Clockwise from right: four of the innovative – and now highly covetable – case designs that housed the Beta 21 movement, from Rado, IWC, Omega and Rolex

A ticking time bomb

The launch of the Seiko Astron rocked the watch world. *Adrian Hailwood* traces its revolutionary roots

Fifty years ago, a Japanese watch brand brought the world's first quartz wristwatch to market with the (mistaken) prediction that: "One day, all watches will be made this way." Costing the equivalent of a family car, the Seiko Astron marked the arrival of a technology that would change the industry forever. This ground-breaking innovation, which has its roots in 19th-century Paris, came to fruition in Japan on Christmas Day, 1969.

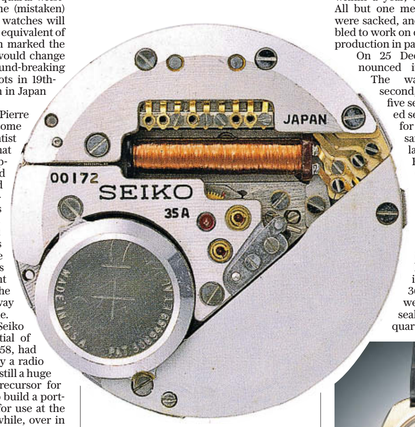
When brothers Jacques and Pierre Curie – the latter would become the husband of famed scientist Marie – discovered, in 1880, that a small electrical charge applied to certain crystals would cause them to bend, it opened up new possibilities for accurate timekeeping. Scientists and engineers jumped at the challenge and, in 1927, the first clock built on the principle was unveiled by Bell Telephone Laboratories in the US. But, as impressive as the achievement was, the mammoth size of the machine meant it was a long way from being commercially viable.

Watching from a distance, Seiko was quick to see the potential of quartz technology and, by 1958, had built a quartz clock for use by a radio station. Although large, it was still a huge step forward and was the precursor for "Project 59A", which aimed to build a portable quartz timepiece ready for use at the 1964 Tokyo Olympics. Meanwhile, over in Switzerland, 20 watch brands had come together in 1962 to establish the Centre Electronique Horloger (CEH) to investigate new technology. And, in 1967, prototype quartz wristwatches from both CEH and Seiko emerged for the first time.

Both the prototypes suffered from power issues, draining their batteries far too quickly. Both teams struggled with the issue and, ultimately, the Swiss abandoned their initial movement design, coming back into the race later with a more efficient version.

Seiko had its own problems and it took the intervention of the company president in 1968, with a demand for a viable product within a year, to galvanise development. All but one member of the design team were sacked, and a new group was assembled to work on design and scaling for mass production in parallel.

On 25 December, 1969, Seiko announced its Quartz Astron 35SQ. The watch ticked once per second, claimed accuracy within five seconds per day, was a limited series of 100 pieces and sold for 450,000 yen – about the same price as a Toyota Corolla. Four months later, at the Basel Fair, the CEH Beta 21 was launched. While Switzerland's watch was a commercial flop, discontinued after the initial 6,000 movements were used up, Seiko, in contrast, built on its achievement. In 1970 it introduced a new kind of low-power semiconductor in a new movement – the 36SQC, driving battery life well beyond one year and sealing its dominance in the quartz watch market.



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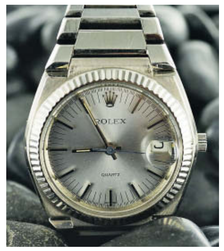


Collectors' items

'Second place' Beta 21s are having the last laugh, says *James Dowling*

Although Seiko was first to market with the quartz Astron, we know that Switzerland had hardly been sitting back with its arms folded. There is a history of cooperation among Swiss watch companies that stretches back to the amalgamations created during the Great Depression of 1929. So it is little surprise that when they saw the advent of electric watches in the 1950s from firms such as Hamilton and Elgin in the US and LIP in France, the Swiss industry set up the aforementioned CEH in the 1960s.

By 1967, the Beta 1 prototype quartz wristwatch developed by CEH proved to be 10 times more accurate than the best mechanical watches in tests at the Neuchâtel Observatory. This led to the decision to proceed with a production version.

However, the field of electronics was evolving and conflict arose within the team as to whether they should go with the technology within Beta 1, or try the new (and superior) methods. Meanwhile, the watch manufacturers themselves were unsure if quartz was indeed the next big thing, or whether they should look at developing an electric watch.

The latter uses a battery for power, instead of a mainspring, but still contains a traditional balance wheel, plate and gear train. This meant it could be created using existing machinery, as opposed to quartz, where the internal workings are radically different. As a result of these conflicts, almost three years elapsed between the arrival of the Beta 1 and the commercial launch of the Beta 21.

