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STRENGTHENING THE BASE OF THE PYRAMID

High on the intoxicating returns from its ascent to the dizzying heights of luxury, the Swiss watch industry has now fallen back to earth. And it's asking itself whether it went too far. All eyes are now redirected downwards, towards the mid-range hitherto regarded with barely concealed condescension.

Without anything to hold it up, the top of the pyramid can't sustain itself. If you're going to build high, you need a solid foundation. And in order for the base of the pyramid to be sturdy, it must be as broad as possible. In other words: without volume, there can be no exclusivity.

The role of providing volume – a volume of quality, that underpins the strength and permanence of the entire edifice – has fallen to what we have come to call, for want of a better term, the “mid-range”. No one likes this term. Some prefer to speak of “accessible luxury”, which is an oxymoron since, if it's accessible, it's not really luxury.

Having said that, there is no single “mid-range” but several “mid-ranges”, because the accessibility of a given product is relative, depending on where you live, in a developed economy or an emerging one. Similarly, there is no one middle class – there are several, and their destinies are very different.

While the Chinese middle classes continue to expand – they already represent one-third of the world's middle classes – the Western middle classes are in decline. A recent article by Bloomberg was entitled: “Middle-Class Angst Is Depressing Swiss Watch Sales”. But a careful reading reveals that the examples cited were all about high-end watches priced at \$5,000 and over, not the mid-range, which is generally defined as sitting between \$500 and \$3,000.

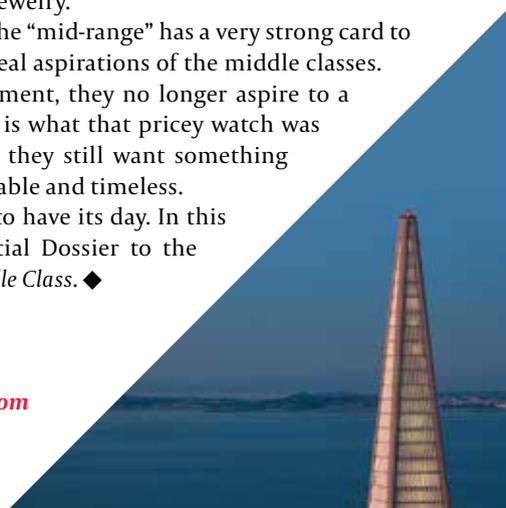
The economic pressures weighing on the middle classes, the fact that salaries are stagnating, concern about the future is rising, jobs are being replaced by robots, Europe is dealing with Brexit, the USA is dealing with an unpredictable Trump, China is dealing with anti-corruption and anti-extravagance campaigns – all this has changed the game, and it has altered the aspirations of the “middle class” which, as Bloomberg points out, “has decided that, after not getting a pay rise for many years, there are better things to spend money on than Swiss wrist jewelry.”

But that is precisely where the “mid-range” has a very strong card to play, by responding to the real aspirations of the middle classes.

In their state of disillusionment, they no longer aspire to a higher social status (which is what that pricey watch was intended to advertise), but they still want something that is handsome, solid, reliable and timeless.

It's time for the mid-range to have its day. In this issue we devote a substantial Dossier to the subject: *Don't Forget the Middle Class.* ♦

Read our reports
on **MID-RANGE** watches
on www.watch-aficionado.com



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PATEK PHILIPPE Nautilus 5711 Launched in 2006 for the 30th anniversary of the Nautilus, this iconic “steel jumbo” version, reference 5711/1A, is directly inspired by the historical reference 3700 born in 1976. The basics are here: stainless steel octagonal case, two lateral hinges, an integrated bracelet, a mix of brushed and polished surfaces, a simple display on a grooved blue dial. But the new 3-part case has grown a bit to 43 mm and is equipped with a sapphire caseback, the hinges are slightly curved, the crown is larger and the bracelet has rather flat central links. The 5711 is equipped with a new automatic winding in-house movement calibre 324 SC (for seconde centrale or central second). | www.patek.com

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HAVE THE MIDDLE CLASSES BEEN NEGLECTED?

