an exquisite transition to the flat jewel boss. Possible effects due to magnetism are obviated by the use of an appropriate balance spring and a beryllium bronze balance.

You can see that the seconds hand is not planted in line with any of the train wheels. Like the Roger Smith Series 2 Open-Dial, the third wheel arbor in the Daniels Anniversary extends to the dial side and drives the seconds via a further pair of mobiles. The jewelled bearing for this is just visible below the word 'CO-?.'

State-of-Wind

The state-of-wind is driven by a differential screw mechanism, similar to that illustrated in pages 269–272 of *Watchmaking*. What is wanted from a device like this is to extract a certain amount of sideways motion from the barrel being wound and unwound, representing the full period for which the watch can run. This is to move the hand on the dial between **U** and **D**, and also to activate the balance stop mechanism when the state of wind drops to a certain point.

The action can be seen in **Figure 6**. There is a screw, much like a feed-screw of a lathe compound slide; its upper end is

pivoted at **A** with wheel **B** fixed to it. This wheel is geared to the keyless work, so that it rotates when the watch is wound, rotating the screw with it. As it turns, a hardened steel disc-like nut, **C**, rides up the screw.

In *Watchmaking*, the nut has a pronounced cone shape, but in the Daniels Anniversary, it is less steep and much less tall.

Once it has been screwed upward, how does the nut come down again? The screw can't turn backward, because it's geared to the keyless work which only turns one way. There is a further wheel, not visible here, concentric with the screw, and geared to the great wheel. On the face of this wheel, somewhat off centre, is a steel pin. The pin passes freely into a corresponding hole in the nut. The very tip of this pin is visible at **D**. As the watch runs, this pin acts like a finger, unscrewing the nut back downward.

Having obtained a system for getting rising and falling from a continuously-rotating part, the next challenge is to get sideways action out of it. This is where the 'cone' action comes into play. In *Watchmaking*, Fig 511a, Daniels illustrates an arm, lightly sprung to rest against the cone. This is progressively pushed aside as the fat part of the cone rises and comes to bear against it.

In the Anniversary, an equivalent action takes place with arm **E**. There is a practical difference, in that **E** has a sloped tip that constantly rests on the edge of the disc **C**. The sideways-pushing 'cone' action therefore becomes the responsibility of the arm rather than the disc, but the



Figure 7. The movement showing the Manx 'Three Legs of Mann' on a white-gold badge.

principle and outcome are identical: a rising-and-falling are translated into a left-and-right motion. The motion is then communicated to the dial side where simple linkages sort out the correct ratio so that the hand can move full scale or otherwise.

The balance stop mechanism again uses a system very much like that illustrated in *Watchmaking*, Fig. 519. In fact, the whole affair is nearly identical to the system used in the Daniels Elsom II watch.³ There is a Y-forked arm **Y**, its tips straddling the disc **C**. Thanks to sloped faces on the tips of **Y**, this latter is forced alternately right and left as the disc rides up and down while the watch is wound and running down. The action is not continuous, though. Through notches in the **Y** tail, and a strong jumper **J**, the forked arm clicks smartly right and left at known points in the winding cycle. A long, flexible stop spring **s**, jumps cleanly and positively into and out of action, arresting the smooth balance before the mainspring energy drops too far to offer reliable timekeeping.

The stop spring **S** itself also does double duty. Via a different system of levers, it is gently pressed against the balance when the winding stem is pulled, allowing exact setting to the second.

The balance-stop device stops the watch after a certain number of barrel revolutions. This means that the amplitude remains broadly constant for the entire duration, never to drop sufficiently to lose stability. The balance-stop comes cleanly into force when the state-of-wind reaches $\frac{3}{4}$ down, giving the watch something over a day's run, and if stopped, will release the balance when wound to about half full-scale.

This system is one of many which, to me, represent something I truly love and admire about the work of earnest craftsmen, not only Daniels: consistency and continuity of execution. Daniels used the screw differential all the way back in 1973 on the watch he made for Professor Thomas Engel. The following year he used it again in the Elsom II, this time with refinements, but still unequivocally of the same stock. Once he'd learned how to do something, he kept tweaking and refining it, but always stayed true to his original interpretation.

As much as this applies to the details of Daniels watches,

it applies equally to their high-level appearance. His first watch had a pivoted detent escapement. Ten years and sixteen watches later, he had developed the co-axial escapement, but I defy you to tell them apart at a glance. Even his complicated watches have a visual continuity that weaves them together. Without needing attention-seeking fancy decoration, the origin of each one is instantly and profoundly a Daniels.

It suggests to me a consciousness in the maker that life is limited, and that time should be spent on incremental improvements rather than constantly splashing out in disconnected directions at every iteration. The retrospective body of work therefore reinforces itself, each part bolstering the technical and aesthetic strengths of the others.

So, having spent rather more than a couple of lines, what is the outcome of the 30-day excursion to a faraway land? First, I should report that it taught me a good deal of discipline, because although I am immersed in the world of watches, I am not used to checking the same one every day. With something over a day's run, the Daniels gave me a scare sometimes when I nearly forgot to wind it, which would cause me to have to start over. But that is more about me being organised than anything else. The Daniels Anniversary performed most excellently on its 30-day London trial; much better than Clutton's watch, perhaps. Daniels only mentions that its accumulated error was one second. The Daniels has an average rate of 3.1 seconds, with a variation of under a second.

That the timekeeping is so good is a bonus. By being able to peer at the object, knowing how long people spent working on it, discarding parts, starting over, trying again and again to present to their patron an object as perfect as they can conceive is simply humbling. Such things forge a gratitude for being able to live and work at a time when objects and events like this are even possible; to know that we are part of a community where other makers and their patrons are similarly hard at work expressing their own skills and passions; *this* is the real journey, more exciting and difficult to reach than even Japan.



Figure 8. On the author's wrist at a tea-party in Switzerland, 2018.

REFERENCES

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