In terms of aesthetic, the Beta 21s were poles apart from the late-1960s trend of producing the slimmest movements and elegant wafer-thin cases. Rectangular and bulky, the Beta 21 movement measured 30.9mm by 26.5mm and, when they finally launched in March 1970, the watches varied between 38mm and 50.5mm in diameter – this at a time when a Rolex Day-Date, considered large and ostentatious, measured 36mm in diameter.

However, this also gave the manufacturers a certain freedom: if they couldn't be ultra-slim, then why not go big, brash and flamboyant?

The designers didn't have to be told twice. Omega, was the first to market with its asymmetric Electroquartz. A firm as staid as Patek Philippe produced a watch shaped like a 1970s Murphy television fitted with a randomly perforated gold bracelet. And the normally austere, Germanic IWC introduced several versions, including the square 'International' shown here, as well as a watch that was an almost perfect replica of a flying saucer in sterling silver. IWC, however, wasn't the only firm to use an unusual medium – Rado, one of the smaller companies in the consortium, introduced its Beta 21 model with a dial made from a thin sheet of Afghan lapis lazuli.

Historically, watches had always been priced on the accuracy of their movements so, when these new watches were launched, offering a new level of precision, the makers priced them accordingly.

The most expensive mechanical watch in the Rolex line-up at the time was the gold Day-Date at CHF5,975 (about £1,000 back then). The Rolex model 5100 using the Beta 21 movement sold for CHF14,600 in yellow gold, and an astounding CHF18,300 in white gold (the equivalent of a BMW 2002 in the 1960s).

Unfortunately, the Beta 21 watches launched four months after Seiko's Astron and, in horology, there are no prizes for finishing second. Suddenly the Beta 21s were considered to be yesterday's news, and, as quartz watches became ever cheaper, their desirability plummeted. Over time, the thing that came to define quartz watches was not their accuracy, but rather their cheapness. The launch of the Swatch in 1983 sealed the fate of expensive quartz watches.

The manufacturers were given a certain freedom: if they couldn't be ultra-slim, then why not go big, brash and flamboyant?

But that's not the end of the story. In recent years, the Beta 21s have become increasingly sought-after among discerning collectors, who want to own one of the first Swiss quartz watches. Crucially, too, fashions have changed, and what were deemed to be ungainly oversized watches at the turn of the 1970s, are now perfectly acceptable in the age of substantial-looking Panerais and Royal Oak Offshores.

Their rarity also impacts the current market values. Remember the White Gold Rolex ref. 5100 quartz, which sold for £3,000 in 1971? Currently, these are selling for between £75,000 and £100,000.

Their day has finally arrived – only 50 years too late, I am afraid.

From top left: the quartz movement that reshaped the watch world; the original Seiko Astron from 1969

Expanding horizons

In 2017, Louis Vuitton's original connected watch sold out before it even hit boutiques. Housed in the same case as the brand's very first traditional timepiece collection, and one of the most stylish smartwatches on the market, the second-generation Tambour Horizon has now been launched.

Just like the original, this update is aimed at jet-setters and features new materials and colours, as well as extra functions to make user interface better than ever. A choice of dials and motifs represent classic moments from Vuitton's history. Emblems such as the Monogram or Damier have been stripped back to basics and dance across the watch face, interspersed with the house's familiar Flower symbol.

Initials can be added to the dial – a noteworthy addition that, along with the interchangeable coloured straps, allows the wearer to customise their timepiece.

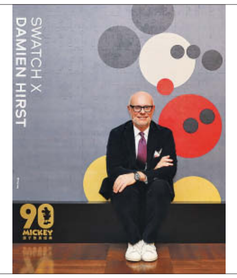
Making the watch as useful an accessory as it is a fashion statement, the 'My Travel' function syncs to hotel and flight bookings to provide the most up-to-date information. There is also access to Vuitton's acclaimed *City Guides*. Other clever upgrades include a 24-hour ring with day/night indicator, a step counter and a pollution gauge.

Running on the Qualcomm Snapdragon Wear 3100 platform with Google's Wear OS software, battery life is now a competitive full day, and five additional days in time-display only. Perhaps the best improvement, though, is that the various functions can now be accessed via the rotating crown.