In recent decades, Swiss watchmakers have been preoccupied with scaling the summits in terms of pricing, mechanical sophistication and artistic refinement, while overlooking, ignoring even, an essential sector of their clientele – the middle classes. (A notable exception to this is the Swatch Group and some strong independents.)

In our previous Dossier – The Price Issue, *Europa Star Time.Bizness* 1/17 – we highlighted the considerable increase in market share of watches priced over CHF 3,000 (export price), which grew from 15.5% in 2000 and peaked at 60.2% in 2015, falling back only slightly in 2016 to 60%.

Logically, what this also points to is that the market share of Swiss mid-range watches has fallen significantly in 15 years, especially given that the total number of watches exported has remained virtually the same, declining marginally from 29 million units in 2000 to 28 million in 2015.

This contraction of the mid-range watch sector has certainly benefited Switzerland's competitors. In 2015, for instance, while the number of pieces exported by Switzerland fell 1.6%, settling at 28.1 million units, Germany increased exports by 4.4%, reaching a total of 21.9 million units, while French exports rose by 6.1% to 7.3 million. At the same time, Japan exported around 60 million watches with a total value of 160 billion yen (1.3 billion euros).

Given that the majority of these German, French and Japanese exports can be classed as mid-range (between CHF 500 and CHF 3,000 retail), the relative “void” left by Switzerland has been filled by its rivals.

Is the wind about to change?

The crisis that Swiss watchmakers have endured over the last two years – from the top, this time – is a game-changer. Suddenly, their rather condescending attitude to the mid-range has shifted: after all, the mid-range not only has the volume, it also seems better able to absorb the bumps in the road that are an inevitable consequence of our globalised trade.

It was obvious at the recent SIHH that brands that previously would not deign to discuss prices were now broadcasting them, although the subject was cloaked coyly in terms of “value”.

One brand in particular, somewhat unexpectedly in this exalted company, was thrust into the spotlight. Baume & Mercier abruptly found itself the focus of universal admiration because of its moderate pricing.

The mid-range is back. Suddenly, everyone wants a piece. Brands sense a possible growth vector. Retailers sniff an opportunity to increase footfall and stock turnover.

Interestingly, the same phenomenon can also be observed in Western politics. All at once the middle classes, who are becoming increasingly disaffected, are exerting a powerful fascination. And this is no coincidence: as we have often said, watchmaking is a reflection of its time.

The mid-range is also a laboratory

The most profound upheavals in the watchmaking sector won't come from the top – they are already happening in the mid-range trenches.

Joe Thompson, an astute observer, describes in his article (see further) the forces at work in this vital sector of the American market.

Whatever Swiss watchmakers may choose to believe, the advent of the smartwatch shook the mid-range to its foundations, and as e-commerce continues to cut a swathe through traditional consumption patterns, a flourishing grey market is upsetting the old hierarchies. And we all know that what's happening in the USA eventually happens everywhere, a few years later.

Whether it likes it or not, the mid-range has also become the laboratory where the future of the watch industry is being shaped.

Having said all that, however, this so-called “mid-range” category is difficult, if not impossible, to define. Not only is the concept of mid-range itself relative (a watch that would be considered ordinary here might be deemed a luxury somewhere else) but it covers a very broad spectrum of products. And this doesn't even take into account the contradictory tastes that must be catered to.

What's more, middle-class consumers are no longer prepared to take anything that gets foisted on them. While price may still be crucial, the concepts of high reliability, quality of finish, durability and timeless appeal – concepts they have absorbed from the shop windows and the marketing campaigns of prestigious brands – have all, with the help of the internet, become decisive factors.

So it's no surprise that brands are now talking up the correlation between price and substance. In other words, to satisfy a mid-range client, you really have to provide value for money. Whatever the price.

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AMERICA'S EVER-EVOLVING MID-MARKET

BY JOE THOMPSON, USA

To see the impact of cutting-edge change in the watch world, check out America's big, bruising middle market.

In the 2016 U.S. presidential election, an ocean of ink was spent on chronicling the uncertainties and anxieties of America's middle class. Despite all that, there is one area that just-plain-folks really can't complain about. That's watches. When it comes to buying a watch, Joe and Jane Six-Pack have never had it so good. Middle-class Americans today can buy more watch brands, boasting more technologies and styles, at more watch retail outlets than ever before.

That's not to say that the U.S. watch market is booming. It isn't. (Swiss watch exports to the U.S. dropped 9.1% in value last year.) What it means is that the American mid-market, like the global watch market, is undergoing some dramatic changes resulting from new economic, technological, and demographic forces. For consumers, that's good. For watch companies, maybe not so much.

The middle segment of the U.S. watch market, which runs roughly from \$200 to \$1,200, may be the best place to see those forces at work. Somewhere in that range is what the American middle-class – defined as a three-person household with an annual income ranging from \$42,000 to \$125,000 – tends to spend on a new watch. It's home to the traditional Big Three mid-priced brands, Citizen, Seiko, and Bulova. It also includes a strong fashion-watch segment as well as quartz analogue watches from a significant contingent of Swiss brands like Movado and Raymond Weil. Here's a look at three forces that are shaping that important market segment today.

1 | Smartwatches

The arrival of the Apple Watch in 2015 was a mid-priced bombshell that showed the potential power of the connected watch. After just nine months in the watch market, Apple

became the world's first or second largest watch company (it depends on your estimate of Rolex's sales) with sales of an estimated 13 million watches worth \$6 billion. Last year, though, in its first full year and despite the launch of Apple Watch Series 2, priced from \$369 to \$1,339, Apple's watch sales dropped 15%, according to estimates by Strategy Analytics, a Boston research firm. (Apple does not release sales data for the watch.) Smartwatch sales for Samsung, the world's #2 smartwatch producer, fell 11%. Overall, global smartwatch sales rose a measly 1% to 21.1 million units.

U.S. watch executives offer good news/bad news assessments of the impact of smartwatches. The good news is that they are expanding the market, putting watches on the wrists of people who would not otherwise wear them. The bad news is that they have taken sales away from traditional mid-market brands. Just where the smartwatch market is headed is anybody's guess. Apple and Fitbit remain gung-ho about it. But the loss of momentum at Apple and Samsung and the failure of smartwatch-pioneer Pebble (the watch was discontinued and the company sold to Fitbit in December) and Motorola (it halted production of its Moto360 smartwatch) has soured analysts on the category. They have slashed 2017 smartwatch forecasts, as smart technology moves on to new applications such as home appliances (smart speakers, smart bathroom showers, etc.).

In an ironic twist, one smartwatch expert last summer looked to traditional watch brands to boost the stalled smartwatch market. "One of the biggest omissions in the smartwatch market is the absence of traditional watchmaker brands among the leading vendors," wrote Ramon T. Llamas, research manager for International Data Corp. in Massachusetts, an authority on consumer technology markets. "Only a small handful of traditional watchmaker brands have entered the smartwatch market... Participation from traditional watchmaker brands is imperative to deliver some of the most important qualities sought after by end-users, namely design, fit and functionality. Combine these with the brand recognition and distribution these brands already have, and it's reasonable to expect the smartwatch market to grow from here."

Indeed, the number of traditional watch brands offering smartwatches is growing. They include Fossil, Timex, Swatch, Casio, TAG Heuer, Movado, Frédérique Constant, Alpina, Bulgari, Tissot, Montaine and more. Whether they will help the smartwatch market, or it will help them, remains to be seen. The game is still afoot. Silicon Valley analysts may consider sales of 21 million watches small peas, but in the watch world, that's a big deal: it's nearly as many watches as the entire Swiss industry exported last year (25.4 million).





2 | E-commerce

Last November, in a meeting with financial analysts, Richemont Group Chairman Johann Rupert sounded the alarm about how e-commerce was changing the luxury industry. “I am talking about a massive change in the way business is being done by going digital, a massive change in e-commerce.” Addressing the worsening slump in luxury goods sales, he said, “The sales will come back, but how will they come back? Will they come back in the same way, where people walk into retail stores? I doubt it.”