It's available in polished steel, matte-black PVD, white ceramic (with a gem-set option) and matte-brown PVD – new and particularly Vuitton-esque. *TL*

From £2,125; louisvuitton.com

From right: a poster by Keith Haring for the 1984 World Breakdance Championship – Swatch's first collaboration; the Flymagic; a Swatch x Damien Hirst timepiece for Mickey Mouse's 90th birthday in 2018; Carlo Giordanetti, creative director of Swatch Ltd. Below: the late Nicolas G. Hayek



Such fantastic plastic

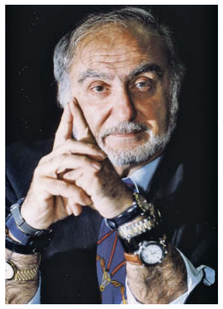
Bold, bright and brilliant, Swatch puts the wow into watchmaking. By *Tracey Llewellyn*

Swatch could be described as the brand that has it all: loyal collectors, sales in the multimillions of units and, best of all, it has that X factor that eludes so many brands: it is ubiquitously cool – effortlessly so.

Its story is legendary in watchmaking lore. During the 1970s, the Swiss watch industry was facing the most challenging time in its history. Following the oil crisis of 1973, the world was in recession and the spend on luxury goods fell dramatically. Added to this, American and Japanese manufacturers had started a watch revolution with alternative technologies (as featured on the page opposite). Swiss exports plummeted and employment in the industry shrunk by more than two-thirds in less than 20 years.

By the early 1980s, the situation was critical, leading to a group of Swiss banks asking the Lebanese businessman Nicolas G. Hayek to step in. Under his leadership, two of Swiss watchmaking's behemoths – ASUAG and SSIH – were united and, in 1983, introduced the Swatch.

A plastic case and a quartz movement with just 51 moving parts, production was automated and the timepieces were designed to be cheap and disposable. Within



two years, approximately 2.5 million units had been sold. In 2019, the figure is in the hundreds of millions.

Today, both Hayek and Swatch are widely credited with kick-starting the revival of the Swiss watch industry and, in 1998, with Hayek as a major shareholder, SMH (Société Suisse de Microélectronique et d'Horlogerie), as the collective was known, changed its name to the Swatch Group. Having acquired several watchmaking brands over the years, the group is today the largest watchmaking company in the world.

Consistently in tune with pop culture, Swatch has commemorated events such as the World Breakdance Championship and collaborated with fashion designers from Vivienne Westwood to Agatha Ruiz de la Prada, and artists including Keith Haring, Sam Francis and Damien Hirst.

Always statement-making, the Sistem51 was launched on Swatch's 30th anniversary in 2013 for just €130. Still with just 51 moving parts, the watch is self-winding and created with five separate modules held together with a single central screw. It continues to be produced on an automated production line, with adjustments made by a laser as opposed to being done by hand.

A mark of its importance, the Swatch Group's latest mechanical watchmaking development, a new hairspring made from the proprietary material Nivachron, was launched in none other than a Swatch watch – this decision being twofold. Firstly, it underlines the value of Swatch to both the group and the entire Swiss watchmaking industry. Secondly, it demonstrates the main advantages of Nivachron springs – namely, they can be mass produced and are well-priced. Creative director Carlo Giordanetti says this bold move "stands for the restless commitment to make Swatch a pioneering brand, and a proud, contemporary and rebellious carrier of the Swiss Made flag".

Initially used in three limited-edition Flymagic Swatch watches (500 pieces of each, priced at CHF1,500 – around £1,130), to be launched on 30 April, the Nivachron spring will be rolled out in all Swatch Sistem51 models from this September. And while much of the press was based on the Flymagic's price (huge for a Swatch), relatively little was made of the significance of the new material, a titanium alloy that combines the anti-magnetic properties of silicon with the production process of traditional nickel-steel springs.

Nicolas G. Hayek and Swatch are widely credited with kick-starting the revival of the Swiss watch industry

The Flymagic itself is a titanic 45mm, with its skeletonised movement constructed back-to-front so that it is visible dial-side through its transparent rotor.

Present at the February launch, Nicolas Hayek Jr, CEO of the Swatch Group and son of Nicolas G. Hayek, summed up the importance of the brand when he said: "In 1982, my father decided to launch Swatch to maintain the know-how of people at Nivarox – the ones who do the finest work for the most expensive watches in the world. Without the millions of movements made then, Nivarox and its accumulated skills would have died. Sure, Swatch is a product, but for the history of the industry, it has done more than most."

Quartz: five of the best

Braun BN0265 Chronograph, £275; braun-clocks.com

Fears Redcliff Date, £650; fearswatches.com

Hamilton Ventura Chrono Quartz Gold, £925; hamiltonwatch.com

Longines Conquest V.H.P. GMT Flash Setting, £940; longines.co.uk

Harry Winston Ultimate Marble Marquetry Timepiece, POA; harrywinston.com