Richemont had just hired an executive from Google, he said: “We’re appointing new people from e-commerce to be ahead of that curve.”

Compared to other Swiss luxury-watch firms, Richemont may be ahead of the e-commerce curve. But compared to watch companies competing below \$1,200 in the American mid-market, including Swiss ones like TAG Heuer and Movado, most Swiss luxury brands are far behind.

The U.S. market is ground zero for e-commerce. The rise of e-tailing giants like amazon.com is drastically disrupting America’s complex brick-and-mortar distribution system. The watch industry relied on an array of retailers: independent jewellers, regional and national jewellery chains, brand boutiques, department stores, mass merchandisers, outlet stores, etc. Now, though, brick-and-mortar casualties are mounting. Malls are dying; once mighty Macy’s will close 100 stores this year; and 1,269 jewellery stores closed last year, according to the Jewelers Board of Trade. Consequently, mid-range watch firms had little choice but to embrace e-commerce years ago. Virtually all of them sell their watches on their own websites and apps. Many have a network of authorised e-commerce dealers. Citizen, for example, lists 88 “authorised internet retailers” on its U.S. website.

Moreover, e-commerce may be the solution to what many U.S. watch executives consider a serious emerging threat to watch sales: Millennials and the generation behind them, Gen-Z. These youngsters are famously immune to the lure of the wristwatch. They don’t value traditional brands or traditional modes of shopping. So how to reach them? Electronically, via social media. There they discover products and brands that appeal to them. Including watch brands, like

California-based MVMT, founded by two American millennials. Priced between \$95 and \$160, MVMT is a mass-market, not a mid-range brand. But let’s see where they are in five years when the founders turn 30.

3 | Grey market

The rise of e-commerce has exacerbated another distinctive feature of the U.S. watch market: the thriving grey-market sector. Swollen inventories in Asia due to the slowdown in China and the collapse of the Hong Kong market has led to an avalanche of grey-market merchandise in the U.S. Maurice Goldberger, owner of Chiron Inc., in Montreal, is one of the watch industry’s biggest and best-known watch closeout specialists. “2016 got off to a flying start and the market is expected to grow over the next few years,” he told Switzerland’s swissinfo.com last year. “Our growth is particularly strong in North America.”

No surprise there. The size of the American market (Switzerland’s second largest market) and its deeply engrained discount culture have long made it a destination for closeout watches. Last year, though, the influx of grey goods rose to alarming levels. “It’s the worst I have ever seen,” one veteran jeweller told me. Boom times for transhippers are a bane for authorised retailers. With unauthorised e-tailers like amazon.com, eBay, jomashop.com, and others offering tons of new watches at deep discounts, it makes it harder for authorised retailers to move their own bloated stock.

Or to move new goods. At SIHH in January, Baume & Mercier unveiled a new men’s quartz analogue Classima priced at CHF 890 on a leather strap and CHF 1,090 on bracelet. The watches are “priced to sell”, particularly in the United States, B&M’s top market. On amazon.com, however, you can buy a men’s quartz analogue Classima 8485 from the existing collection for \$640. Indeed, a search of amazon.com shows quartz and mechanical watches from a surprising number of Swiss brands selling at bargain basement prices aimed directly at the mid-market buyer.

Can America’s mid-market absorb all the new models flowing into it? Over time, yes. But not this year. With watch pipelines still full, for American watch consumers, it’s still a buyers’ market. ♦



In 2016, the 40th anniversary was marked, fittingly, with a model that mirrors the aesthetic of the original Nautilus: the white gold 44 mm Ref. 5976/1 chronograph, made in a limited edition of 1,300. Its sibling, of which there are only 700, is the platinum Ref. 5711/1. Both models sport diamond hour markers and an anniversary inscription on a blue dial.



Nicholas Foulkes is the author of the newly published Patek Philippe, *The Authorized Biography*.

Cover Story

NAUTILUS, A LASTING COUP DE FOUDRE

BY NICHOLAS FOULKES

The 1970s was a period of immense change. It was the decade of the oil shock, punk rock, runaway inflation, and a humiliating defeat for America in Vietnam. This was an era of disruption, but it was also a decade that marked some outstanding achievements. Take 1976. It was the year that the supersonic Concorde entered regular service; the year that Toronto's CN Tower became the world's tallest building; and the year that Patek Philippe launched its steel sports watch, the Nautilus, water resistant to a depth of 120 metres. Mankind was travelling faster and building higher than ever before; and for the first time since the company was conceived in 1839, Patek Philippe customers could take their watch diving. Concorde would remain in service until 2003, after which we had to return to subsonic crossings of the Atlantic. The CN Tower would retain its title as the world's tallest tower until 2010. But the Patek Philippe Nautilus is still very much in service and on the wrist.

Today the Nautilus is a family of watches with numerous members, and also a close relative, the Aquanaut, introduced in 1997 (see page 13).

Back in the 1970s there was just the Ref. 3700/1a, the watch known fondly as the "Jumbo", but it was enough. Almost everything about it was different from the Patek Philippes of the past: a steel watch that was more expensive than a gold one; the depth underwater to which it could be worn; the stunning integrated case and bracelet design conceived as an aesthetic whole; the idiosyncratic porthole-shaped case; the unusually large case diameter; and even the funky period packaging of a cork box were all departures from the Patek Philippe norm. Conceived by the designer Gérald Genta, this watch has entered horological history as one of the outstanding and enduring designs of the second half of the twentieth century. It is interesting therefore to hear Philippe Stern say of the watch: "I was not quite convinced in the beginning." At the time Philippe was taking on

more responsibility from his father for the running of the company, and in that context his caution was understandable. "It was some time after Gérald Genta suggested we make something like this for Patek Philippe that we finally said okay," he recalls. "We decided we were going to make a prototype. And once we had made the prototype, we decided to launch the Nautilus."

His hesitancy was rooted in the belief that the watch was counterintuitive. "This was during a difficult time. It was difficult for us to fight against quartz watches that were very thin and very fashionable." The Nautilus dared to be different: it was mechanical and it was big. "A fine watch used to be small and thin. This was not quite a new philosophy but a new strategy for Patek Philippe. The Nautilus was a completely new line; it was for new customers, younger customers, people who travelled and played sports." In short, men like Philippe Stern himself.

continued on page 12

1976



Ref. 3700/1

1980



Ref. 3800/1

1981



Ref. 3800/1JA

1996



Ref. 3710/1

1998



Ref. 3711/1G

2004



Ref. 5712/1

2005



Ref. 5711

2006



Ref. 4700/51



Ref. 3900/1JA



Ref. 5712/1



Ref. 5711/1

2007



Ref. 5060/S



Ref. 5980/1



Ref. 5800/1



Ref. 5712

40 NAUTILUS 1976 2016 PATEK PHILIPPE

Following on from the success of the original steel "Jumbo" (top left) of 1976, which remained in the collection until 1990, the Nautilus has been remodelled in a variety of metals, sizes, and dial designs. Milestones include the introduction of medium-sized models in 1981; in 1996, Roman numerals and the first strap model - this hybrid watch paved the way for the Aquanaut launched the following year (read sidebar); and the first ladies' version in 1980.

In 2009 the original designer, Gérald Genta, collaborated on a new ladies' model; while 2013 saw the launch of new strap and bracelet versions with more feminine dials; in 2015, the most recent ladies' watch in the collection was launched, the first self-winding steel ladies' model without diamonds. Initially a simple time and date only watch, the Nautilus incorporated complications for the first time in 1998, introducing a winding gauge, followed in 2005 by a moon-phase model.

The collection's 30th anniversary in 2006 was marked with a self-winding chronograph; while 2010 saw the introduction of an Annual Calendar model with a strap (a metal bracelet version followed in 2012) and the first strap chronograph.

Two popular, practical complications, a Travel Time function and a chronograph, were combined for the first time in a Nautilus case in 2014.

In 2016, the 40th anniversary was marked, fittingly, with a model that mirrors the aesthetic of the original Nautilus: the white gold 44 mm Ref. 5976/1 chronograph, made in a limited edition of 1,300. Its sibling, of which there are only 700, is the platinum Ref. 5711/1. Both models sport diamond hour markers and an anniversary inscription on a blue dial.

2008

2009

2010

2011

2012

2013

2014

2015

2016



Ref. 5713/1



Ref. 7010



Ref. 5726



Ref. 5990/1



Ref. 5711/1P



Ref. 7010/1



Ref. 7008/1



Ref. 5980/1AG



Ref. 7118/1



Ref. 5719/1



Ref. 5726



Ref. 7018/1



Ref. 5976/1G



Ref. 7011/1



Ref. 5980



Ref. 7014/1



Ref. 7118/1200



Ref. 5722



Ref. 7021/1



Ref. 5724



The original Nautilus box



One of the first advertisements for the Nautilus, stressing the versatility of the watch.

(continued)

Then in his late thirties, Stern was a vigorous man. He was an accomplished skier who, had he not entered the watch industry, could have competed at the highest level. He was a keen yachtsman, too, and a frequent victor in regattas on Lake Geneva – a fact of which Genta was well aware, as his widow, Evelyne Genta, explains, “The Stern family was always sailing. So Gérald thought of boats, and when he thought of boats he thought of the shape of the portholes.”

Gérald Genta had designed the Royal Oak for Audemars Piguet a few years earlier. It shares some of the characteristics of the Nautilus, but the later watch shows the development of Genta’s style. Much like the great artists whose work continues to evolve over the course of a creative lifetime, looking at the preliminary sketches and paper maquettes it is possible to follow the designer’s thinking as he worked toward a horological expression of functional elegance or elegant functionality. In Genta’s opinion, the Nautilus represented a progression from the Royal Oak.

“He wanted it to be more anatomical than the Royal Oak,” Evelyne Genta continues. “He felt the Royal Oak was really only sporty – although now people wear them with dinner jackets,” she laughs. “By contrast, he felt that the Nautilus was sporty but that it could be worn all day.” This was something that early advertising for the Nautilus made clear, stressing the versatile elegance of the piece as much as its ruggedness and water resistance. “They work as well with a wet suit as they do with a dinner suit,” was one advertising slogan. However, there was a downside to this new type of Patek Philippe watch. It was incredibly difficult to make. It appeared at a time when watchmaking companies were bringing more of the manufacturing process in-house and that included case and bracelet making. A few years ago I visited the polishing workshops at Patek Philippe where I marvelled at the satinage, polissage, chutage, anglage, avivage, sablage, lavage, feutrage, emerisage,

“When the watch made its debut, it was greeted with overwhelming... incomprehension. At the beginning, the public was not really ready to understand it or to accept it.”

lapidage... all of the various polishing techniques applied to the Nautilus’s many surfaces: some rounded and smooth, some sharply defined and angular, some polished to brilliance, others satinated.

Creating the Nautilus and its bracelet remains demanding and exigent work, even 40 years after its launch. In the early 1970s, it was positively daunting, recalls Jean-Pierre Frattini, the veteran Patek Philippe case maker and designer who worked with Gérald Genta. “When waterproof watches came in, they brought new problems. We made water resistant watches that could withstand being held under a tap, but they were not waterproof for wearing while swimming,” remembers Frattini. “There were problems with production at first, relating to the joint that was visible from the side. We had many discussions about this. The waterproofing was farther inside the watch, not at this joint where there was a kind of lip, so if some water did get into the watch it couldn’t get out again and could stagnate.”

Working with specialists, the problems were gradually overcome. Nevertheless, it is ironic that, at first, such an avant-garde design had to be made in a traditional way with parts that were not interchangeable and case components that needed to be numbered to insure that they remained paired, and dials and glass that would sometimes have to be recut to fit. However, by 1975 the functioning prototype was undergoing testing, albeit of an informal kind, on the wrist of Gérald Buchs, who was in charge of watch creation at Patek Philippe at the time. “I remember being in Zermatt in 1975 and I was wearing the first prototype,” says Buchs. “I would dip it into all the fountains and streams I came across –testing it to find out if it was watertight. I would put it in the sun to see if it showed any condensation under the glass as it dried. And of course, it passed the test!”

The following year the watch made its debut. It was greeted, Philippe Stern recalls, with overwhelming... incomprehension. “Maybe at the beginning, the public was not really ready to understand it or to accept it,” he says, adding with typical understatement, “but little by little it became established.” There were some for whom the Nautilus was a coup de foudre – a case of love at first sight – among them its designer. “It was his favourite watch. He loved his Nautilus,” recalls Evelyne Genta of her late husband. Among all the various models he owned, it was “the prototype that he liked best of all. Later in life, a few years before he passed away, he worked on a new dial.” Far from being bored by revisiting a design he had made a generation before, “he loved it, he absolutely loved it. He felt that this watch hadn’t got a wrinkle. To him the Nautilus was an amazing masterpiece; it always was.” ♦

NAUTILUS SPIN-OFF AQUANAUT CELEBRATES ITS 20TH BIRTHDAY

In 1996, 20 years after the Nautilus was launched, its seemingly unstoppable popularity appeared to stall. In response, Patek Philippe decided to launch a new version designed to appeal to a younger clientele. Thus the reference 5060/S became the first Nautilus to come with a leather strap. The dial was given Roman numerals, and some alterations were made to the 35.6 mm gold case: the two "hinges" on either side, affectionately called the "ears", were shaved back, giving the watch an appreciably different look from previous Nautiluses.

This new reference was very well received by the public. So much so, in fact, that it was sent off to found its own family, closely related to the Nautilus. And so the following year, 1997, the Aquanaut was launched. The octagonal steel case of the new Aquanaut was reminiscent of the Nautilus, but the design was rounder, more mellow. The highly distinctive embossed chocolate-bar dial motif was echoed on the composite rubber strap. The applied Arabic numerals and chunky hands made it highly legible. The first model was equipped with the same 330 SC movement as the Nautilus that inspired it. The Aquanaut thus offered the younger generation a watch that was both sporty (being water-resistant to 120 m) and stylish: truly a go-anywhere watch. It was instrumental in helping Patek Philippe win over new, younger, converts.



Like the Nautilus, the Aquanaut collection would go through a number of iterations over its (so far) 20-year history. It would be produced in gold, with a gold bracelet, and its size changed, inflating up to 38.8 mm for men and shrinking down to 29.5 mm for the ladies' model. In 2004 Patek made a definitive bid for the women's market with the highly anticipated 35.6 mm Dame Aquanaut Luce collection. This model introduced a whole new colour palette – Pure White, Mysterious Black, Midnight Blue, Adventurous Khaki, Ocean Blue and Luscious Plum – and a diamond-set bezel.

For its 10th anniversary, in 2007, the design was slightly modified to give it a sturdier, more powerful presence. Then, in 2011, a complication became available for the first time: the Aquanaut Travel Time.

This year, to celebrate the Aquanaut's 20th anniversary, Patek Philippe is proposing the Aquanaut Reference 5168G, a men's model in a new 42.2 mm diameter Jumbo size, driven by the automatic calibre 324 SC. With an embossed dial subtly shading from black to midnight blue, a satin-brushed bezel and a generously proportioned white gold case water resistant to 120 m, its unapologetically masculine appearance is the epitome of contemporary sport chic. ♦ (PM)

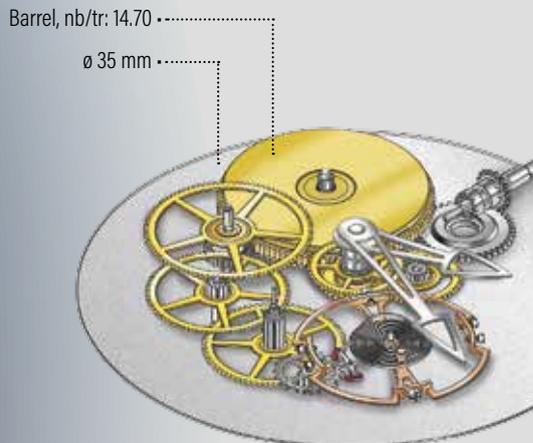
FROM LESS TO NANO...

GREUBEL FORSEY MECHANICAL NANO

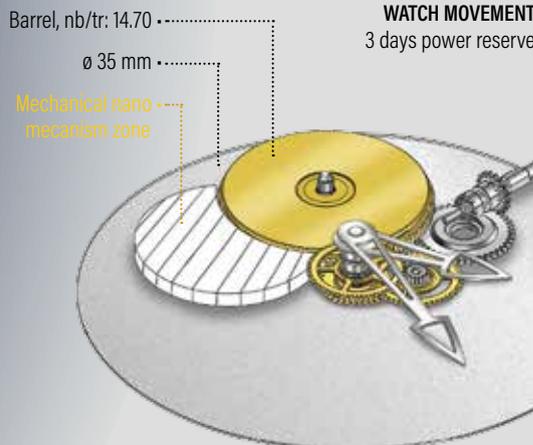
The minuscule
deadbeat second,
spinning inside the case,
seen through a hole in the case
equipped with a magnifying glass.



This drive wheel can operate using power of **20 nano-Newtons**, which is **100,000 times less** than the energy required to move an escapement wheel.



CONVENTIONAL WATCH MOVEMENT
3 days power reserve



MECHANICAL NANO WATCH MOVEMENT
180 days power reserve,
volume gain + 90%

Nano is watchmaking's next frontier. For a number of years now, watchmakers' R&D departments have been exploring this promising new territory. Greubel Forsey, through its EWT Laboratory, has been working for the last ten years "in the greatest secrecy" on pushing back the limits of miniaturisation. At the recent SIHH, Greubel Forsey took the wind out of everyone else's sails by unveiling some of their theoretical advances, providing a glimpse of a minuscule deadbeat seconds, barely one millimetre high, spinning swiftly inside the case.

On paper, the advances that would enable watchmaking to take a nanometric approach are spectacular, and we can expect some major upheavals. Just look at the advantages put forward by Greubel Forsey, as a result of their groundbreaking research:

- gains in volume, resulting in up to 90% more space available
- gains in energy, with consumption reduced by up to a factor of 60
- simplified mechanisms with up to three times fewer components required (in the 2016 prototype) renewed creativity and new approaches.

Through the loupe built into the caseband we were able to admire in person the crazy nano-hand, galloping through the eighths-of-a-second, nestled in the heart of the watch. It's truly mind-boggling.

"Gaining this much energy and this much space opens up perspectives that we could never have dreamed of before," explains Stephen Forsey. "By economising energy consumption by up to 60 times, we can achieve power reserves that, at this stage in our research, are as high as 180 days, using a regular-sized barrel. What is more, we can use the energy produced by air turbulence inside the movement: 'draughts' have become functional. So a drive wheel can operate using power of 20 nano-Newtons, which is 100,000 times less than the energy required to move an escapement wheel."

Contrary to what one might imagine, working on a nanometric scale (there are one billion nanometres in a metre) is not about using the same components, only smaller. Far from being a microscopic reproduction, moving from a scale of tenths and thousandths to billionths provides an opportunity to completely reconfigure the energetic and spatial distribution of a movement. The space freed up – which is considerable on the scale of a watch movement – provides an opportunity to consider hitherto undreamed-of functions. But which? "A whole new space has opened up," replies Stephen Forsey. "It forces us to think about what we're going to do with all this volume. It really is a Terra Incognita. We've already added a frequency indicator. But what comes next? The creative and functional opportunities are literally unheard-of."

Over the course of 2017 and 2018 Greubel Forsey will unveil the results of its research, implemented in two prototypes. We are promised a look at the first Mechanical Nano time-piece "in the near future". ♦



LAUREATO, STEEL CASE, 42 MM

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